

**A Thesis Submitted for the Degree of PhD at the University of Warwick**

**Permanent WRAP URL:**

<http://wrap.warwick.ac.uk/129480>

**Copyright and reuse:**

This thesis is made available online and is protected by original copyright.

Please scroll down to view the document itself.

Please refer to the repository record for this item for information to help you to cite it.

Our policy information is available from the repository home page.

For more information, please contact the WRAP Team at: [wrap@warwick.ac.uk](mailto:wrap@warwick.ac.uk)

# Through Whose Lens?

## The Politics of Regional and Global Surveillance and Systemic Risk in East Asia

Maria Theresa Anna Castillo Robles

A thesis submitted in partial fulfilment of the requirements for the  
degree of Doctor of Philosophy in Politics and International Studies

Department of Politics and International Studies

The University of Warwick

February 2019

## Table of Contents

List of Figures.....	vi
Acknowledgements.....	vii
Declaration.....	ix
Abstract.....	x
List of Abbreviations.....	xi
CHAPTER 1	
<i>Introduction</i> .....	1
1.1 The view from above: post-crisis global economic governance, surveillance, and systemic risk.....	3
1.1.1 Surveillance.....	5
1.1.2 Systemic risk.....	11
1.2 The view from below: the politics of economic methodology.....	14
1.3 The view from a different angle: research questions and thesis contributions.....	18
1.4 Methodology and data.....	21
1.5 Main findings and chapter structure.....	28
CHAPTER 2	
<i>The Articulation of Economic Growth in East Asia: Reconsidering East vs. West Dichotomies</i> .....	32
2.1 Introduction.....	32
2.2 Tracing the discourse on economic growth in East Asia.....	37
2.2.1 East Asian Miracle.....	38
2.2.2 Washington and Post-Washington Consensus.....	40
2.2.3 Beijing Consensus and the China model.....	42
2.2.4 ‘Asian Century’ and the ASEAN Economic Community.....	44
2.2.5 Challenging East vs. West dichotomies.....	47
2.3 Deconstructing dichotomies in East Asian economic growth.....	48
2.3.1 East Asian Miracle.....	49
2.3.2 Asian financial crisis.....	51
2.3.3 Global financial crisis.....	53
2.3.4 Implications for policy justification.....	58
2.4 Reconciling economic sovereignty with external accountability.....	60
2.4.1 Historical context of economic sovereignty in East Asia.....	61

2.4.2 Shifting boundaries of economic sovereignty .....	63
2.4.3 Economic sovereignty and external accountability.....	66
2.5 Conclusion .....	68
CHAPTER 3	
<i>The Persistence of Modelling: Proof of Expertise, Pretext for Its Limitations</i> .....	70
3.1 Introduction.....	70
3.2 Mathematical modelling after the global financial crisis .....	73
3.3 Mathematical modelling, disciplinary boundaries, and the politics of expertise.....	81
3.4 Alternative explanations for the persistence of mathematical modelling	87
3.4.1 Orthodox vs. heterodox economics.....	88
3.4.2 Knowledge and its limitations .....	92
3.5 Conclusion .....	96
CHAPTER 4	
<i>The Politics of Economic Methodology: Defining and Displacing Accountability through Mathematical Models</i> .....	98
4.1 Introduction.....	98
4.2 Reasoning and representation through mathematical models .....	100
4.2.1 Methodological (universal economic logic).....	102
4.2.2 Unpacking the political in the methodological .....	106
4.2.3 Political (multiple logics).....	109
4.2.4 Interplay between methodological and political logics .....	114
4.3 Disentangling accountability in mathematical models .....	116
4.3.1 Approaches towards disentangling accountability .....	117
4.3.2 Mechanisms for definition and displacement of accountability in mathematical models.....	120
4.4 Conclusion .....	125
CHAPTER 5	
<i>Modelling Systemic Risk (or How to Measure the Immeasurable)</i> .....	128
5.1 Introduction.....	128
5.2 Defining systemic risk.....	130
5.2.1 Definitions and dimensions of systemic risk .....	131
5.2.2 Systemic risk as a technical and political construction.....	134
5.3 Manoeuvring through systemic risk modelling.....	137

5.3.1 Navigating complexity, uncertainty, and ambiguity through strategic means .....	139
5.4 Transboundary nature of systemic risk and implications for shared risk governance .....	142
5.5 Conclusion .....	147
CHAPTER 6	
<i>Multilateral Surveillance and Macroprudential Policy: Managing Internal Stability and External Spillovers</i> .....	149
6.1 Introduction .....	149
6.2 Multilateral surveillance as a necessary measure towards global financial stability.....	151
6.2.1 Expanding scope of IMF surveillance through the years.....	151
6.2.2 IMF surveillance in theory vs. practice.....	157
6.3 Regional surveillance as a necessary measure to support multilateral surveillance.....	164
6.4 Macroprudential policy as a necessary part of the surveillance toolbox 174	
6.4.1 The story thus far.....	176
6.4.2 Reconciling expectations with limitations.....	181
6.5 Conclusion .....	185
CHAPTER 7	
<i>Systemic Risk and Spillover Analysis: Blurring and Reifying Dichotomies through Mathematical Models</i> .....	187
7.1 Introduction.....	187
7.2 Reasoning behind the design and development of spillover models..	190
7.2.1 Model overview .....	191
7.2.1.1 IMF models .....	191
7.2.1.2 ADB and AMRO models.....	197
7.2.2 Different models, similar approach .....	202
7.3 Representing ‘the economy’ in IMF and AMRO surveillance reports..	206
7.3.1 Geographical spillover analysis: global vs. regional surveillance reports 207	
7.3.2 Sectoral spillover analysis: IMF Article IV report vs. AMRO thematic study .....	213
7.4 Conclusion .....	218

## CHAPTER 8

<i>Conclusion</i> .....	221
8.1 Main findings.....	223
8.2 Contributions .....	229
8.3 Limitations and prospects for future research .....	232
Bibliography .....	237

## **List of Figures**

Figure 1 – Logics driving mathematical modelling .....	100
Figure 2 – IMF Managing Director Michel Camdessus with Indonesian President Suharto (15 January 1998, Jakarta).....	221

## **Acknowledgements**

I have been told that I have uttered the phrase ‘it seemed like a good idea at the time’ one time too many over the last four years. In this space, I would like to extend my heartfelt gratitude to those who disagreed with me, as well as those who agreed that I made mistakes but were generous with their support, kindness, and friendship anyway.

I would like to thank my supervisors Ben Clift and Dominic Kelly for their support and guidance. Dom gave helpful feedback on my writing; Ben’s thorough review and insightful advice provided the clarity I needed. The people at WBS Create made my stay at Warwick possible and their support went beyond any expectations I had as their part-time colleague. I am indebted to the British Foundation for Women Graduates for the funding they provided during my final year. I also benefited from conversations with former colleagues at ADB and RSIS, which triggered some of the questions that led to this thesis.

Distance and prolonged bouts of silence never deterred friends from Manila, Barcelona, Chennai, Singapore, and Hong Kong. I am lucky to have Charisse Tubianosa and Arudhra Krishnaswamy in my life, in addition to friends from school and work who have stood by my side through all these years.

D1.03 would not have been my (slightly smelly) sanctuary for three years if it were not for the presence of Javi Moreno Zacaes, Lorenzo Genito, and Luke Bantock. Javi endured my snarky mumbling and brushed off repeated (albeit accidental) attempts to induce an allergy attack. Lollo was generous with his friendship, music finds, and CCP expertise, as well as with unsolicited gifts he was happy to share even after moving to Dublin. Luke was a late addition to the office but it never felt that way and I am glad that he stuck around.

Friendships were also forged with people from across the halls. I enjoyed Alexis Moraitis’ random visits to the office and our trips to the pubs of Earlsdon. I do not think I ever admitted this to him but Antonio Ferraz de Oliveira made the stressful final stretch bearable. I am also grateful that Federica de Pantz



remained my friend after the disaster that was Ljubljana. She has been an incredible source of sensible conversations and bizarre humour ever since. Off campus, my housemates in Earlsdon provided a welcome respite from PhD-related anxieties.

Meeting a few kindred spirits along the way made the PhD all the more meaningful. Divya Rao was one of those wonderful curveballs that life throws your way. Tereza Jermanova left at the end of my third year, but I still miss her unique way of cheering me up and making me uneasy at the same time. It is not fair to say that Maria Giraudo also abandoned me when she moved to York, but I have come to rely on her friendship—I cannot thank her enough for having the uncanny ability to know when to push when I would not even admit to myself that I needed her pushing. I might have tolerated Jack Copley’s endless stream of dad jokes and banal comments, but all that pales in comparison to what he had to go through as he reviewed most of my chapters and was at the receiving end of both literal and figurative jabs. Thank you for seeing value in my work and keeping an open mind about my weird thesis. Although Jack frequently tried to restrain me from diving into yet another thesis rabbit hole, Aya Nassar is a fan of both rabbits and holes so she happily indulged me in these instances. I could not have asked for a better fellow explorer, be it through the streets of Coventry or within the walls of D1.03.

Much has changed in the last four years but I can always count on my family for their unconditional love and support. I want to thank Tita Lita and Tito Noel for always welcoming me with open arms whenever I visited Leuven. Tina is the newest member of our family but one would never have guessed with her infinite levels of patience and support. Kuya Mike never failed to embarrass and encourage me in equal measure, as the best brothers are wont to do. It may seem trite to say this at this juncture but none of this would have been possible without Mama and Papa. These words, nor the 80,000 or so in the following pages, cannot do justice to all that they have done for me. But I will keep trying anyway, because as my family knows very well, I am stubborn like that.

### **Declaration**

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree.

Parts of this thesis have been adapted and published by the author: Robles, Theresa. 2015. 'Regional and Multilateral Surveillance: Normative Tensions and Implications for Cooperation in East Asia'. *Global Policy* 6(1): 34–44.

## **Abstract**

Financial and macroeconomic surveillance involves the construction of metrics and models defining what represents ‘strong’ economic fundamentals and how this translates to growth. The conduct of surveillance is also driven by the notion that countries should be held accountable to the international community for the external impact of their internal policy decisions. Whilst surveillance is portrayed as a technical and apolitical exercise, it is also a political statement on what constitutes economic growth and what its sources and consequences are. This thesis examines the expansion of regional (East Asia through ASEAN+3) and global (IMF) surveillance frameworks after the global financial crisis to illustrate how the seemingly technical process of surveillance is a political exercise as well. Specifically, it argues that the mathematical models underpinning surveillance are a useful political resource in two ways: First, the emergence of different surveillance models to support regional and global surveillance gives technical justifications for competing political assertions on the risks to economic growth. Second, the proliferation of overlapping surveillance models simultaneously defines and displaces accountability in global economic governance.

Mathematical modelling involves the construction and maintenance of a false dichotomy between the technical and the political. Despite its prevailing problems, the appeal of surveillance as a technocratic regulatory project has not wavered as its models can be used to justify the growing demands for and limitations of technical interventions in global economic governance. This thesis contributes to related studies on the politics of metrics and models in economic policy by examining these two parallel yet contradictory processes as a product of methodological choices specific to the practice of mathematical formalism. It does so by developing an interdisciplinary approach drawing from philosophy of science, economic sociology, and IPE literature to trace the interplay between technical and political logics in mathematical modelling.

## **List of Abbreviations**

ABFI	Asian Bond Fund Initiative
ADB	Asian Development Bank
AEC	ASEAN Economic Community
AMRO	ASEAN+3 Macroeconomic Research Office
APEC	Asia-Pacific Economic Cooperation
ASA	ASEAN Swap Agreement
ASEAN	Association of Southeast Asian Nations
ASEAN+3	Association of Southeast Asian Nations Plus Three (China, Japan, South Korea)
ASEAN-5	Indonesia, Malaysia, Philippines, Singapore, and Thailand
BIMP-EAGA	Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area
BIS	Bank for International Settlements
CCP	central counterparty
CMI	Chang Mai Initiative
CMIM	Chang Mai Initiative Multilateralisation
DCC	Dynamic Conditional Correlation
DSGE	Dynamic Stochastic General Equilibrium
EBA	External Balance Assessment
ERDP	Economic Review and Policy Dialogue
ERIA	Economic Research Institute for ASEAN and East Asia
FLAR	Fondo Latinoamericano de Reservas
FSB	Financial Stability Board
FSGM	Flexible System of Global Models
G-20	Group of Twenty
GDP	gross domestic product
GEM	Global Economy Model
GIMF	Global Integrated Monetary and Fiscal Model

GVAR	global vector autoregression
IEO	Independent Evaluation Office
IMF	International Monetary Fund
IFI	International financial institution
IPE	International Political Economy
LGFV	local government financing vehicles
LTI	loan to income
LTV	loan to value
NGO	non-governmental organisation
OTC	over the counter
REMU	Regional Economic Monitoring Unit
SOE	state-owned enterprises
TA <sup>2</sup>	technical apparatus and architecture
UMP	unconventional monetary policy
UNICEF	United Nations Children's Fund
VAR	vector autoregression
VIEWS	Vulnerability Indicators and Early Warning System
WEO	World Economic Outlook

# CHAPTER 1

## *Introduction*

---

In 1999, it was confidently proclaimed that '[b]y almost any market test, economics is the premier social science' (Lazear 2000, 1). After the 2007 global financial crisis, the new assessment was that 'economics has the awkward distinction of being both the most influential and the most reviled social science' (Chernomas and Hudson 2016, cited in Fourcade 2018, 1). The drastic shift in the discipline's reputation should not come as a surprise as the crash provided considerable fodder for attacks against economics and economists. Even before the dust had settled, mainstream media—which had traditionally shied away from such technical matters—was publishing articles with bold titles such as 'How did economists get it so wrong?' (Krugman 2009) and 'What went wrong with economics?' (The Economist 2009b). Yet, as noted by above, such condemnations<sup>1</sup> had no discernible impact on the influence of economics as a discipline. Instead, the direction of post-crisis policy reform served to cement the authority of economic expertise even further as the crash was diagnosed as a 'socio-technical failure' that can be remedied with sophisticated technical interventions (Engelen et al. 2012, 361). One such example is the intensification of financial and macroeconomic surveillance (henceforth referred to simply as 'surveillance') at both regional and global levels.

As one of the main pillars of global economic governance, surveillance presents an important case for analysing the seemingly contradictory developments that have shaped post-crisis policies to date. Contradictions emerge in several ways. With respect to economics, recent surveillance reform is

---

<sup>1</sup> Ricardo Reis (2018) is one exception to this trend, as he evaluates the use of macroeconomics in research, policy, forecasting, and teaching. Relative to other fields, Reis does not agree that macroeconomics deserves the extent of the criticisms it has received since the global financial crisis.

a product of rising demands for economic expertise and growing recognition of its limitations. From the perspective of ideational analysis, changes in regional and global surveillance both support and contest shared understandings of what it means to be ‘good’ economic citizens and what constitutes ‘strong’ economic fundamentals. There are parallels in the context of post-hegemonic global economic governance, as regional surveillance is simultaneously depicted as complement and competition to its global counterpart. Whilst these points are valid in certain respects, it is also important to move beyond the conventional framing of these debates in terms of distinct and conflicting dynamics. By studying these processes in isolation, we neglect the constitutive character of various dimensions of global economic governance; in doing so, we run the risk of reducing unforeseen outcomes in times of crises to contradictions or anomalies. This thesis offers a provocation as it seeks to understand these three ostensibly separate and paradoxical developments as a manifestation of one process with its own mechanisms for coherence and resilience, specifically the politics of economic methodology.

Focusing on the expansion of regional and global surveillance frameworks after the global financial crisis, this thesis seeks to illustrate how the seemingly technical process of surveillance is a political exercise as well. Specifically, it argues that the mathematical models underpinning surveillance are a useful political resource in two ways. First, the emergence of different surveillance models to support regional and global surveillance gives technical justifications for competing political assertions on the risks to economic growth. Second, the proliferation of overlapping surveillance models simultaneously defines and displaces accountability in global economic governance.

This chapter begins the enquiry by locating the thesis’ specific interest—regional and global surveillance—within and in contrast to relevant International Political Economy (IPE) debates. Section 1.1 provides a quick overview of relevant IPE debates on post-crisis global economic governance, followed by an outline of more specific discussions on regional (East Asia

through the Association of Southeast Asian Nations Plus Three<sup>2</sup> [ASEAN+3]) and global (International Monetary Fund [IMF]) surveillance and systemic risk. Section 1.2 illustrates how this thesis offers a different reading by foregrounding the importance of the politics of economic methodology. Section 1.3 presents the research questions and the thesis' core empirical and conceptual contributions. Section 1.4 specifies the chosen methodology and data sources. The main findings and chapter structure are summarised in Section 1.5.

### **1.1 The view from above: post-crisis global economic governance, surveillance, and systemic risk**

When the stability and functionality of the global economy hinge on common expectations and definitions of what constitutes the international financial system and the appropriate mechanisms for its regulation (Drezner and McNamara 2013), this raises the question of how a shared understanding is arrived at amongst multiple actors. Likewise, such concerns influence how consensus (or lack thereof) drives multilateral efforts such as surveillance. Financial and macroeconomic governance is a 'profoundly intersubjective domain' (Best 2005, 23), where the interplay between ideas and power are both the outcome and determinants of the global architecture. This is a familiar theme that permeates IPE scholarship on various aspects of global economic governance, particularly amongst those who subscribe to constructivist approaches. Yet it is rare to encounter studies that probe into the forms of reasoning and representation that gave rise to the economic ideas that dominate financial and macroeconomic regulation. Whilst the political implications of metrics (Broome and Quirk 2015; Mügge 2016) and influential economic models (Watson 2014; Braun 2014) have been raised, the politics inherent in methodological choices are seldom uncovered. This oversight might appear to be

---

<sup>2</sup> Member countries include the core ASEAN countries (Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam) as well as China, Japan, and South Korea.



a consequence of disciplinary boundaries as the significance of methodological issues have not escaped scholars working within economic sociology and philosophy of science. However, given IPE's interest in the interplay between ideas and power, a case can be made for a dialogue between IPE, economic sociology, and philosophy of science. If we accept that economic ideas are both a political resource and the subject of political contestation, then understanding the logics behind the form that these ideas take (e.g., mathematical formalism) is also as important as its content. The flawed yet persistent tendency towards mathematical modelling (and the attendant efforts to assert technical control over markets) merits closer investigation of its underlying logics of reasoning and representation, more so as it continues to underpin global economic governance without any signs of wavering.

This section provides an overview of existing IPE accounts of post-crisis global economic governance, surveillance, and systemic crisis. Whilst many of the topics covered below will be expanded on in the subsequent chapters, this section frames the discussion around the notion of normative solidarity in surveillance and its repercussions for the rise of regional surveillance in East Asia. This is used to highlight the centrality and endurance of the principle of external accountability across regional and global surveillance. However, the incorporation of systemic risk in post-crisis surveillance creates new issues in terms of the application of external accountability. A deeper appreciation of these concerns requires foregrounding the politics of economic methodology in the analysis.

Debates on the politics of economic ideas have made significant contributions to our understanding of the trajectory of post-crisis global economic governance. Over a decade has passed since the 2007 financial crisis, yet we are still uncovering various aspects of the pace and processes of change (or continuity) in its aftermath. For instance, Eric Helleiner argues that, despite expectations that the crisis would pave the way for transformative change in global economic governance, the crash turned out to be 'a strangely conservative

event' (Helleiner 2014, 2) in that the policy reform was still largely determined by the structural power of the United States. In another study, Mark Blyth (2013) uses Peter Hall's (1993) seminal work to demonstrate that the global financial crisis ultimately fell short of pushing a third order paradigm shift. Blyth's assessment steers clear of drawing state-centric lines of causality as Helleiner does as he lists the absence of viable alternatives, disciplinary incentives, and the consolidation of authority as reasons for the persistence of the status quo. These authors share a common denominator with the articles included in a volume edited by Andrew Baker and Geoffrey Underhill (2015), as they note how ideational analyses of post-crisis reform reveal how institutions and institutional settings frame the terms and prospects for policy action (Schmidt 2010; Campbell 2004). Studies focusing on financial crises as critical junctures that will act as tipping points for reform (Harberger 1993; Drazen and Grilli 1990; Drazen and Easterly 2001) have been countered by others claiming that critical junctures are insufficient in themselves, as such events only give rise to ideas and understandings that gain support and credibility given particular institutional contexts (Ashbee 2013).

### *1.1.1 Surveillance*

As will be discussed in greater detail in Chapter 6, similar concerns about ideational and institutional constraints pervade most IPE literature on the IMF<sup>3</sup> and its surveillance operations. The conduct of global surveillance (i.e., multilateral surveillance as conducted by the IMF) is a core component of the Fund's mission to monitor the international monetary system and review the economic and financial policies of its member countries. Surveillance evolved through the years to adapt to changing views of how the global economy operates and how national priorities and responsibilities respond in the process. As the gap between IMF surveillance in theory and in practice persists, various

---

<sup>3</sup> Also see Park and Vetterlein (2010) and Chwiero (2010), amongst others. Outside IPE, critical geographers have also investigated the IMF, as seen in E. Jeffrey Popke's (1994) work on how IMF practices create discursive scripts that naturalise dominant narratives of modernisation and the global order.

scholars (for instance, see Lombardi and Woods 2008; Broome 2008; Moschella 2010, 2012; Clift 2018) have offered different accounts of the continued relevance of IMF surveillance. Central to these interpretations is the importance of the IMF's role in creating and maintaining the parameters of the shared normative basis of global economic governance. As Louis Pauly observes:

‘For the delegated authority of the Fund to be considered legitimate in a world of integrating markets and still-sovereign polities, its behaviour would have to remain consistent with an underlying and broadly shared sense of the rightness of its prescriptions, which would in turn have to be deemed universally applicable, *at least in principle*’ (Pauly 2008, 190, italics added).

However, evidence of ‘an underlying and broadly shared sense of the rightness of [the IMF’s] prescriptions’ is mixed. To be sure, perceptions vary across country groupings and across areas of IMF operations. For instance, a survey conducted by the IMF’s Independent Evaluation Office (IEO) in 2009 shows that authorities in large advanced economies were unsatisfied with the Fund’s work on international policy coordination, policy development, and outreach. Amongst large emerging economies, the problems identified were related to surveillance, which were seen as lacking value and evenhandedness. Specifically, the survey results show that 86% of respondents from large emerging economies believed that ‘surveillance was in the interest of the “largest IMF shareholders”’ (IEO 2011a, 35). A separate assessment of surveillance reports prepared by the IMF’s Asia-Pacific Department supports this finding (Montiel 2011). Nonetheless, commitment to IMF surveillance has yet to waver. Pauly qualifies his comment above as he states:

*‘In practice, the task of defending and deploying its authority would never be easy, straightforward, or finally accomplished, and the actual power of the Fund would remain ambiguous and variably applied. Nevertheless, agreement on the normative foundation of the core mission of the Fund sufficient for it to evolve and adapt to changing circumstances represented*

a signal innovation in modern economic history' (Pauly 2008, 190, italics added).

As debates continue regarding member countries' perception of the value and relevance of IMF surveillance, this thesis presents an analysis of surveillance that converges with other studies in that it agrees that the endurance of the Fund's role is built on a shared normative understanding. However, in light of the inconclusive evidence on the effectiveness of surveillance amongst member countries, this thesis employs a different conceptualisation of the basis of this shared norm. Similar to Pauly, the approach developed in this thesis supports the emphasis on the stated conduct of surveillance 'for the benefit both of the international community as a whole and of individual member states' (Crow, Arriazu, and Thygesen 1999, 17). In particular, the analysis that will unfold in the subsequent chapters highlights the significance of the principle of external accountability, which requires that countries be held accountable to other members of the international community in light of the external spillovers of their internal policy decisions (Pauly 1997). However, with no formal mechanisms for ensuring accountability, continued adherence to the principle of external accountability needs to be interpreted within specific parameters. As will be explained in Chapter 4, accountability in the context of global governance requires actors to justify their conduct to other involved parties (Held and Koenig-Archibugi 2004). With this reading, external accountability then calls for countries to justify the external impact of their internal policy decisions; surveillance can then be construed as a platform for policy justification and reputational management (Busuioc and Lodge 2016). This interpretation informs this thesis' notion of surveillance as a tool for policy justification, which can then be used to account for the persistent relevance of surveillance despite disagreements regarding its effectiveness amongst member countries.

Focusing on external accountability and policy justification also allows us to account for the emergence of regional surveillance platforms. On this point, this thesis parts ways with Pauly's assessment that 'the more serious challenge

to Fund surveillance is the potential erosion of normative solidarity represented by a proliferation of regional competitors and alternative forums' (Pauly 2008, 207). Granted, there are several reasons to believe that such fears are warranted. This is especially true in the case of East Asia, where the disastrous effects of the IMF's intervention during the 1997 Asian financial crisis continue to shape regional initiatives even after two decades have passed. Chapter 2 will tackle the transformation of the discourse on economic growth in East Asia from the period before the 1997 downturn to 2018. Chapter 6 will discuss in greater detail how 'the IMF stigma' looms large in the evolution of regional surveillance and how it both facilitated and constrained the various iterations of surveillance in East Asia through the years. However, in contrast to the case of the IMF, the concept of normative solidarity in East Asia takes a significantly different form. To the extent that a particular form of normative solidarity exists in East Asia, this can be traced to the so-called 'ASEAN way', which upholds the norms of non-interference, non-alignment, and consensus decision-making. Moreover, the historical context behind the creation of ASEAN means that region-building is also an exercise in nation-building; likewise, consolidation of regional authority also acts to consolidate state authority.

Hence, whilst conventional notions of normative solidarity in the IMF put emphasis on 'an underlying and broadly shared sense of the rightness of its prescriptions' (Pauly 2008, 190), this does not carry the same weight in ASEAN. Under the rubric of ASEAN, there have been a number of initiatives (with varying degrees of success, as outlined in Chapter 6) from the Manila Framework Group to the ASEAN+3 Macroeconomic Research Office (AMRO). The Asian financial crisis triggered initial attempts at regional surveillance. In light of the failures of existing IMF surveillance in the run-up to the crisis, early studies highlighted how regional surveillance can complement global mechanisms as it can provide regional expertise and create a venue for peer review amongst other regional policymakers (Manzano 2001; Anas and Atje 2005). Despite these reasons, many observers were sceptical about the prospects of surveillance in East Asia, largely

due to resource and institutional limitations, leadership issues, and divergences in individual state interests (Hill and Menon 2012; Grimes 2012). These concerns persisted in the years immediately following the 2007 crisis but the noteworthy expansion of AMRO operations in recent years suggests that these fears may have been premature. The earlier rationale for regional surveillance should also be revisited, as the effectiveness of the peer review process has been questioned (Anas and Atje 2005). It is curious that in 2013, AMRO staff members Reza Siregar and Akkharaphol Chachitrchaidol gave an enthusiastic defence of the office's decision not to publish reports and surveillance results as it:

'can foster an environment more conducive to an exchange of views and perspectives between the AMRO team and the members' policymakers in a setting where authorities are more receptive and open to frank discussions and criticism... and prevents delays arising from requests for revision by the relevant country's authorities' (Siregar and Chabchitrchaidol 2013, 19–20).

Four years later, in the year of the 10<sup>th</sup> anniversary of the Asian financial crisis, AMRO abandoned this policy and began releasing its reports to the public. This new publication strategy is a core component of the office's efforts to strengthen accountability mechanisms (AMRO 2018a). This development should be read as part of a broader shift in ASEAN's strategic goals, as elaborated in Chapter 2. Whilst the centrality of the ASEAN way remains, the rationale of region-building now put more emphasis on asserting its place in the global economy (ASEAN 2015, 2017). Moreover, the rhetoric employed frames East Asia's rising prominence in the global economy in terms of two dimensions: the first stresses the importance of maintaining domestic growth and strengthening internal (regional) resilience amidst external (global) risks; and the second underscores the region's role as a key player in the global community and an acknowledgement of the responsibilities and influence that comes with it.

It is tempting to read these changes as a reflection of regional vs. global tensions—an interpretation that aligns with those who view the rise of AMRO as

the reincarnation of proposals for an 'Asian Monetary Fund' (Kawai 2015). A similar assessment would also fit the mould of conventional explanations of regional cooperation as driven either by perceptions of shared national interests, or a reaction against a US-dominated global economic architecture. The same can be observed if we analyse the rise of AMRO surveillance from the perspective of multi-layered governance.<sup>4</sup> In this case, focus would be on explaining regional surveillance as a product of changes in the post-hegemonic global order. Multi-layered governance has long been a feature of the global financial architecture but calls for increased cooperation have been joined by growing support for increased decentralisation in the years following the global financial crisis (Rodrik 2009; Sohn 2012). Global governance has been plagued by 'gridlock' (Hale, Held, and Young 2013) wherein emerging structural shifts make it more difficult for policy makers to cooperate across borders even as interdependence deepens. Difficulties in reconciling these issues have led to arguments that effective global financial governance need not always be equated with stronger international regulation (Helleiner and Pagliari 2011; Sohn 2012). This appears to be the more pragmatic alternative as we deal with a post-hegemonic world where the agenda for multilateral cooperation is 'confronted with various and multi-layered levels of governance, plural actors, varying expectations, alternative values, different driving forces, and with unprecedented challenges as far as its efficiency and legitimacy are concerned' (Telò 2012, 3). The channels for multilateral cooperation are being redefined in more restrictive terms, based on a form of collective action that encourages increasingly decentralised and networked based forms of multilateral cooperation (Higgott 2012). Against this backdrop, actors and institutions must choose between localising and globalising

---

<sup>4</sup> A consensus on the use of 'multi-level governance' as an analytical framework has yet to be reached as scholars use the term in different contexts. Other terms such as 'multi-tiered governance', 'polycentric governance' and 'spheres of authority' are also being offered as alternative concepts (Bache and Flinders 2004). It is beyond the scope of this study to contribute to this debate. Whilst 'multi-level governance' may be more commonly used, it connotes a sense of hierarchy and vertically-structured levels of authority (Rosenau 2004). For purposes of this study, the term 'multi-layered governance' will be used to emphasise overlapping geographical and functional layers of governance.

goals as they juggle the conflicting forces between decentralisation and fragmentation, on the one hand, and globalisation and integration, on the other (Rosenau 2004).

As the studies cited above emphasise tensions between local/regional and global forces, they appear to support Pauly's aforementioned fears of 'the potential erosion of normative solidarity' (Pauly 2008, 207). However, as mentioned earlier, this thesis questions the validity of such qualms. In light of disagreements on the relevance and effectiveness of IMF surveillance amongst the Fund's member countries, the notion that normative solidarity underpins widespread commitment to the practice of surveillance is arguably limited to the core objective of surveillance and the principle of external accountability. Focusing on regional and global tensions also cannot account for the simultaneous occurrence of the expansion of AMRO surveillance, the unexpected turn towards greater transparency, and AMRO's repeated assertions that regional surveillance should complement global platforms. Yet given the aforementioned particularities underlying the ASEAN approach towards regional cooperation, the motivations for the region's adherence to external accountability should be investigated further. The integration of systemic risk and spillover analysis in both AMRO and IMF surveillance—particularly the prominence of mathematical models in AMRO's and the IMF's surveillance outputs—also raises further questions that existing IPE literature has yet to address.

### *1.1.2 Systemic risk*

Systemic risk and spillover analysis rose to the top of the post-crisis regulatory agenda and have consequently been incorporated into regional and global surveillance. Chapters 5 and 7 delve into these matters in greater detail; Chapter 6 focuses on macroprudential policy as a tool for mitigating systemic risk and analysing spillovers. Systemic risk and macroprudential policies are concerned with the build-up and transmission of vulnerabilities and shocks between sectors and across borders. In the years following the 2007 crisis,



substantial progress has been made in systemic risk research; however, the complexities, uncertainties, and ambiguities intrinsic to systemic risk have made it difficult to trace the origins and channels for spillovers and feedback loops. As the principle of external accountability drives the conduct of regional and global surveillance, systemic risk analysis in this context can be viewed as an implicit assessment of the sources and recipients of financial and macroeconomic risk. Surveillance thus becomes an exercise in policy justification as countries are compelled to justify the spillovers of their respective policies. When systemic risk analysis is represented as a mathematical model, the complexities, uncertainties, and ambiguities are necessarily minimised due to the constraints of mathematical formalism (as discussed in Chapter 4). Model-based surveillance thus becomes both precise (to the extent that specific features of systemic risk can be reduced to model variables) and inaccurate (in terms of providing a realistic representation of systemic risk). As regional and global surveillance offer multiple platforms for systemic risk analysis, they also offer multiple evaluations which can be used to justify (or deny) the external impact of countries' internal policies.

The existence of multiple overlapping surveillance assessments are potentially politically contentious in two ways. Aside from the possibility of having conflicting analyses of the sources of and risks to global stability, spatial representations and the demarcation of regional (internal)/global (external) space also contribute in light of what Shahar Hameiri calls the politics of risk management. This refers to 'a unique form of territorial politics concerned with struggles over the scope of risk and the reach of political discussions' (Hameiri 2011, 383). As with this thesis, Hameiri sees transboundary risk governance as a conflict involving representations of risk and the geographical boundaries and governance arrangements that emanate from such representations. Outside the field of IPE, the works of sociologist Ulrich Beck (1997, 2009) also relate to this debate, as he is concerned with how 'de-bounded risks' are fundamentally changing modern societies and forms of governance. Whilst his arguments about

the cosmopolitan turn of the ‘world risk society’ are debatable, Beck’s points on ‘relations of definition’ and how it involves conflicts over the economic and political consequences rooted in the technical construction of risk definition are helpful. His framework for relations of definition raises two questions that are particularly relevant to surveillance and systemic risk. He asks:

‘What kind of knowledge or lack of knowledge of the causes, dimensions, actors, and so on is involved? Who lays down the causal norms... which decide when a cause-effect relation is to be recognised?... What counts as “proof” in a world where knowledge and lack of knowledge of risks are inextricably fused and all knowledge is contested and probabilistic?’ (Beck 2009, 32).

Beck’s concerns about the role of knowledge (or lack thereof) is pertinent in light of all the methodological roadblocks faced by systemic risk modelling. Studies on macroprudential policy are quite vocal on this point (A. Baker 2015; Borio 2010; Borio and Drehmann 2009); however, these problems are portrayed as temporary given the nascent stage of research on systemic risk and macroprudential policy (Viñals 2013). Moreover, such issues are acknowledged but downplayed in regional and global surveillance assessments as their authority is primarily based on their technical and ‘apolitical’ expertise.

Herein lies the main interest of this thesis: If the discussion excludes methodological issues, then the case of surveillance and systemic risk appears to yield yet another reason to interpret the rise of regional surveillance in East Asia as a challenge to the normative solidarity that drives global economic governance. However, the preference of regional and global surveillance practitioners for model-based analysis makes such an observation problematic. Mathematical models are valued because of perceptions of its technical coherence and apolitical authority, and thus AMRO’s model-based surveillance analysis allows policy makers in East Asia to define and represent the sources of and risks to economic growth in their own terms, but in accordance with the parameters set for technical credibility that have been set and accepted as the

international standard. Hence, adherence to mathematical formalism lets countries in East Asia uphold their commitment to the principle of external accountability, but having their own regional platform for surveillance allows them to do so without compromising the ASEAN way.

As useful as existing IPE literature has been, its tools and analytical frameworks provide inadequate guidance in exploring this particular terrain. This thesis aims to address this by proposing a framework for the study of the politics of economic methodology.

## **1.2 The view from below: the politics of economic methodology**

Issues relating to economic methodology intersect with a wide range of topics already covered in IPE, including the politics of economic expertise (Ban 2016; Seabrooke and Wigan 2016) and metrics (Broome and Quirk 2015; Mügge 2016). The political implications of the use of macroeconomic models have also been tackled (Best and Widmaier 2006; Watson 2014), including analyses of specific institutional contexts such as the European Central Bank (Braun 2014) and the IMF (Clift 2018). Studies on the performativity of financial practices and models are also relevant, exemplified by the works of Donald MacKenzie (2008) and Marieke de Goede (2005). However, these scholars do not consider economic methodology in itself as a practice that determines how we produce knowledge and how such choices influence the particular features of the entities and factors we study (Jackson 2016). As argued above, the process of knowledge production and what gets included or excluded ‘in a world where knowledge and lack of knowledge of risks are inextricably fused and all knowledge is contested and probabilistic’ (Beck 2009, 32) are central to the politics of risk governance and representation.

Following this, the analytical framework developed in this thesis focuses on the logics of reasoning and representation imposed by mainstream economics’ general tendency towards mathematical formalism. In contrast to

other related studies, this framework allows for an examination of claims of expertise and neutrality in models that is rooted in the methodological choices that shape knowledge production in economic policy. As such, the framework departs from existing literature by shifting the emphasis from the implementation of metric- or model-based economic policy to the process behind its design. Moreover, modelling design is investigated as a process that is driven not just by disciplinary and institutional constraints but by more fundamental methodological processes, as dictated by adherence to mathematical formalism. The latter approach facilitates an understanding of knowledge production that can also account for knowledge limitations, a pertinent concern especially given this thesis' interest in systemic risk and macroprudential policy analysis.

Drawing from literature on the philosophy of science (Mäki 2001a; Morgan 2012; Reiss 2013), this approach starts from the premise that mathematical modelling involves setting ontological and technical constraints which determine the representation of 'the economy'. However, limiting the discussion to perspectives from the philosophy of science reinforces the perception of economics and its tendency towards mathematical formalism as a problematic yet necessary compromise; mathematical formalism is thus portrayed as essential due to the demands of a consistent, universal economic logic. Insights from economic sociology and political theory are used to contest this narrative as they challenge the notion of the homogenous, impartial expert whose methodological choices should be viewed as simply a matter of scientific process.

In the context of surveillance, the main concern is the representation of 'the economy' in mathematical models. As Timothy Mitchell (1998) argues, the state is deeply implicated in the measurement and technical construction of 'the economy' as it is a representation of a bounded object under government control; thus, the ontological and technical constraints in mathematical modelling effectively also set the boundaries in terms of state jurisdiction and accountability. Whilst Mitchell is referring to individual nation-states in this

instance, his broader point on the technical representation of ‘the economy’ as a constructed space for legitimisation and control holds particularly true in the case of ASEAN, where the enforcement of economic sovereignty remains high on the agenda (Chapter 2). The justification for and implications of this analytical jump from the state to the region will be addressed in Chapter 4.

This thesis’ conceptualisation of the politics of economic methodology builds on this core premise from Mitchell, and elaborates on the repercussions for reinforcing and challenging particular forms of economic expertise and authority (Chapter 4). The framework makes a case for understanding economic and political logics as mutually reinforcing; moreover, the logics at play in the process of mathematical modelling construct and maintain the illusion of distance between the technical and the political (Prince 2017). This interplay is captured in William Davies’ (2017) critique of economic rationality and neoliberal authority. As done in this thesis, he highlights the interdependencies between state authority and economic expertise and how they perpetuate coherence in the neoliberal state. Davies states:

‘In order for objective representations to be generated, certain presuppositions and practical procedures must be adhered to that have a normatively binding force. The stronger the claim to value neutrality, the more rigidly these presuppositions and procedures must bind’ (Davies 2017, 9).

Moreover, it is precisely during moments of heightened uncertainty such as economic crises that this constructed coherence becomes more vital to the resolution of crises, as techniques of economic rationalisation provide ‘a single cognitive apparatus... a shared reality which various political, business, and expert actors can all agree on and inhabit’ (Davies 2017, 19). This point has important consequences for understanding how mathematical modelling operates as the shared language of regional and global surveillance, and how it fosters a false sense of confidence that we can monitor and control systemic risk despite its inherent complexities, uncertainties, and ambiguities. Mathematical

formalism thus becomes ‘a flexible methodological glue’ (Morgan 2012, 399) that binds separate surveillance practices together whilst also creating space for the emergence of a surfeit of ‘new and artificial “realit[ies]”’ (Caballero 2010, 89). These models representing new and artificial realities are not just a product of ontological and technical constraints; they are also political statements on the boundaries of state jurisdiction and accountability.

Hence, whilst this thesis’ interest in economic methodology shares similarities with Davies’ study, the focus on regional and global surveillance requires a deeper investigation of issues of accountability than done in his investigation of competition policy, as the politics of risk governance and representation comes to the fore. In this regard, Beck’s notion of organised irresponsibility is relevant: the proliferation of overlapping surveillance frameworks fosters organised irresponsibility in that even as actors or institutions acknowledge the emergence of potential and actual risks and recognise the need to contain them, they create and become entrapped in a complicated framework for providing evidence and assigning accountability. This can be used as a justification to understate the existence of certain risks, deny their causes, and spurn any ability to control them (Beck 1997, 2009).

Studying surveillance and systemic risk as a manifestation of the politics of economic methodology is essential if we are to uncover these issues that have been traditionally overlooked by IPE literature. The analytical framework presented in Chapter 4 elaborates on particular methodological and political logics underpinning mathematical modelling, as done in regional and global surveillance. It will be used to illustrate how mathematical formalism creates a semblance of coherence in global economic governance that supports the expansion of both regional and global surveillance. The politics of economic methodology also sheds light on the appeal of surveillance as a technocratic regulatory project and a useful political resource. Revisiting the supposed contradictions in post-crisis global economic governance that were raised in the introduction of this chapter, the politics of economic methodology can

simultaneously account for the growing demands for and limitations of technical rationalisation in global economic governance. It can also accommodate the complementary and competitive dynamics between AMRO and IMF surveillance.

These concerns and analytical parameters motivate the research questions and contributions of this thesis, which will be covered in the next section.

### **1.3 The view from a different angle: research questions and thesis contributions**

Following the discussion above, this thesis seeks to address the following research question:

*How can the persistence and expansion of technical interventions in post-crisis global economic governance be used as a political resource?*

This will be explored through the following supporting questions:

- (i) In what ways are mathematical surveillance models political representations of economic growth?
- (ii) To the extent that post-crisis surveillance reform focuses on systemic risk and macroprudential policy, how has this changed efforts to exert technical control over regional and global economic growth and stability?
- (iii) How does the recent proliferation of regional and global surveillance models define and displace accountability in global economic governance?

In light of the considerations raised in the previous sections, it is worth reiterating how certain concepts are applied in this thesis within specific parameters. Firstly, whilst it is acknowledged that the surveillance toolkit is not limited to mathematical models, the use of ‘cutting-edge techniques’ (IEO 2017, 29) in surveillance is given utmost importance. This drives this thesis’ focus on

the methodological and political rationale for the expansion of technical interventions in global economic governance. Hence, mathematical models used to support surveillance analysis—specifically those related to systemic risk and macroprudential policy—are the main objects of analysis in this thesis. Secondly, the various dimensions of accountability in global economic governance<sup>5</sup> are also recognised, but the main basis for the assessment of accountability is the principle of external accountability. This thesis limits its analysis to how regional and global surveillance practices uphold this principle, specifically in the ways they use their respective surveillance models for policy justification and to substantiate assessments of the sources and transmission of risk.

The main contribution of this thesis is the development of an analytical framework for the politics of economic methodology, as introduced in the previous section and expanded in Chapter 4. To date, there has yet to be an IPE-based investigation that traces the logics behind the reasoning and representation of particular methodological practices in economics in the manner outlined in the previous section. In this regard, the approach developed here aims to serve as a catalyst for dialogue that encourages greater reflexivity amongst social scientists about their methodological choices. Greater methodological reflexivity is all the more urgent as scholars announce ‘the death of expertise’ (Nichols 2017) and politicians proclaim that ‘people in this country have had enough of experts’ (attributed to Michael Gove, cited in Mance 2016). This thesis is not meant to be an unequivocal critique against a particular type of expertise; rather, it hopes to shed light on the important ways methodological choices—which are rarely acknowledged, let alone openly discussed—can simultaneously strengthen perceptions of expert authority and provide a rationale for its limitations. In this regard, there are opportunities for the application of the analytical framework in other areas concerned with the politics of knowledge production.

---

<sup>5</sup> For instance, see the articles in the 2004 special issue of *Governance and Opposition*.



This thesis also contributes to empirical discussions on two themes: surveillance in the context of systemic risk and macroprudential policy and East Asian regionalism in the context of post-crisis global economic governance. On the first topic, the wider implications of the IMF's 2012 Integrated Surveillance Decision have not been given due attention in IPE literature. Granted, the implementation of the resulting reforms is still ongoing; moreover, there has only been one comprehensive assessment—the 2014 Triennial Surveillance Review—available to researchers as the next review has been postponed to 2019 with an interim review planned for this year (IMF 2018c). To the extent that the Integrated Surveillance Decision has been tackled in academic literature, scholars tend to give it a passing mention as a new development in the global architecture for financial regulation (Knight 2014; Lupo-Pasini 2017). Bessma Momani and Kevin A. English (2014) devote more attention to the Integrated Surveillance Decision and converge with this thesis to a limited extent as the authors highlight the repercussions in terms of collective action. As with this thesis, Momani and English view the Integrated Surveillance Decision as a reinterpretation of existing responsibilities; however, they do not provide an assessment as to its implications for systemic risk and macroprudential policy, nor comment on the prospects in terms of the rise of regional surveillance. Biagio Bossone and Roberta Marra (2013) also allude to similar themes as they argue that the Integrated Surveillance Decision provides the impetus for a 'Good Global Citizen' remit for the international community. However, the authors also do not draw any links with the Integrated Surveillance Decision's impact on the politics of systemic risk and macroprudential policy analysis. Moreover, the discussion on the significance of methodological complexities, uncertainties, and ambiguities also offers another case that can complement broader post-crisis IPE and economic sociology literature on the uncertainties pervading global governance (Best 2014) and how such uncertainties can be used for strategic purposes (Davies and McGoey 2012).

As for the second topic on East Asian regionalism in the context of post-crisis global economic governance, the literature is much more extensive. Relative to surveys of regionalism after the Asian financial crisis, various assessments are more circumspect about the overall impact in terms of regional cohesion. Observations thus far note varying degrees of regional assertion or a shift from regional to national and global measures (Chin 2010; Emmers and Ravenhill 2011; Katada 2011). William Grimes argued even before the global financial crisis that the progress in East Asian financial regionalism should be seen as an act of ‘regional nesting’ as these initiatives ultimately reinforce the established global financial architecture (Grimes 2006). His assessment of the prospects of regional liquidity arrangements are similarly sceptical (Grimes 2011). This thesis is the first study to offer an extensive analysis of AMRO surveillance, which can add nuance to the existing debates in areas of trade and financial regionalism. Whilst this thesis shares the interest of existing literature in avoiding an assessment based on regional vs. global polarities, the debates have yet to consider how knowledge production and methodological practices come into play in institutional practices. Although there has been work on development paradigms (e.g., Beijing Consensus, which will be covered in Chapter 2), it has not been possible to situate these discussions within official rhetoric as such discourse is not formally embedded in institutional knowledge production and methodological practices.

#### **1.4 Methodology and data**

As an investigation of methodological practices, it would be remiss of this thesis to not disclose its position within the ‘philosophical wagers’ (Jackson 2016, 54) that motivate methodological choices in the study of political science. Following Patrick Jackson’s work, a wager specifies the researcher, the world to be researched, and the nature of the relationship between them. His framework locates four such wagers—neopositivism, critical realism, analyticism, and reflexivity—depending on the relationship between the knower and the known

and between knowledge and observation. This thesis falls under the category of reflexivity, as it views 'the economy' (as represented in surveillance analyses) as 'endogenous to social practices of knowledge-production, including (but not limited to) scholarly practices' (Jackson 2016, 39). In contrast to the other types, the approach adopted in this thesis aligns more closely with reflexivity given its interest in revealing how the process of knowledge production is embedded in the practice of research itself and the social and the political circumstances of the researcher. These circumstances act as 'logics of distinction' (e.g., 'East' vs. 'West' or regional vs. global in the case at hand); reflexivity holds that scientific knowledge reflects such logics of distinction and in turn 'either reinforces or challenges these distinctions' (Jackson 2016, 174). This is an important theme that is central to this thesis, one that is not shared with other categories in Jackson's typology. It should be noted that the choice to align with reflexivity is not based on an evaluation of its relative strengths; rather, the choice is driven by the particular concerns of this thesis in knowledge production. Moreover, establishing this thesis as a reflexivist study helps situate the methodological choices made in the analysis and clarifies the implications of taking such an approach when evaluating the generalisability of the research findings.

On methodological choices, reflexivity's focus on examining knowledge as a product of the social and political circumstances of the researcher requires the thesis to shift its focus from the level of individual researchers working at the IMF and AMRO, to the historical and political circumstances of the two institutions and, in the case of AMRO, the region it represents. Reflexivity also posits that knowledge is transfactual in that valid knowledge-claims can be made by looking beyond established facts and experiences and examining the factors and processes that gave rise to such facts and experiences. Hence, in addition to considering the historical and political context surrounding IMF and AMRO operations, this thesis also accounts for the methodological presuppositions that IMF and AMRO staff members are assumed to carry as mainstream economists. As this thesis focuses on the methodological complexities, uncertainties, and

ambiguities plaguing systemic risk and macroprudential policy analysis, it also takes into account methodological ‘silences’ or non-disclosure of limitations of model-based surveillance analysis in light of methodological choices made.

As for the implications of generating research findings from a reflexivist standpoint, the aforementioned views on the process of knowledge production create significant limits as far as causal or explanatory conjectures go. As a reflexivist study, this thesis does not aim to produce falsifiable hypotheses or representational claims based on ideal-types or case studies. Instead, it offers an interpretation of regional and global surveillance as both an object and determinant of methodological and political processes. As argued by Jackson, ‘[f]or reflexivists, it is never appropriate to understand an empirical claim as simply a representation or depiction of a situation or a state of affairs; rather, every empirical claim is dialectically involved in a struggle with its object, and is as such necessarily perspectival’ (Jackson 2016, 191). Hence, this thesis offers an in-depth investigation of how these dynamics operate (specifically through the mechanisms outlined in Chapter 4) in the unique context of IMF and AMRO surveillance and the interplay between the two practices. Nonetheless, studying the case of East Asia yields interesting insights for other regions, as will be discussed in greater detail later in this section.

Another limitation of this thesis’ methodology involves a possible duality resulting from the involvement of two ‘researchers’ in the study: the thesis author, on the one hand, and IMF and AMRO economists, on the other. In relation to the two points made earlier on the researcher’s worldview (or the relationship between the knower and the known), the first point on ‘the economy’ refers to the author’s own views. The second point on the social and political circumstances of the researcher refers to IMF and AMRO economists. Due to time and resource constraints, it was not possible to conduct interviews with IMF and AMRO economists to ascertain their own worldviews and how this translates to their methodological choices, although Ben Clift’s recent study on the IMF suggests a degree of ‘cognitive dissonance’ (Clift 2018, 8) amongst the Fund’s

staff members. Establishing the importance of such cognitive dissonance in shaping methodological choices in IMF and AMRO research is a crucial point, although one that is beyond the scope of this thesis.

Case selection for this thesis is based on understanding AMRO surveillance as an *influential case*, one that can illustrate ‘why apparent deviations from the norm are not *really* deviant... once the circumstances of the special case or cases are fully understood’ (Gerring 2007, 108, emphasis in original). AMRO is only one of many regional arrangements that are part of an expanding global financial stability network. AMRO is the official surveillance unit of East Asia’s Chiang Mai Initiative Multilateralisation (CMIM). CMIM is a US\$240 billion regional reserve-pooling arrangement that can be used by ASEAN+3 members in need of liquidity support (ASEAN+3 2012). Similar initiatives can be found across different regions, such as the Arab Monetary Fund, BRICS Contingent Reserve Arrangement, Eurasian Fund for Stabilisation and Development, European Stability Mechanism, and the Latin American Reserve Fund (Fondo Latinoamericano de Reservas or FLAR). Such regional liquidity arrangements are seen as an important line of defence and mechanism for self-insurance in times of global financial instability. For instance, FLAR was established in 1978 (originally as the Fondo Andino de Reservas or Andean Reserve Fund) in response to the region’s rising vulnerability to external financing and the absence of adequate and timely funding mechanisms that do not carry the damaging stigma attached to loan conditionalities (Ocampo and Titelman 2012).

Chapter 2 will shed light on the parallels between the rationale for the creation of FLAR and CMIM. In another point of similarity with CMIM, FLAR expanded in the years after the global financial crisis, both in terms of membership (with the addition of Uruguay in 2008 and Paraguay in 2015) and subscribed capital (Ocampo and Titelman 2012, Cheng et al 2018). It has also strengthened its surveillance capabilities in recent years with the work of FLAR’s Division of Economic Studies (Gabel 2018). Whilst the resemblance in pre- and post-global financial crisis developments should not be dismissed, there are

important divergences given this thesis' interest in tracing institutional processes of knowledge production. FLAR may have a longer history and an established reputation as a reliable creditor in the region (as opposed to CMIM, which has yet to be used by any of the ASEAN+3 member states), yet it takes a highly minimalist approach to surveillance. In contrast to AMRO, FLAR does not have an official framework for monitoring and consultation (Cheng et al 2018). Moreover, the Division of Economic Studies does not operate as a formal surveillance unit (Titelman et al 2014) and its monitoring is largely peer-based and country-specific (Grabel 2018). With respect to areas of shared concern such as regional stability and risks, FLAR takes part in informal consultations with the IMF (Cheng et al 2018). Chapter 6 will demonstrate how East Asian surveillance evolved from a previously similar approach to the current expansion of AMRO's surveillance operations.

As this thesis draws from John Gerring's definition of what constitutes an influential case, the criterion for analysing case deviations in regional arrangements in this context must be first established. If we are mainly concerned with regional arrangements as a line of defence and mechanism for self-insurance, then the parallels between East Asia's and Latin America's respective experiences should be taken into consideration. Although her focus was not on FLAR but on the Union of South American Nations and the Bolivarian Alliance for the Peoples of Our America (more commonly known as UNASUR and ALBA, respectively), Pia Riggirozzi (2010) notes that more recent regional initiatives in Latin America are not straightforward manifestations of defensive regionalism—an observation that also overlaps with the case of East Asia. However, this thesis is more interested in challenging conventional notions of regional vs. global processes as manifested through knowledge production. FLAR's continued minimalist approach in surveillance may be interpreted as indifference or reluctance to contest the IMF's status as the dominant technical authority in global economic governance. Following this line of thinking, AMRO's expansion may be construed as a more aggressive attempt to challenge IMF

surveillance. Yet analysing the rise of AMRO surveillance as a manifestation of the politics of economic methodology belies this notion.

It bears repeating that as a reflexivist study, it is not advisable to use the findings of this thesis to draw direct comparisons between the case of East Asia and that of other regions. Nonetheless, observers calling for the expansion of FLAR are watching the developments in CMIM and AMRO and looking into the possibility of having an institutionalised surveillance platform in Latin America (Titelman et al 2014). In this regard, the case of AMRO may yield useful insights for the development of future regional surveillance mechanisms.

As for data selection, this thesis focuses on two sets of documents to demonstrate how analyses from spillover models are used in surveillance reports and policy documents, highlighting different implications for external accountability and policy justification. The first set includes the 2017 IMF Regional Economic Outlook for Asia and the Pacific (IMF 2017d) and the 2017 ASEAN+3 Regional Economic Outlook (AMRO 2017b). In this case, the emphasis is on spillovers across geographical categories (i.e., between domestic and global factors, or internal and external risk). The second case underscores sectoral spillovers (e.g., between the state and market, and real and financial sectors). The documents covered in this set are the 2017 IMF Article IV Consultation report for China (IMF 2017c) and the AMRO working paper *High Corporate Debt in China: Macro and Sectoral Risk Assessments* (Poonpatpibul et al. 2017). Whilst the focus is on the experience of China, the implied debates in these documents on the state/market and real/financial sectors divide is indicative of broader discussions on the experience of various East Asian states on the role of the state in steering funds into specific industries identified as critical to economic growth.

As mentioned earlier, AMRO only started releasing its publications in 2017, hence the limited timeframe for the document analysis. However, as this thesis seeks to contextualise these surveillance documents against a broader historical and political backdrop, the case studies are examined on the basis of the transformation of discourse on economic growth in East Asia from the early

1990s (prior to the Asian financial crisis) until 2018 (just over a decade after the global financial crisis first hit). Framing the analysis around these two crises allows this thesis to trace distinct shifts in the relationship between East Asia and the IMF (and the countries dominating the institution). The discourse on economic growth and the mathematical models used to underpin related surveillance analyses are analysed using official IMF and ASEAN documents (including working papers, speeches, and press releases) as well as various related academic and policy literature. As a key supporter of surveillance in East Asia, sources from the Asian Development Bank (ADB) are also examined. ASEAN and ADB reports are used jointly to represent the case of East Asia, given the close links between the two institutions in terms of surveillance and technical analysis, as discussed further in Chapter 7.

In light of this thesis' heavy reliance on documentary analysis, a few qualifications need to be raised. The more important one relates to the role of IMF and AMRO economists in model development and surveillance analysis. As mentioned earlier, the lack of interview data means that this thesis shifts its gaze from the individual researcher to the institution. Hence, the analysis of IMF and AMRO staff members is limited to their role as bureaucratic economists who need to work within disciplinary and institutional constraints (Davies 2011). Contrary to other studies dealing with the politics of expertise, this thesis does not emphasise factors such as professional networks, hiring practices, and educational background. Where public information is available, comments are made on previous affiliations of key staff members (e.g., AMRO chief economist); however, such factors are not treated as important points of analysis in the context of the thesis. Greater emphasis on the dynamics at the institutional level is warranted given this thesis' interest in the evolving relationship between East Asia and the IMF.

Another issue relates to the document as an object of enquiry. In this regard, IMF, AMRO, and ADB publications are examined not just as a data source but as a site for conversation. Hence, these documents are analysed in relation to



their stated surveillance objectives and the underlying commitment to external accountability. IMF, AMRO, and ADB reports are viewed in terms of their assumed readers and the context in which the documents were produced (Atkinson and Coffey 2011, cited in Bryman 2016), including any connections to other documents which are directly or implicitly part of the broader conversation.

Moreover, the documentary analysis carried out in this thesis also pays attention to the structure and organisation of the text (e.g., in terms of the elements included in summary highlights) and any omissions or gaps (Rapley 2007), particularly those related to methodological limitations. For instance, even though IMF staff recognise any uncertainties or limitations related to their surveillance analysis in interviews (Clift 2018) or in technical working papers (as mentioned in Chapter 7), the omission of these details in the main surveillance reports is noteworthy as most readers of such reports will not consult related background papers.

These methodological and data considerations determine the scope and limitations of this thesis as a reflexivist interpretation of regional and global surveillance. With these in mind, the next section will outline the main findings and key points that will unfold in the subsequent chapters.

## **1.5 Main findings and chapter structure**

This thesis develops in two parts. The next three chapters lay out the contextual and conceptual foundations of the study. As a grounded analysis of regional surveillance requires a good understanding of the articulation of an 'East Asian model' of economic growth, Chapter 2 outlines the transformation of the discourse on economic growth in the region from the early 1990s until 2018 and how it relates to paradigms advocated by the West, primarily through western-dominated international financial institutions (IFIs). The discussion underscores the need to investigate East vs. West dichotomies, why these

constructed cleavages persist, and how East Asian countries use them to provide the economic and political rationale for their chosen path towards economic growth. These issues drive different conceptions of how sources of and risks to economic growth are defined and approached, which are reflected in the perception and construction of geographical (e.g., regional and global, internal and external) and sectoral (e.g., state and market, real and financial sectors) categories. This subsequently shapes the representation of ‘the economy’ in surveillance analysis, and in the mathematical models used to support it.

Despite growing recognition of the dangers of overreliance on mathematical models, its influence in economic policy formulation still persists—this remains the case in financial and macroeconomic surveillance. Whilst regional surveillance offers East Asia the chance to present its own assessment of what constitutes ‘strong’ economic growth fundamentals, the region does so in terms considered appropriate by the gatekeepers of global economic governance. Chapter 3 examines the continued dominance of mathematical modelling in economics as a consequence of disciplinary politics, focusing on the developments (or lack thereof) in mathematical modelling in after the global financial crisis. The chapter also sheds light on the implications of the rising awareness of the limitations of mathematical models, as the acceptance of modelling’s deficiencies has served to fuel the expansion of technical rationalisation whilst absolving it of any shortcomings. This puzzle merits further investigation, and the development of alternative explanations for the continued dominance of mathematical modelling.

Chapter 4 develops an analytical framework to address the aforementioned conundrum, as it makes a case for investigating mathematical modelling through the politics of economic methodology. The framework presents an approach for unpacking mathematical modelling and the economic and political logics driving modelling’s particular form of reasoning and representation. It argues that the mutually constitutive link between economic and political logics serves to create and reinforce the illusion of distance between the technical (or economic) and

political. This facilitates the simultaneous definition and displacement of accountability in global economic governance, as will be shown in the subsequent chapters on systemic risk and surveillance. Following this, the mathematical models used in surveillance are both technical representations of and political statements on economic growth and its sources and consequences.

Systemic risk modelling then presents a new challenge, as research on systemic risk emphasises the difficulties of accurately tracing the transmission of risk due to interdependencies and feedback loops. Focusing on systemic risk's inherent uncertainty, complexity, and ambiguity, Chapter 5 illustrates how the creation and expansion of efforts to exercise technocratic control over systemic risk upholds the illusion of distance between the technical and the political. It examines how definitions of systemic risk are both technical and political constructions as it involves identifying links to determine causality and accountability in managing economic stability within and across countries. As the nature of systemic risk blurs straightforward cause-and-effect links, the representation of systemic risk in mathematical models can exacerbate problems with how surveillance seeks to hold countries accountable to the international community for the external effects of their domestic policies.

The last two chapters present a detailed analysis of how the aforementioned issues shape the implementation of surveillance and its post-crisis preoccupation with macroprudential policy as the main tool for regulating systemic risk. Chapter 6 analyses the evolution of multilateral surveillance in the IMF and AMRO through the principle of external accountability. In the case of IMF surveillance, the principle is used to account for the persistence of surveillance despite gaps between its theoretical rationale and actual practice. In the case of AMRO surveillance, commitment to external accountability is viewed in terms of domestic legitimacy and international credibility. However, despite shared adherence to external accountability, the methodological complexities, uncertainties, and ambiguities plaguing macroprudential policy suggest that the validity of model-based surveillance analyses needs to be qualified. Nonetheless,

such concerns did not diminish the proliferation of spillover models in regional and global surveillance.

Chapter 7 examines the specific case of spillover models used by the IMF, ADB, and AMRO, and how geographical and sectoral categories persist alongside acknowledgement of deepening and growing interdependencies. As raised in Chapter 2, discrete geographical and sectoral categories are fundamental to the modelling process. This is reflected in how various discursive strands on the causes of and solutions for economic growth and decline in East Asia are also underpinned by a discussion of whether the causes and solutions lie in the real or financial sector, or should be treated as internal or external. Lessons from the global financial crisis challenged orthodox understandings of these categories, but these cannot be properly translated in mathematical models because of ontological and technical constraints. The inherent limitations of such models have been recognised, but this realisation has only led to the proliferation of various spillover models rather than a more cautious and critical approach to their use. The emergence of different spillover models to support regional and global surveillance creates opportunities for political manoeuvring as each side is able to present different representations of the sources of systemic risk. However, any disagreements which may surface can be reduced to methodological issues. Hence, accountability is essentially displaced by the expansion and profusion of these overlapping surveillance frameworks.

# CHAPTER 2

## ***The Articulation of Economic Growth in East Asia: Reconsidering East vs. West Dichotomies***

---

*'If Asia resumes fast growth within the next two years and if in the meantime the United States goes into recession as the stock market and currency bubbles burst, we may again look to Asian models, as in the 1980s, for lessons on how to improve the parlous performance of American capitalism'*

(Wade and Veneroso 1998, 21)

### **2.1 Introduction**

Financial and macroeconomic surveillance involves the construction of metrics and models that determine the components of 'strong' economic fundamentals and how this translates to growth. As this thesis seeks to explore how surveillance analyses are both technical representations of and political statements on economic growth, this chapter analyses the transformation of discourse on the 'East Asian model' of economic growth as a product of political contestations regarding geographical (East vs. West, internal vs. external) and sectoral (state vs. market, real vs. financial) categories. Investigating the political factors driving the construction and application of such categories is of particular importance in this thesis. As the technical exigencies of surveillance models effectively preclude consideration of the political factors behind purportedly apolitical categories, this chapter challenges the duality of the aforementioned geographical and sectoral labels in light of changes in East Asia's historical and political circumstances over the last few decades. The use of these categories is also analysed in the context of policy justification, as assessments of economic growth and decline in East Asia tend to be framed in terms of dichotomies

between geographical and sectoral categories. Various accounts of the causes of economic growth (or solutions in the case of economic decline) normally privilege one category over another. This is reflected in how the dominant narrative during the Asian financial crisis attributed the collapse to allegedly 'internal' factors such as the state and crony capitalism; the tone changed in the aftermath of the global financial crisis as the downturn was attributed to 'external' factors.

As discussed in the previous chapter, regional and global surveillance are a form of territorial politics as they involve setting the scope for transboundary risk governance (Hameiri 2011). This can be observed in the use of geographical categories in narratives of financial crises. Spatial representations of financial crises are crucial for a deeper understanding of the channels and mechanisms through which individuals and institutions are connected in a financial system (French, Leyshon, and Thrift 2009). However, the use of geographical categories also carries strong political connotations. In the case of the 1997 crisis, references to 'Asia' or 'East Asia' suggested:

'not just a relatively short temporal frame to the events that transpired (and therefore preclude discussion of long-term contradictions in contemporary capitalist development), but also to delimit the spatial extent of the events and their cause. An "Asian" crisis implies not only that the problem lies within Asia and not in the wider global financial system, but also that "Asia" can be generalised and understood as a unitary entity' (P. F. Kelly, Olds, and Yeung 2001, x).

In the case of the 2007 crisis, the inclusion of the word 'global' has long been commonplace but this does not mean that it has gone uncontested. Kishore Mahbubani, designated 'muse of the Asian Century' (AsiaOne 2011), argues that the said downturn 'should adopt its logical name: the Western financial crisis' (Mahbubani 2011). Shaun Breslin (2011a) notes that the crisis revived discussions of a 'clash of capitalisms' pitting the East against the West. Mahbubani describes Asian capitalism as one that emphasises strong

government supervision of financial markets where ‘the “invisible hand” of free markets will be balanced by the “visible hand” of good governance’ (Mahbubani 2009). Such debates are not new and similar themes appear in topics beyond financial crises. In the early 1990s, East Asian leaders such as Lee Kuan Yew (Singapore) and Mahathir bin Mohamed (Malaysia) played up the idea of ‘Asian values’, purportedly based on respect for authority, hard work, frugality, discipline, social harmony, and the primacy of the group over the individual (Langguth 2003; Miller 2004). The Asian values debate was primarily set up to counter the spread of ‘Western liberalism’, construed as excessive individualism and a predilection for open political conflict. These leaders argued that the Asian way facilitated political stability and economic development in the region, although others believe that the rhetoric was not driven by confidence in the region’s success but used to marginalise dissenting views that sought to challenge authoritarian rule (Rodan 1996). Whilst Mahbubani’s claims are not a defence of past authoritarian leadership in East Asia, his arguments are built on observations on the decline of the West and the rise of the East. A respected diplomat in Singapore, Mahbubani presents his views as ‘a gift to the West’ (Mahbubani 2018, cited in Nye 2018) as he highlights the dangers of Western hubris and the lessons Western leaders supposedly can learn from their Asian counterparts. Clearly, the political use of East vs. West discourse has survived the test of time.

Beyond overt political incitements, various takes on so-called ‘Asian capitalism’ and ‘Asian values’ permeate both academic and policy discourse. Certain threads, such as those referred to above, tend to frame the discussion in terms of clearly defined ‘East vs. West’ dichotomies—the same can be observed in the discourse on the ‘East Asian model’ of economic growth. Framing economic growth models in such a way has important implications in the conduct of multilateral surveillance, particularly with respect to the principle of external accountability. This discourse is not simply an explanation of the causes of and solutions for economic growth and decline in East Asia; it is also a discussion on

whether the causes and solutions are internal (i.e., domestic or regional) or external. Whilst full implementation of the principle of external accountability has been difficult in practice, commitment to multilateral surveillance still drives countries to justify their policy choices to one another. Hence, multilateral surveillance operates based on a sense of ‘normative solidarity’ (Pauly 2008, 207), one that can be challenged when subscribing to constructed notions of different Western or East Asian models of growth.

The difficulty of formulating a coherent characterisation of the East Asian region is acknowledged; however, digging deeper into the persistence of East vs. West dichotomies requires that the point of reference—the articulation of the East Asian growth model as opposed to one advocated by the West—be established in the first place. The notion of regional space as used in this thesis is less about highlighting a shared identity, economic or otherwise. Rather, the focus is on the conception and perceived utility of the region as an economic space and community—an area seen as distinct from the wider global space but with fluid and intersecting boundaries and membership (Dent 2010). Building on the aforementioned implications of spatial representations on transboundary risk governance, the application of the term ‘region’ in this sense is also strategic:<sup>6</sup> Using such geographical categories delimits acceptable accounts of economic processes and appropriate policy responses, whilst also validating the legitimacy of the authorities tasked to govern particular spaces.

This chapter demonstrates how geographical divisions—and the sectoral categories that emanate from them—serve similar strategic purposes and relates this to the conduct of regional surveillance in East Asia. Instead of simply disregarding flawed East vs. West dichotomies, the subsequent discussion underscores the need to investigate why these cleavages persist and how East Asian countries use them to provide the economic and political rationale for their

---

<sup>6</sup> Philip F. Kelly (2001) gives an insightful analysis of how metaphorical representations were used by Malaysian and Singaporean policymakers during the Asian financial crisis to defend policy choices and garner support for their respective governments.



chosen path towards economic growth. These issues drive different conceptions of how risks to economic growth are defined and approached. This subsequently shapes the representation of economic growth in the financial and macroeconomic models used in the surveillance process. Regional surveillance in East Asia is thus both a technical and political exercise, a tool that policymakers in the region can use to strengthen economic sovereignty as regional surveillance can be used to legitimate local authority to global audiences.

The rest of the chapter is organised as follows: Section 2.2 outlines the evolution of the general discourse on economic growth in East Asia from the early 1990s until 2018 and how it relates to models advocated by the West, primarily through the IFIs it dominates. Moving beyond East vs. West frames, Section 2.3 examines how other geographical and sectoral categories have been reflected in technical discourse on economic growth in East Asia over the same time frame. Section 2.4 contextualises the discussion in the previous two sections as a reflection of how East Asian countries attempt to exercise economic sovereignty, and how this is subsequently reconciled given the region's growing role in the global economy. As mentioned in the previous chapter, regional institutions such as ASEAN provide a venue for member countries to consolidate national authority through regional means; at the same time, ASEAN seeks to bolster regional authority by asserting its status as an important member of the global community. The fluid boundaries of what constitutes regional space in East Asia exacerbate tensions underlying East vs. West dichotomies, which also have important repercussions for external accountability. Commitment to the principle of external accountability requires countries to justify the external consequences of their respective internal policies, as stressed in Chapter 1. The continued use of rigid spatial boundaries amidst growing and deepening interdependencies is thus conceptually problematic yet strategically useful when used in surveillance analyses. As it presents its own assessment of East Asia's economic performance, regional surveillance allows East Asian countries to

adhere to external accountability without compromising economic sovereignty; likewise, regional surveillance can be used to enhance international credibility whilst strengthening domestic legitimacy.

## **2.2 Tracing the discourse on economic growth in East Asia**

In analysing how East Asia's place in the global economy has evolved through the years, historical accounts of economic growth in the region tend to highlight processes of colonialism and development through modernisation and incorporation into Western markets (Arrighi, Hamashita, and Selden 2003; Berger 2009 cited in Elias and Rethel 2016). For example, Sugihara (2003) contrasts the region's 'industrious revolution' (characterised by the rise of labour-intensive technologies) with the West's capital- and resource-intensive industrial revolution, with the former depicted largely as a result of East Asian economies' response towards circumstances shaped by developments in the West. Whilst these factors affected East Asia's growth in fundamental ways, this section focuses instead on the transformation of the discourse on economic growth in East Asia as a product of shifts in state strategy<sup>7</sup> in a changing global (i.e., not merely Western) economy—one which they are (in varying degrees) actively part of and not merely passive players. In this discussion, economic growth discourse is analysed as a reflection of strategies enacted by a state viewed as 'a territorially and functionally dispersed system', one whose 'structural selectivity... [is] contingent upon the actions and strategic endeavours of a whole plethora of agents peculiar to specific places and times' (MacLeod and Goodwin 1999, 516). Investigating economic growth discourse in these terms is necessary given this thesis' interest in surveillance as a platform for policy justification. This section provides an overview of the shifts in the discourse on

---

<sup>7</sup> This draws from an understanding of state strategy as a 'pattern of intervention in the economy and society which "(a) favours the course of [a particular] accumulation strategy and the flow of material benefits to the requisite social base; and (b) constructs forms of representation that systematically favours the access of the key sectors and social groups to sites of political and economic power"' (Jessop et. al. 1988, cited in MacLeod and Goodwin 1999, 516).

economic growth in East Asia from the early 1990s until 2018. This period bookends two events—the Asian and global financial crises—which represent crucial turning points in contemporary East Asia’s economic trajectory.

### *2.2.1 East Asian Miracle*

In the years following the escalation of the Cold War, strong economic growth in various countries in East Asia was mainly attributed to the crucial role of the developmental state.<sup>8</sup> Chalmers Johnson’s (1982) canonical book *MITI and the Japanese Miracle: The Growth of Industrial Policy* spawned various studies on the remarkable success of Japan, South Korea, and Taiwan (for instance, see the volume edited by Woo-Cumings 1999). The developmental state refers to countries pursuing aggressive industrial promotion through investment facilitation and resource mobilisation and reallocation. Selected industries are supported through extensive planning, intervention, and regulation, ‘creating rents by distorting markets’ (Wade 2004, xviii) to facilitate investment in sectors deemed crucial to the state’s long-term economic growth and maintain political support for such policies. Developmental states are also characterised by high household savings, high corporate debt-equity ratios, and close bank-firm-state collaboration (Wade and Veneroso 1998). Specific policies include technology transfers, export promotion, moderation of foreign competition in selected sectors, and control of domestic credit to ensure that finance can be directed to support industry objectives. Plan rationality and the central role of a relatively autonomous economic technocracy are crucial to policy making (Deans 1996). Smooth implementation also requires a tightly run state bureaucracy and consolidated state power to limit the space for opposing coalitions. Corporatist political structures foster institutional stability and minimise conflicts between key interest groups, thus making it easier to maintain high levels of investment in the chosen industrial sectors.

---

<sup>8</sup> The works of Meredith Woo-Cumings (2005) and John W. Dower (1990) stress the significance of national security and wartime mobilisation in Northeast Asia’s industrial development.

Whilst these broad characterisations were manifested in varying ways and degrees across East Asia (particularly Japan, South Korea, Taiwan, Hong Kong, and perhaps Singapore), the success of the developmental state in achieving relatively quick and equitable economic growth prompted talk of the 'East Asian miracle'. Unpacking what actually constitutes the East Asian miracle is problematic given the differences in how it is portrayed. As opposed to the role attributed to the developmental state earlier, the World Bank's 1991 World Development Report explains the economic success of East Asia as a result of 'market-friendly' industrial policies (Singh 1995). Another World Bank publication, *The East Asian Miracle: Economic Growth and Public Policy*, concludes that there are factors other than the specific industrial policies described above which ultimately led to accelerated growth in the region (World Bank 1993). The economic explanations behind these assertions will be tackled in greater detail in the following section.

Before doing so, it is helpful to highlight how the aforementioned relevant discussions on East Asian economic growth in the 1990s generally highlight how governments got the macroeconomic fundamentals (however these may be defined) right. However, critics argue that the Asian financial crisis effectively delegitimised the idea of an 'East Asian miracle' and a successful Asian growth model. Rodney Bruce Hall (2003) examines the rhetoric employed by the US Treasury in their assessment of the causes of the crisis and the appropriate solutions. Similar to the arguments presented in the World Bank reports mentioned earlier, Larry Summers (then Deputy Treasury Secretary) depicted East Asia's rapid economic growth prior to the crisis as a product not of 'practices uniquely Asian' but of 'strong universal fundamentals' (R. B. Hall 2003, 78). Summers built his attack on the developmental state by highlighting the 'crony capitalism' supposedly inherent in the system and how it 'favoured centralised coordination of activity over decentralised market incentives...governments targeted particular industries, promoted selected exports, and protected domestic industry and [relied] on debt rather equity, relationship-driven finance

not capital markets, and informal rather than formal enforcement mechanisms' (Summers 1998, cited in R. B. Hall 2003, 76). This is despite the IMF's own acknowledgement that the economies of Indonesia, Malaysia, and Thailand were in relatively good shape prior to the crisis. Although it was previously noted that East Asia's success was due to its increasingly free market system, there was a quick turnaround as these same analysts changed their positions and argued that it was homegrown causes (in the form of excessive government intervention in markets) which led to the crisis. A country's economic success is portrayed to be a result of its growing integration into the global economy; on the other hand, its downturn is attributed to homegrown causes. Framing the blame in such a manner clears IFIs from any liability and legitimises the reform arrangements they advocate (Wade 2004).

### *2.2.2 Washington and Post-Washington Consensus*

The IMF was subsequently heavily criticised for pushing reforms aligned with the established Washington Consensus as these only worsened the effects of the crisis, particularly in Indonesia. Despite the fallout, the criticism did not lead to a revision in the IMF position—instead, what emerged was a 'post-Washington Consensus' which continued to support the infallibility of free market policies, with the addition of governance and institutional development in the agenda. The subsequent shift in the East Asian discourse on economic growth and stability were largely influenced by the region's disappointment with how the IMF responded to the crisis. As a result, the growth agenda placed greater weight on regional solutions and mechanisms for self-insurance. Among these efforts to strengthen East Asian financial regionalism are the failed Asian Monetary Fund, the Asian Bond Market Initiative<sup>9</sup>, and CMIM.

---

<sup>9</sup> In an effort to address the double-mismatch problems encountered during the Asian financial crisis, the ASEAN+3 finance ministers launched the Asian Bond Market Initiative in August 2003. The primary objectives were to expand the bond issuer base, diversify currency issuance, and improve the market infrastructure in the region.

As East Asia escaped the worst of the global financial crisis, certain regional figures used the occasion to vindicate the 'East Asian model'. For example, Mahbubani argued that the crisis showed that the West should learn from Asia's approach to capitalism (Mahbubani 2009). As the eurozone crisis escalated in 2011, he pushed his accusations further, going so far as to claim that 'Asia's concern is that the world will soon come to grief if both the United States and Europe fail to make fundamental adjustments...their nations must now experience the pain of readjustment they once prescribed to others' (Mahbubani 2011). Referring to the need to reform global financial governance, Mahbubani goes on to say that 'we need an end to the pretence that the United States and the European Union are the masters of the universe...both must learn to share power'. Whilst it can be argued that Mahbubani is also guilty of overlooking East Asia's role in the global financial crisis as it fuelled the global imbalances that fostered the US subprime crisis, his views demonstrate the long-standing feelings of resentment towards the IMF's role in the Asian financial crisis even after over a decade had passed.

The global financial crisis also reignited the debate on the Washington Consensus as it facilitated a shift in economic power to rising economies, particularly China. As the crisis originated from the West, discussions raised the question of whether a post-neoliberal paradigm facilitated the relative strength and stability of economic development in these emerging economies. Studies find that the extent of divergence should not be exaggerated as their state-led growth models adopted selected components of the Washington Consensus template (Ban and Blyth 2013). There are also those who argue that observations pointing to the retreat of neoliberalism or the return of the developmental state in East Asian economies were overstated (Stubbs 2012; Pirie 2016). Reference to a 'Beijing Consensus' gained currency after the crisis as its supporters used the term to discredit the Washington Consensus and point to China's economic success as evidence that it offers other countries a better alternative to the development policies advocated by the West and IFIs.

Hence, whilst China's story takes centre stage in such discussions, the relevance of the Beijing Consensus applies to other countries in East Asia seeking to pursue locally-determined growth strategies that are not derived from Western templates. This is a significant development for the region, as challenging the Washington Consensus is construed as defiance of externally-imposed growth doctrines and protection of the economic sovereignty cherished by East Asian countries, as discussed further in Section 2.4.

### *2.2.3 Beijing Consensus and the China model*

The term 'Beijing Consensus' was first coined in 2004 by Joshua Cooper Ramo, an American who was affiliated with Tsinghua University at that time. Ramo's conceptualisation has been widely challenged on several grounds, including its inaccurate empirical basis and analytical incoherence (Kennedy 2010). Moreover, some comparisons find that the reforms in China have actually largely conformed to the core principles of the Washington Consensus, and there is no agreement anyway on what actually constitutes the Beijing Consensus (Ferchen 2013). These disagreements are also seen in how Chinese intellectuals and policymakers perceive the Beijing Consensus. As far as the Beijing Consensus is used to criticise the Washington Consensus, there is some evidence of support from local analysts (Kennedy 2010). To the extent that it helped build China's soft power on the global stage, party officials have also embraced the use of the term in debates. The notion of a 'China model' is similarly vague but it is more widely accepted by the Chinese government. However, officials have denied that it is being used to challenge the current global order. Rather, their view is that 'the China model means there is no one model for a country' (Jiang 2010, 339).

Despite the inconsistencies in the use of the terms, be it 'Beijing Consensus' or 'China model', the significance of the debate is still highly relevant. The main point underlying these discussions is not really the degree of convergence or divergence of Chinese policies compared to the tenets of the Washington Consensus but the context in which these comparisons are being made. During the 1990s and early 2000s, critics of the Washington Consensus associated it

with the imposition of US political and economic hegemony and portrayed the agenda as an 'ideological Trojan Horse for US global hegemony' (Ferchen 2013, 403). The merits of the Beijing Consensus as an alternative model did not necessarily hinge on whether it was an accurate description of the political and economic realities in China; rather, it was its 'open-ended oppositional nature' that gave the term its appeal (Ferchen 2013, 398) as a point of comparison to Western economic doctrines. The growing interest in the Beijing Consensus coincided with the decreasing inclination of Chinese officials to listen to the West preach about 'best practices' in a range of policy issues from intellectual property rights to financial regulation.

To the extent that the Beijing Consensus or the China model have a defining feature, it can be traced to its pragmatism in that China's development story is not based on a specific plan or ideological position. It is argued that the Chinese experience should be viewed as an example of the merits of following a self-determined path rather than an externally defined and imposed model. As pointed out by Breslin:

'Rather than thinking about what China is not and what China stands for, instead we need to think about what China is not and what China does not stand for...it is *not* the Western way of doing things; it is not following a model or prescription; it is not being told what to do by others; and it is not telling others what to do' (Breslin 2011b, 1338, italics in original).

Hence, the emergence of the Beijing Consensus and the China model in policy debates gives East Asian countries greater latitude to contest external policy prescriptions, thus supporting economic sovereignty. Whilst there may be no agreement as to whether an actual Beijing Consensus exists and whether it can or should be something other developing countries in the region should aspire to, its significance lies in its symbolic power as an alternative to the Western approach.



#### 2.2.4 'Asian Century' and the ASEAN Economic Community

The growing interest in the Beijing Consensus and the possibility of adopting a growth model different from those advocated by the West reflect only one side of the evolving discourse in East Asia after the global financial crisis. The other side adopts a more regional emphasis and concerns the realisation of the 'Asian Century' and the establishment of the ASEAN Economic Community (AEC).

Similar to the terms discussed above, the notion of the 'Asian Century' is another nebulous concept that is contentious yet appealing to many in the region for a variety of reasons. In a number of studies, the West (and 'the rest') remains the point of comparison. One study evaluates the challenges of realising the Asian Century in terms of the region catching up with the advanced countries of the West (West 2018). Others focus on the implications of the rise of Asia for other countries, as done by Mahbubani (2018) and Michael Auslin (2017). Under the leadership of former Prime Minister Julia Gillard, Australia was preoccupied with how the country can ensure that it benefits from the Asian Century and maintain a central presence in the developments in the region (Australian Government 2012).

In terms of charting a development strategy, the key document is the ADB study *Asia 2050: Realising the Asian Century*. The book presents a plausible future for the region wherein it will undergo 'a historic transformation...[and] regain the dominant global economic position it held some 300 years ago' (Kohli, Sharma, and Sood 2011, 1). It warns though that this success hinges on how a number of challenges are addressed, not just at the domestic level but at the regional and global levels as well. The prescribed agenda includes the need for greater regional cooperation to: 'cement the region's hard-won economic gains in the face of vulnerabilities to global shocks' and to help Asian economies that are rebalancing growth towards "internal" (domestic and regional) demand to fully open their markets to neighbours in the region' (Kohli, Sharma, and Sood 2011, 4). The global strategy calls for a bigger role for Asia wherein it will:

‘gradually transform itself from a passive onlooker in the debate on global rule making and a reticent follower of the rules, to an active debater and constructive rule maker... *as an emerging global leader, Asia should act as—and be seen as—a responsible global citizen*’ (Kohli, Sharma, and Sood 2011, 5, italics added).

Whilst rebalancing is an important theme, the study is careful about emphasising that Asia’s predicted rise will not come at the expense of the rest of the world. Rather, ‘[a]s Asia becomes the centre of the global economy, it will be in its own interest that the rest of the world also does well economically and politically...the Asian Century should not be Asia’s alone but the century of shared global prosperity’ (Kohli, Sharma, and Sood 2011, 5).

Similar points are echoed in discussions regarding the AEC. However, whilst the AEC also speaks of deeper integration with the global economy, it is more concerned with the specification of a regional economic community and its place in the broader global economy. The AEC was borne out of a shared vision to transform ASEAN into: (i) a single market and production base; (ii) a highly competitive economic region; (iii) a region of equitable economic development; and (iv) a region fully integrated into the global economy (ASEAN 2008). Although the AEC was declared as ‘established’ at the end of 2015, work on forming a prosperous, competitive, and inclusive regional economic community will take time and will continue beyond 2015. As expected given ASEAN’s strong preference for non-interference and consensus decision-making, policy measures under the AEC ensure the accommodation of country-specific circumstances and make allowances for differences in the pace of implementation. Furthermore, ASEAN leaders also realise that the AEC will need to address emerging challenges resulting from current and anticipated changes in the regional and global economic landscape. One of these changes is recognition of a ‘new normal’ in the global order wherein the world’s major economies are experiencing a prolonged slowdown whilst rapid growth has shifted to emerging economies (RSIS and ISEAS 2013). In 2015, ASEAN launched

the AEC 2025 Blueprint which lists the creation of ‘a deeply integrated and highly cohesive ASEAN economy that would support sustained high economic growth and resilience *even in the face of global economic shocks and volatilities*’ (ASEAN 2015, 2, italics added) as one of its goals.

The resilience of the regional economy is a key theme in ASEAN’s agenda (ASEAN+3 2018; AMRO 2018b; ASEAN 2018). Parallel to concerns about global risks is a growing emphasis on ASEAN countries’ role in and contribution to the global economy. Moving from the original AEC Blueprint’s goal of full integration into the global economy, the AEC 2025 Consolidated Strategic Action Plan makes more ambitious strides towards a ‘Global ASEAN’ with the aim to ‘strengthen ASEAN’s position as an open and inclusive economic region, and lay the foundation for ASEAN to retain its centrality in global and regional engagement’ (ASEAN 2017, 46). Granted, there are parallels with other conceptualisations of economic resilience outside the region. Both the IMF (together with the Financial Stability Board [FSB] and Bank for International Settlements [BIS] [IMF, FSB, and BIS 2016]) and the European Commission (2017) cite the importance of shock absorption; however, the spatial implications in the case of Europe are worth mentioning. Whilst ASEAN underscores the need to withstand spillovers from external shocks, the European Commission is more concerned about preventing the spread of ‘strong spillover-effects across the euro area’ (European Commission 2017, 3) and specifying a framework for policy interventions in ‘key areas for resilience’ (European Commission 2017, 2) including the labour market and public finances. This contrasts with the conceptualisation of economic resilience in East Asia, which highlights deepening economic integration and openness and seeking ‘mutually beneficial economic agreements with external partners... to strengthen resilience against rising protectionism’ (ASEAN 2018). It also takes a relatively less prescriptive tone in contrast to the European Commission’s policy recommendations. The East Asian notion of economic resilience has deeply historical roots concerning nation-building and regime survival, which will be expanded upon in Section 2.4.

### *2.2.5 Challenging East vs. West dichotomies*

The preceding discussion demonstrates the persistence of dichotomous East vs. West categories in the discourse on economic growth in East Asia from the early 1990s until 2018. It is also noteworthy that more recent rhetoric employs the 'global' frame to highlight two different dimensions: the region's exposure to global risks and its role in the global order. The use of these spatial categories in the depiction of economic growth can be roughly summarised as a narrative that vacillates through the peaks and troughs of East Asia's growth trajectory. Advocates of the East Asian model highlight features supposedly unique to the region when the economies are performing well whilst supporters of the Western model insist that the region's success is due to its adoption of policies that are conventionally associated with their own economies or with the IFIs they lead. As discussed above, this can be observed through the discourse on the East Asian miracle (prior to the Asian financial crisis), the Washington and Post-Washington Consensus (in the immediate aftermath), and the Beijing Consensus and the China model (during the global financial crisis). A decade after the global financial crisis first hit, we are witnessing the extension of the narrative to the realisation of the Asian Century and the ongoing process towards the realisation of the AEC. When invoking a regional frame in this context, the recent discourse has also shifted in that it now refers to the 'region' as a constructed space of resilience and market expansion, as well as a constructed space for joint action. The discourse also sees the 'region' as a platform for asserting a greater role in the global economy.

As raised in the beginning of the section, the evolution of the discourse on economic growth in East Asia is crucial to understanding how countries in the region have justified their respective policy choices. Whilst the specific content of growth strategies vary, the invocation of East vs. West frames has remained through the years. Foregrounding such overt comparisons is analytically problematic. For instance, Toby Carroll and Darryl S. L. Jarvis (2017) criticise the tendency of developmental state literature to reduce East Asia's experience to a

list of institutional features and a particular policy agenda. In fact, Johnson himself warned against reading his analysis as a blueprint for developing countries (Johnson 1999, cited in Carroll and Jarvis 2017). Moreover, the characterisation of the developmental state as a uniquely East Asian phenomenon disregards the strong influence of Friedrich List's work in economic thinking during the Meiji era (Deans 1996; Breslin 2011b), and overlooks parallels with the role of the strong state in the German ordoliberalism (Bonefeld 2012). The use of East vs. West dichotomies in economic growth discourse also raises the problem of self-orientalisation. Labels such as 'Beijing Consensus', 'China model', and 'the Asian Century' reinforce the Eurocentric notion of a global modernity. Against this backdrop, economic success allows East Asian countries to assert themselves as rising players; however, this is done within parameters determined by global capitalism. In effect, 'the self-assertiveness of orientals under these circumstances would seem to represent not an alternative to but a consolidation of Eurocentric hegemony' (Dirlik 1996, 116).

Nonetheless, Arif Dirlik's point also helps us understand the persistence of East vs. West frames when used in policy justification. As raised in the beginning of this chapter, defending policy choices by referring to East Asian models of economic growth allows its users to assert themselves to the global public. However, as the parameters of surveillance and external accountability are largely determined by global technocratic institutions such as the IMF, couching policy justification in more technical, apolitical language helps with gaining validation from the global technocratic audience.

### **2.3 Deconstructing dichotomies in East Asian economic growth**

More technical discussions on economic growth in East Asia depart from the politically-loaded comparisons highlighted in Section 2.2. However, they are still generally inclined to perpetuate splits between other categories (e.g., state

vs. market, real vs. financial sectors, internal vs. external). A review of the economic literature applying these categories shows that whilst such distinctions persist, how they are used and framed as a cause of (or solution for) economic growth (decline) has changed over the years; furthermore, the shifts also coincide with the same critical junctures (i.e., the Asian and global financial crises) in East Asia's growth trajectory. With a few exceptions, these narratives do not give due consideration to the overlaps and interactions between categories. As will be demonstrated below, most accounts frame their analyses by emphasising the significance of one category over another, thus linking the causes of (or solutions for) economic growth (decline) to an allegedly distinct category. This is a glaring omission given the nature of systemic risk, which will be discussed further in Chapter 5.

This section will juxtapose an analysis of how other dichotomies—state vs. market, real vs. financial sectors, and internal vs. external risks—were used in technical discourse on economic growth in East Asia with the discourse covered in Section 2.2. Whilst these categories may be perceived as less politically-laden relative to East vs. West frames, the construction of these dichotomies serves to support important elements of discussions of East Asian vs. Western models of growth.

### *2.3.1 East Asian Miracle*

In East Asia, the debate on the role of the state in relation to the market is central to discussions on the developmental state model. This is captured in the aforementioned World Bank reports published in the 1990s—the 1991 *World Development Report* (World Bank 1991) and *The East Asian Miracle: Economic Growth and Public Policy* released in 1993. The former argues that the developmental state model was a success precisely because the state pursued a 'market-friendly' agenda and opened its economy to the global market. The World Bank's position reflects neoclassical claims that privilege the role of the market in the growth of various East Asian economies. These claims trivialise the significance of the state by suggesting that it merely supported and followed the

market (instead of actively directing its operation), with some studies even insisting that these economies would have enjoyed faster growth had the state not intervened at all (see Singh 1998 for examples).

The second World Bank publication is particularly noteworthy in light of the motivations behind the study. With its impressive economic growth and a successful track record of aid and investment in East Asia during the 1980s and 1990s, Japan sought to contest the World Bank and its core principles regarding the role of the state in economic development. As the World Bank criticised its aid programmes, Japan wished to enhance its role as a leader in development thinking and convinced the Bank to undertake a study on how the region had prospered and what other countries can learn from the experience.<sup>10</sup> As with the 1991 *World Development Report*, the study concludes that growth in high-performing East Asian economies was largely attributable to market-friendly policies. It acknowledges that certain interventions helped some Northeast Asian economies, albeit with the caveat that success depended on whether the interventions were 'disciplined by competition, via either markets or contests' (World Bank 1993, 11). Whilst some recognition is given to specific export-oriented policies in Japan, the World Bank's fundamental position on market-friendly policies by and large remained unscathed.

However, other analyses challenge the divide between the state and the market as depicted in the aforementioned accounts. The governed market theory challenges this state vs. market dichotomy as it recognises the importance of political arrangements; specifically, the theory argues that the relatively high investment levels in Japan, South Korea, and Taiwan is a result of government interventions (Wade 2004). This is not just limited to direct state intervention as the financial sector functioned as an important state mechanism for monitoring and fostering investments in the industrial sector. State-backed or -owned financial institutions played an important role in mobilising funds, both locally

---

<sup>10</sup> Whilst ideational conviction was a key factor, Japanese motivations for pushing the study also included an interest in improving the country's standing within the World Bank (Wade 1996).

and overseas. It was through the financial sector that governments could manage industry to ensure that firms were aligned with the country's development strategy (Chandrasekhar and Ghosh 1998; Wade 2004). Another way to contest the state vs. market dichotomy is through looking at ownership—in these terms, the cases of Japan and China demonstrate that the public and private overlap to a significant extent. Phil Deans cites the fusing of the public and the private as one of the key characteristics of the developmental state. The blurring of public and private ownership (e.g., through state-owned enterprises or SOEs) in this context is a deliberate part of the state's strategy to expand control over the economy and realise its developmental goals (Deans 1996).

Whilst critics of the developmental state dismiss such arrangements as crony capitalism,<sup>11</sup> they overlook the benefits of cooperative and long-term links between the state, banks, and firms as it can direct a country's high savings into efficient investments. In this regard, critics are inclined to stress distinct real and financial sectors, whilst the developmental state puts more emphasis on the linkages between the two. Such corporatist political arrangements helped sustain stability and predictability in the operation of firms with high debt-equity ratios (Wade and Venoroso 1998). Robert Wade concedes that this arrangement does not always work (for instance, in the case of economies with open capital markets) and can be prone to corruption (as witnessed in Indonesia); however, he maintains that close relations between the state, banks, and firms were instrumental to the high and sustained economic growth in a number of East Asian countries (Wade 2004).

### *2.3.2 Asian financial crisis*

With the outbreak of the Asian financial crisis, the state vs. market and real vs. financial sectors categories took on different forms, depending on how they were framed as causes of or solutions for the crisis. The role of the state vs. the

---

<sup>11</sup> Paul D. Hutchcroft (1998) coined the term 'booty capitalism' to refer to the case of the Philippines to describe how embedded patron-client relationships in the country rendered state institutions (specifically the Bangko Sentral ng Pilipinas) subordinate to oligarchic interests.



market continued to be a focal point for the West in their depiction of both the causes and the solution. In terms of the former, it was already mentioned in the previous section that the US Treasury blamed crony capitalism and the close links between the state, banks, and firms for the collapse in 1997. After the Washington Consensus-based reform agenda that was initially pushed by the IMF failed, the new solution touted as the Post-Washington Consensus approached the role of the state vs. the market in an ostensibly different way. The Post-Washington Consensus involved expanding the economic growth agenda to include wider goals of good governance and institution building. The premise is that state intervention is justified in light of the market imperfections (mainly defined as information asymmetries and transaction costs) that came into sharp relief during the Asian financial crisis. Yet as Ben Fine (2001) argues, the acknowledgement of market imperfections may seem novel but the Post-Washington Consensus continues to portray the role of the state and the market as discrete in theory and in practice. This reinforces the state vs. market dichotomy as reflected in the aforementioned World Bank publications, without considering the relationship between the state and the market as a product of economic and political relations that shape, and are shaped, by underlying socio-economic structures.

The real vs. financial sectors discussion during the Asian financial crisis is embedded in diverging conceptions of what constitutes 'macroeconomic fundamentals' and how differences in these fundamentals could have led to the crisis. As previously mentioned, officials from the US Treasury and IFIs lauded East Asian economies for their 'strong macroeconomic fundamentals' before the crisis hit the region. In their view, strong fundamentals meant open markets, reduced deficits, and increasing privatisation, amongst other things (R. B. Hall 2003). However, various analyses of the causes of the Asian financial crisis draw on different interpretations of what macroeconomic fundamentals cover and whether these were in themselves determinants of the crisis (Montes 1998; J. Y. Lim 1999).

### *2.3.3 Global financial crisis*

With the discourse on economic growth in East Asia taking place in a very different context compared to the regional crisis nearly ten years before, the global financial crisis presented an opportunity to trace the shifts in the economic logic using the same categories of state vs. market and real vs. financial sectors. However, instead of looking at both causes and solutions as done for the Asian financial crisis, the discourse on economic growth in East Asia generally overlooks the former and focuses on the response instead.

Rather than simply reverting to the usual state vs. market debate, the relative success of many East Asian countries in spite of the downturn changed the tone of the discussion. The global financial crisis fuelled talk of the rise of the developmental state and the fall of the neoliberal state in the region. Granted, this discussion is not entirely new to the global financial crisis—critics of the East Asian model saw the Asian financial crisis as a vindication of their claims and hoped that it would herald the rise of the neoliberal state in the region.<sup>12</sup> It should be noted though that such discussions resulting from the Asian financial crisis were not imbued with a particular economic logic, despite being cloaked in a technical façade. In Mark Beeson and Iyanatul Islam's (2005) assessment, they go so far as to claim that the dispute between the developmental vs. neoliberal state played out in the region regardless of any perceived empirical and theoretical credibility. They argue that:

‘In the case of post-crisis East Asia, the notion that the political economies of the region need to be fundamentally reformed to re-ignite the economic

---

<sup>12</sup> However, such predictions were premature. From the neoliberals' perspective, the Asian financial crisis may have created an opportunity to extol the virtues of the neoliberal agenda but the process and outcomes are more ambiguous than the clear ascent of the neoliberal state they hoped for. A volume of case studies in the region edited by Richard Robison and Kevin Hewison (2006) shows the extent of the variation across the region. In Thailand, for example, the exacerbated economic slump led to an opposition towards the neoliberal reforms implemented after the crisis. On the other hand, the South Korean government used the neoliberal reforms to regain its lost legitimacy. Rather than simply going unchallenged, Hewison and Robison argue that East Asian economies strengthened, evaded, or even appropriated the neoliberal agenda in various ways to support or avoid policy and institutional reforms as governments saw fit to facilitate political stability and legitimacy.

miracle of the pre-crisis era does not stem from a politically neutral, dispassionate, and intellectually rigorous analysis of what went wrong in the recession-inducing 1997 financial crisis that engulfed the region. On the contrary, it represents an attempt to reinvent orthodoxy in the domain of economic ideas and ideology by a global policy community that is profoundly influenced by the United States, the key international financial institutions over which it exerts such authority and financial sectors associated with Wall Street' (Beeson and Islam 2005, 198).

The same applies to the second round of the developmental vs. neoliberal state debate during the global financial crisis. Richard Stubbs (2012) portrays this largely as a dispute wherein the developmental state side is embodied by China and the neoliberal model is embodied by the United States. Just as critics used the Asian financial crisis to legitimise the neoliberal growth model, so did detractors from the other camp use the global financial crisis to exonerate the developmental state model. In particular, Stubbs highlights how the Chinese economy was able to pull through the worst of the initial impact of the crisis thanks to a massive state-directed stimulus package.<sup>13</sup> As the global financial crisis raised serious doubts regarding the United States' standing as a model of economic growth, Stubbs described the effects of the crisis as a shift in 'the mix of structures and policies in the major East Asian economies... away from the structures and policies promoted by the neoliberal coalitions and back towards those advocated by the developmental state coalitions' (Stubbs 2012, 54). Whilst he concedes that neoliberal interests still have traction and prefaces his analysis by stating that the two camps are used in the analysis as ideal types, Stubbs does not acknowledge the overlaps and interplay between the developmental state and neoliberal categories.<sup>14</sup> Recent shifts in state ownership in China and Japan

---

<sup>13</sup> Whilst many governments in East Asia put together their own stimulus packages as the effects of the global financial crisis became clearer, these were dwarfed by China's CNY4 trillion package (13% of China's GDP in 2008) (Hur et al 2010).

<sup>14</sup> There are also some inconsistencies in Stubbs' application of the terms 'developmental' and 'neoliberal'. Whilst Stubbs starts his paper with a clear characterisation of what constitutes a

also demonstrate how these states have loosened control in some areas (e.g., privatisation of Japan Post) and tightened in others (e.g., consolidation of SOEs in energy and transport sectors in China), thus calling into question the analytical coherence of a developmental state (Carroll and Jarvis 2017).

South Korea's response to the global financial crisis also challenges Stubbs' analysis as '[a]ttempts to define Korea as either a "developmental" or "neoliberal" state inevitably obscure the importance of inconsistencies and sectoral variations within systems of economic governance' (Pirie 2016, 672). Iain Pirie shows how the global financial crisis was depicted as an external threat to an otherwise fundamentally stable economy, validating the South Korean state's retreat from neoliberalism but only to the extent that it benefited the chaebols (e.g., through tighter labour regulation) and supported national competitiveness. In this instance, analytical focus moves to the divide between internal vs. external risks. Moreover, portraying the crisis as an external threat also allowed the South Korean government to avoid addressing structural issues such as overreliance on exports and high levels of household debt, which would require policies supporting domestic consumption and income redistribution.

As for the discussion post-global financial crisis on real vs. financial sectors, there are both continuities and discontinuities in how it is approached compared to the Asian financial crisis. On the former, the alleged dichotomy between the real and financial sectors is still present in that policy experts still pit one sector against the other. Moreover, it is now used to distinguish a supposed 'Asian mindset' different from other economies, 'a fundamental difference between the East and the West in their worldview' (Sheng 2011, 74). Andrew Sheng, Chief

---

developmental state coalition compared to a neoliberal one, this is not applied in the same way in his analysis of the global financial crisis. For instance, it can be argued that the developmental state is not just characterised by blanket state intervention but by the specific mechanisms and objectives for state intervention. If this point is taken, Stubbs does not delve into how China's stimulus programmes involving infrastructure projects and provision of certain health services should be construed as a manifestation of the developmental state in action.

Advisor to the China Banking Regulatory Commission, insists that the future of the Asian financial system

‘requires a radical departure from the current mindset in the developed economies...thus far, Asia’s success in the real sector has been based on the fundamental premise that finance serves the real sector, not the other way around [and] Asia’s future approach to finance should be based on this same premise’ (Sheng 2011, 157).

Even if this observation is accepted as true, this view is problematic in light of the considerable complexities and uncertainties in the links between the real and financial sectors that surfaced during the global financial crisis. As pointed out earlier with Pirie’s analysis of South Korea’s response to the global financial crisis, the negative impact of the crisis in the region—as marginal as it may have been in relative terms—shed light not just on the external threats but also on the structural weaknesses of the domestic economy. It exposed the need to rebalance from an export-oriented growth strategy to one that relies more on domestic consumption, as well as the deeper links between the real and financial sectors. The implications of this can be observed in Julian Gruin’s (2013) study on the role of the banking sector in China’s economic growth and the long-term viability of the Chinese government’s current strategy. Given the structure of China’s political economy, the consolidation of state authority over capital flows, and the dual role played by the financial sector as both an instrument for controlling industrial development and a tool for implementing macroeconomic policy, Gruin observes a symbiotic relationship between China’s real and financial sectors. Pirie’s and Gruin’s works reveal the problems associated with analyses perpetuating the misconception of an internal/external and real/financial sector divide, which continued even as the global financial crisis further underscored the dangers of doing so.

Another point of discontinuity in the real vs. financial sector discussion stems from the nature of the impact of the global financial crisis in the region. For most East Asian economies, the global financial crisis was essentially a trade

crisis. In spite of growing interregional trade, the final destination for most exports from East Asia was still mainly Western markets. The drop in exports dampened business and consumer confidence, subsequently leading to a decline in private investment and consumption (Hur et al. 2010). Hence, in the years following the global financial crisis, the Economic Research Institute for ASEAN and East Asia (ERIA) engaged economists from its research network to work on a number of topics deemed critical to the region's economic growth in light of the fallout from the crisis.<sup>15</sup> A look at some of the project reports gives a broad indication of East Asia's heightened preoccupation with the transmission of shocks (particularly their origin, direction, and magnitude), a growing realisation of the uncertainties and complexities surrounding these shocks, and a sense of confidence that these can be managed. For instance, the ERIA project entitled *Linkages between Real and Financial Aspects of Economic Integration in East Asia* notes that the project rationale 'has been structured around the idea that between the financial and real sectors of the economy there is a "black box" through which unanticipated shocks, or longer-term, unpredictable changes in either sector may be transmitted from one side to the other' (Corbett and Findlay 2010, 2–3). This statement implies that, despite acknowledgement of unknown links between the real and financial sectors in the region, they are still viewed as distinct categories. As for internal vs. external risks, another ERIA research project entitled *Achieving Sustainable Growth in East Asia* (Corbett and Xu 2010) finds that:

'The region is vulnerable to external shocks but the sources are specific and can be managed if well understood. The main source of business cycle fluctuations is still the United States; despite the growth of China its business cycles play a much smaller role' (Corbett and Xu 2010, viii).

---

<sup>15</sup> ERIA is an independent think tank which provides research and policy recommendations to the ASEAN Secretariat. It was established at the 3<sup>rd</sup> East Asia Summit in 2007 through an agreement among the 16 countries forming the summit, namely Australia, Brunei Darussalam, Cambodia, China, India, Indonesia, Japan, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, South Korea, Thailand, and Vietnam (ERIA n.d.).

A more recent ERIA policy brief also tackles the issue of transmission channels of economic shocks in ASEAN from the rest of the world whilst acknowledging the need to address not just external integration (with the rest of the world) but also internal integration (within ASEAN and the greater Asian region) in the analysis of spillover effects (Majuca and Pagaduan 2015). The authors stress the extent of the variations in the impact of external shocks on regional economies and the need for macroeconomic policy coordination. In this analysis, regional integration is depicted mainly as a tool to build resilience against external shocks. The policy recommendations suggest that ‘common threats can be addressed through collective action, and spillovers and externalities can be internalised through macroeconomic policy coordination’ (Majuca and Pagaduan 2015, 1).

#### *2.3.4 Implications for policy justification*

Whilst some of the accounts covered in this section acknowledge the overlaps and interplay between state/market, real/financial sector, and internal/external categories, those which emphasised the dichotomies framed their explanations of economic growth and decline in East Asia with a tendency to favour one category over the other. The act of selecting which categories to incorporate or dismiss, emphasise or conceal is deliberate and political, in ways which will be explained in Chapter 4. In the context of this chapter’s focus on economic growth models in East Asia, the persistence of the aforementioned dichotomies and the choice to privilege one category over another influences how one identifies the variables, actors, and institutions that determine (and are held accountable for, in the case of actors and institutions) the changes in the economic performance of the countries in the region. These are choices made by economists in the modelling process, specifically IMF and AMRO economists working on surveillance analysis as will be illustrated in Chapter 7.

The various discursive strands on the causes of and solutions for economic growth and decline in East Asia are also underpinned by a discussion on whether the causes and solutions are or should be assigned to one particular category or

another. As can be observed in the studies cited above, the dominant narrative during the Asian financial crisis identified internal factors (e.g., the state and crony capitalism) as the main cause and the immediate solutions were largely determined and imposed externally by the IMF through a Washington/Post-Washington Consensus-based reform agenda. When this failed during the global financial crisis, these external forces were seen as the main culprit for the protracted downturn. In response to this, the subsequent solutions (e.g., accumulation of foreign exchange reserves and the various ASEAN+3 initiatives mentioned in Section 2.2) were largely internal (as in domestic and regional) and focused on mechanisms for self-help and self-insurance. One such example is the development of regional surveillance, which will be discussed in greater detail in Chapter 6.

Analysing the repercussions through this perspective without taking into account how the state and other domestic elites supported, opposed, or co-opted what was labelled as the Western neoliberal agenda supports the constructed notion that neoliberalism has been basically imposed by the West on East Asia. As Raewyn Connell and Nour Dados point out, this can be problematic as:

‘a narrative that makes neoliberalism a Northern [or Western in this context] invention imposed on the South [East Asia] can be useful to politicians who paint their domestic opponents as puppets of Washington... Resistance to neoliberalism is not a matter of throwing out an alien intrusion, but requires deeper local social politics... this is particularly unfortunate when thinking about neoliberalism in the global South, as it downplays the agency of Southern actors in the formation of the neoliberal order’ (Connell and Dados 2014, 134).

Hence, discourse perpetuating such dichotomies can be deployed to serve a strategic purpose. Connell and Dados also argue that this problem is related to the tendency to approach the market as ‘the (imperfect) enactment of a pre-formed ideological template’ (Connell and Dados 2014, 134) separating theory from reality. Whilst there is some truth in this claim, this thesis finds that it is not



simply a problem of separating theory from reality and practice but how theory is translated into practice via the design and use of economic growth models, specifically in the context of surveillance analysis.

By and large, both regional and global surveillance analysis adheres to the split between state/market, real/financial sector, and internal/external categories. Chapter 7 will discuss this in greater detail and delve deeper into the construction and representation of these categories in IMF and AMRO surveillance. This has important repercussions when used to underpin policy justification. However, given the significance of developmental legitimacy in the region, policy justification should also be understood as a reflection of how East Asian countries exercise economic sovereignty. This issue is covered in the following section.

## **2.4 Reconciling economic sovereignty with external accountability**

As one of the major casualties of the Asian financial crisis, South Korea held the unfortunate distinction of being the first developed country to be subjected to IMF conditionality after the mid-1970s. The economic rescue package of US\$57 billion<sup>16</sup> required a wide range of structural reforms. The South Korean government agreed to undertake measures such as tax and interest rate increase; trade, financial, and labour market liberalisation; and the closure of nonperforming private financial institutions (including chaebols). The IMF justified the need for such structural reforms as:

‘...the policies and decisions that were normally within the purview of purely domestic governance were a major contributor to the subsequent economic woes. In effect, [the] sovereignty of a nation embodied within internal management and domestic policies was something that the IMF

---

<sup>16</sup> This amount also includes bilateral loans and funds from the World Bank and the ADB.

had decided to modify at a fundamental level, if deemed necessary' (Lee 2003, 877).

This account of how IMF intervention resulted in the 'erosion of the borrowing countries' economic and political sovereignty' (Lee 2003, 904) appears straightforward. However, in the context of surveillance and the principle of external accountability in East Asia, the dynamics are different for two reasons: The first concerns the extent of member countries' legal obligations with respect to compliance with surveillance recommendations (to be discussed further in Chapter 5). The second relates to the particularities of how countries in East Asia exercise economic sovereignty. This section tackles the issue of economic sovereignty in East Asia and how it links to external accountability.

#### *2.4.1 Historical context of economic sovereignty in East Asia*

Whilst the form and pace of economic development in East Asia have varied across countries, the region's preoccupation with nation-building through economic growth has been an overarching theme. Differences in colonial legacies and state capacities shaped how East Asian countries have approached the goal of nation-building. In the case of Japan, South Korea, and Taiwan, the imperatives of wartime mobilisation and national survival spurred rapid industrialisation (Woo-Cumings 2005). A confluence of internal and external factors facilitated the consolidation of state authority in these countries, and the influence of supporting bureaucratic structures that came with it. First, as these countries were dealing with the aftermath of various conflicts including World War II, the Korean War, and local guerrilla unrest, civil society was too weak and divided to develop into a strong opposition with interests the state could not afford to ignore. Second, the consolidation of state power was widely supported by the United States as Washington believed that this was necessary to contain the rise of communism. Massive amounts of FDI and military and economic aid poured into the United States' allies in the region as a result. Third, leaders also used this to galvanise the public towards their cause under the banner of nationalism and the need to build a strong economy and cohesive society to counter the threat of

communism. The general population supported these objectives and backed governments that could provide stability and security (Stubbs 2012). Economic development in China has also been driven by national security concerns; the country's growing links to the global market are justified 'in the name of national sovereignty and self-development' (Agnew 2010, 576). China's particular experience is underpinned by a shared consciousness of a 'century of humiliation', depicted as a product of both internal corruption and external oppression (Callahan 2004). The construction of this historical consciousness in China through education and propaganda is instrumental to understanding how the Communist Party established its authority among its citizens (Z. Wang 2012).

A similar dynamic can be observed in Southeast Asia as post-colonial nation-building underscored the importance of national resilience. As in other countries, economic growth was valued as a tool for securing national prosperity, thus reducing vulnerability to internal and external threats to regime legitimacy. Whilst minimising external threats were a concern, maintaining access to external markets and capital was also crucial to national prosperity (Nesadurai 2004). However, in comparison to Northeast Asia, domestic cleavages—not just in terms of communist ideology but also in terms of ethnicity and religion—were much more prevalent in this part of the region. In most of Southeast Asia, the consolidation of state authority was a highly fractured and contingent process that relied on the influence of local elite coalitions and embedded patron-client relations. This limited state coherence and capacity, which also deepened Southeast Asian governments' reliance on external support to legitimise the authority of new political elites (Beeson 2003).

Hence, nation-building and state legitimacy in East Asia were—and continue to be—contingent on mutually constitutive links between internal and external factors. States sought to legitimise their rule through economic success, which was in turn dependent on international recognition and access to external markets (Deans 1996). The exercise of economic sovereignty in this context also means that East Asian governments seek to align themselves with international

norms as states both contribute to and leverage the global economy. In instances wherein states take part in international cooperation, it is done in the interest of national stability. East Asian countries view participation in the global economy as one that presents both opportunities and vulnerabilities, requiring both 'state orchestration and global negotiations' (D'Costa 2012, 33). This is akin to Singh's argument that whilst it may be true that East Asia's economic growth in the 1990s coincided with the opening of its markets, its integration with the global economy is best described as 'strategic' and not 'close', and that '[East Asian countries] integrated up to a point where it was useful for them to do so for promoting national economic growth' (Singh 1995, 14). Whilst there are variations in state capacity across the region and through the years, this reading suggests that East Asia's strategic integration with the global economy was done with the aim of strengthening economic sovereignty.

#### *2.4.2 Shifting boundaries of economic sovereignty*

How then can the centrality of economic sovereignty be reconciled with rising regionalism? These two forces are not necessarily incompatible<sup>17</sup> given the peculiarities of regionalism in East Asia. After the Cold War, East Asian countries viewed regionalism as an 'intermediate zone between the deterritorialising impulses of capitalism and the territorial limits of nationalism' (Duara 2010, 974). One of the earlier attempts at fostering regionalism can be traced to the 1955 Bandung Conference.<sup>18</sup> Whilst the gathering failed to produce any significant results as far as 'region-building' goes, the Bandung Conference is credited for laying the groundwork for the central element of the 'ASEAN way' as

---

<sup>17</sup> At the same time, the interaction between nationalism and regionalism is not necessarily free of tensions. As Mark Selden (2012) points out, ongoing territorial disputes, the rise of China (and the competition and co-dependence resulting from it), the continuing conflict between North and South Korea, and the uncertainty over the presence and influence of the United States in the region increase complications as these factors create both incentives and barriers in the process of East Asian regionalism.

<sup>18</sup> The Bandung Conference assembled 29 countries from Asia and Africa to discuss shared development political concerns. The Asian countries in attendance were Cambodia, China, India, Indonesia, Japan, Laos, Myanmar, Nepal, Pakistan, the Philippines, Sri Lanka, Thailand, and Vietnam (Camroux 2007).

it contributed to the region's definition of the norms of non-interference, non-alignment, and consensus decision-making (Camroux 2007). In fact, the rationale for ASEAN was driven by the members' 'need to consolidate their authority as states' (Bessho 1999, cited in Beeson 2003, 365); ASEAN's core function 'is to support Southeast Asian nation-building' (Palmujoki 2001, cited in Sutherland 2009, 332). Paradoxically, the appeal of ASEAN lies in its weakness: The sovereignty concerns that led to the creation of ASEAN and its continued relevance have also been the main reason for East Asian countries' hesitation to build strong regional institutions that could potentially erode state authority. Hence, the emphasis on respecting state sovereignty allowed East Asian countries to reconcile regional cooperation with nation-building. In the case of Vietnam, membership in ASEAN was portrayed by the Vietnamese Communist Party as part of its nation-building project. As the government was keen to present Vietnam as a credible member of the regional community and an important partner for trade and investment, ASEAN membership held the key to both domestic legitimacy and international recognition (Sutherland 2009).

Beyond ASEAN, East Asia's participation in open regionalism should also be understood as a domestic political project (Jayasuriya 2003). As evidenced by the competing concepts of East Asia on the one hand and Asia-Pacific on the other, the boundaries and membership of regional institutions in East Asia continue to be in a state of flux. In the early 1990s, the Asia-Pacific Economic Cooperation (APEC) forum was the most prominent regional platform. However, disagreements regarding the pace and process of sectoral liberalisation and disappointment with APEC's failure to deal effectively with the Asian financial crisis caused serious damage to the organisation's reputation and credibility in East Asia. The crisis in the region led to a more defined sense of identity in East Asia by strengthening not only perceptions of increased economic interdependence between Southeast and Northeast Asian states but also perceptions of a 'common Other' because of the response of the United States and the IMF. However, it should be noted that the rise of ASEAN and ASEAN+3 ran

parallel to the rise of other regional platforms with wider membership such as the East Asian Summit (which also counts the United States as a member) and the Trans-Pacific Partnership (although its future is increasingly uncertain under the Trump administration). At the same time, despite the proliferation of regional arrangements in recent years (e.g., the endorsement of the Regional Comprehensive Economic Partnership with ASEAN+3 as well as Australia, India, and New Zealand), bilateralism has also grown as East Asian governments remain pragmatic and continue entering arrangements which they feel is the most effective channel to pursue their domestic interests. This is particularly important in instances where governments are faced with failed regional negotiations and slow implementation (Ravenhill 2002). Hence, the extent of East Asian countries' participation in and commitment to both regional and global platforms hinges on its alignment with national interests and development priorities. Regionalism and multilateralism serve not to constrain state domain but are extensions of it (Camroux 2012).

This is consistent with the notion of ASEAN resilience. As raised earlier in this chapter, the conceptualisation of economic resilience in East Asia takes a particular form that diverges from the IMF and European counterpart. Regional resilience began appearing in ASEAN discourse as far back as the first summit in 1976, where member states agreed to 'eliminate threats posed by subversion to its stability, thus strengthening national and ASEAN resilience'. In the current context, Hoang Thi Ha notes that 'subversion is no longer the overriding concern but national resilience, *especially in terms of economic performance*, remains central to ASEAN's strategic autonomy today' (Ha 2018, italics added). Regional resilience is embedded in ASEAN unity and centrality, as its member countries resolve to 'remain united vis-à-vis external divisive forces' and use the institution as the platform 'to effectively engage key partners, in order to respond collectively and constructively to global developments and issues of common concern' (ASEAN 2018).

### *2.4.3 Economic sovereignty and external accountability*

Sections 2.2 and 2.3 explained the persistence of and problems with the use of discrete geographical and sectoral categories in economic growth discourse in East Asia. The discussion above illustrated the intricacies of economic sovereignty in East Asia and how it is exercised across national, regional, and global platforms. Whilst there are variations across East Asia, the primacy of nation-building through economic growth is a common thread. The region's experience with economic sovereignty also shows how East vs. West and internal vs. external dichotomies are flawed. Before we turn to the rise of regional surveillance in East Asia in Chapter 5, it is useful to illustrate how certain regional initiatives under the rubric of ASEAN+3 support the parallel goals of domestic legitimacy and international credibility.

One of the key lessons that emerged after the Asian financial crisis is the need to develop local capital markets. Earlier in this chapter, it was pointed out how the emphasis on finding local/regional solutions was a product of East Asia's disenchantment with how the West responded to the 1997 crisis. Development of bond markets aligns with the policy stance of the IMF, but local officials readily welcomed this new direction for different reasons. As far as international policymakers were concerned, the rationale for bond market development lies in perceptions of its vital role in fostering national and global financial stability. As for regional officials, the main drivers for bond market development were the opportunities it presented for risk diversification and retention of regional savings for infrastructure development. Local capital development gave policymakers 'space to reassert their control of the liberalisation and institution-building process' (Rethel 2010, 500). Despite such assertions of local control, the Asian Bond Fund Initiative (ABFI) remained nested in Western structures. The ABFI could have been a rising player in global capital markets but officials in East Asia pushed for an Asian-Bond-Eurobond link and the establishment of a Euro Bond Market in Asia to help gain external buy-in for the development of an Asian Bond Market (Sohn 2007), and consequently, also garner market support.

Likewise, although CMIM was ostensibly created so the region will not need to rely to the IMF in the event of another liquidity crisis, East Asia's policymakers opted to include an IMF link. Disbursement guidelines indicate that the funds allocated through CMIM (except for the first 20% of the allotment) will be linked to a programme with the IMF. Granted, ratio of the link has been reduced since the swap arrangement first came into effect in 2010 with the prospect of eventual elimination, yet the decision to take an incremental approach was done to assuage credibility concerns and to avoid strong opposition from the IMF and the United States (Grimes 2011).

In the same vein, the cases of the ABFI and CMIM have similarities with how AMRO surveillance operates. Economic sovereignty calls for careful management of the demands of domestic legitimacy and international credibility—as a platform for policy justification, participation in surveillance activities acts as a channel for strengthening both, especially with the rise of regional surveillance. Similarly, by offering East Asian countries its own platform for alternative assessments of economic performance, regional surveillance allows continued commitment to the principle of external accountability without compromising economic sovereignty.

This is particularly relevant given the underlying commitment to external accountability. Whilst the principle itself is not an explicit component of regional surveillance, ASEAN is increasingly vocal about the importance of the region's role in the global community. In 2012, the region's leaders adopted the Bali Concord III Plan of Action 2013-2017 to signify their commitment to 'enhance ASEAN's role in contributing towards finding solutions to global challenges and to further promote ASEAN a reliable regional player in the global community of nations' (ASEAN 2011). With this in mind, it becomes clearer how regional surveillance should be viewed as an important tool for consolidating domestic legitimacy and international credibility. It would be damaging for regional surveillance to be perceived as a direct challenge to global surveillance; at the same time, it needs to cohere with conceptions of what constitutes the



‘appropriate economic growth model’ for the specific context and interests of the different ASEAN+3 member countries who are part of the surveillance process.

Hence, employing the categories analysed in this chapter serve a strategic purpose when invoked in policy justification. Using East vs. West frames in references to economic growth models may be perceived as too politically loaded and inappropriate when the overarching goal of surveillance is global stability. Mathematical models, on the other hand, carry the badge of technical neutrality that is widely valued in the domain of global economic governance. Yet, as shown in Section 2.3, the use of purportedly neutral categories such as state/market, real/financial, and internal/external can also be traced to themes reflected in East Asian vs. Western models of economic growth. These have important implications given how surveillance models are used to present technical justifications for diverging claims on the sources of and risks to economic growth. The politics inherent in surveillance models deserve due attention, especially when both regional and global institutions are committed to upholding the principle of external accountability, yet have different motivations for doing so as shown in Chapter 6.

## **2.5 Conclusion**

This chapter analysed how the use of selected geographical (East vs. West, internal vs. external) and sectoral (state vs. market, real vs. financial market) categories pervade discourse on economic growth in East Asia from early 1990s till the present. The discussion also revealed the problematic construction of such dichotomies, and suggested that these flawed dichotomies persist as they can be used for policy justification. The application and emphasis of certain categories over another shape how academics and policymakers specify the variables, actors, and institutions that determine the economic growth (or collapse) of countries in the region.

This in turn influences the practice of surveillance and how it represents the sources of and risks to economic growth. With the emergence and expansion of regional surveillance in East Asia, the region's policymakers have access to an alternative platform for policy justification, thus allowing them to showcase their commitment to the principle of external accountability. However, the salience of international credibility and domestic legitimacy in East Asia means that regional surveillance cannot present itself as a direct contender to IMF surveillance; at the same time, the imperatives of nation-building need to be prioritised in regional surveillance as well. East Asian countries are increasingly keen to assert themselves as rising players in the global economy. These aspirations mean that the region has become more conscious about how it portrays itself as a responsible member of the global community. As the narrative of East Asia's growing prominence in the global economy continues to be framed as a process of internal resilience amidst external incursions, regional surveillance offers East Asia the chance to present its own assessment of what constitutes 'strong' economic fundamentals; however, it will do so in terms considered appropriate by the gatekeepers of global economic governance.

East Asia's conception of strong economic fundamentals may not always conflict with the dominant framework espoused by IFIs. Nonetheless, in the event that this is the case, tensions that may surface in attempts to reconcile internal pressures with the external accountability can be minimised and deflected if policy justification is underpinned by model-driven surveillance analysis. The use of mathematical models lends surveillance analysis the apolitical tenor and technical authority expected from any credible assessment of economic policy, hence making surveillance models a useful political resource.

The next chapter elaborates on this point, as it discusses the continued dominance of mathematical modelling after the global financial crisis and reviews explanations for modelling's endurance despite widespread recognition of its limitations.

# CHAPTER 3

## ***The Persistence of Modelling: Proof of Expertise, Pretext for Its Limitations***

---

### **3.1 Introduction**

The previous analysis of crisis narratives that emerged out of the Asian and global financial crises illustrate how spatial (East vs. West, internal vs. external) and sectoral (state vs. market, real vs. financial) categories were misleadingly constructed as analytically discrete units. Moreover, emphasising one category over another frames assessments of economic policy in East Asia in such a way that the sources of and risks to economic growth were attributed to certain sectors or actors and institutions associated with a particular geographical area. As argued in Chapter 2, such assessments can be construed as politically contentious. In the context of regional and global surveillance, politically laden assessments of economic policies are especially problematic when the primary objective of the conduct of surveillance is maintaining global financial and macroeconomic stability. Consequently, the integrity and authority of surveillance analysis are rooted in its veneer of technical neutrality.

In the next two chapters, we explore the claims of technical neutrality that characterise economic policies derived from mathematical models. As will be shown in the coming discussion, this is a theme that has been covered in philosophy of science, economic sociology, and IPE literature. Whilst these works have produced valuable insights, this thesis extends existing analyses by investigating how claims of technical neutrality in mathematical formalism are embedded in mutually constitutive links between methodological and political logics of reasoning and representation.

The present chapter opens the discussion with a survey of the continued dominance of mathematical modelling after the global financial crisis. The global financial crisis has triggered a wave of changes and self-reflection amongst economists regarding macroeconomic theory and modelling; however, it is premature to claim that we are witnessing a ‘fundamental ontological and epistemological shift’ (Best 2016, 48). In their analysis of selected conferences and publications between 2007 and 2012, Vinca Bigo and Ioana Negru investigate the extent to which economists questioned their discipline’s dominant methodological orientation. Whilst there is genuine concern about the state of mainstream methodology, most participants and authors continued to emphasise the need to work within the framework of mathematical formalism. Most of the solutions presented involved developing or improving models; with the exception of a few dissenters, no one considered a future for macroeconomics wherein the emphasis on mathematical modelling would decline. The authors observe that ‘economists continue to take existing methodology as an unquestionable (sacrosanct) given’ (Bigo and Negru 2014, 342). Post-crisis debates favoured strategies that did not stray from the usual path of the core methodological framework.

Granted, expectations of radical change should be managed, especially immediately after the crisis. Within the IMF, there is now a more diverse engagement with various theoretical traditions and methodological approaches in staff research and policy outputs. Yet the extent of pluralism is still largely limited as Fund economists continue to work within the broad scope of New Consensus Macroeconomics; modelling and other forms of quantitative analyses are still prioritised within the IMF. Staff members reflected on and dealt with the post-crisis academic debates with a pragmatic mind set, one limited by the necessity of policy-oriented research as well as institutional and operational constraints (Clift 2018). Reform initiatives need to be ready for swift implementation; economic theory and models should provide policymakers with easily digestible and actionable guidance (Palumbo 2017). Crises may prompt

ontological and epistemological deliberations but they do not guarantee the complete overhaul of an entrenched theoretical and methodological approach. In times of crises, policy influence always lies with those who work within the dominant paradigm, even though it may be the same paradigm that led to the crisis itself (Bryan et al. 2012). In this regard, it is likely that policymakers cannot afford to make such drastic changes in times of crisis as this could be conceived as an admission of loss of authority and control precisely at a time when this is needed the most.

Nonetheless, the flawed yet persistent dominance of mathematical formalism merits a deeper investigation, more so as it continues to underpin global economic governance without any signs of wavering. Chapter 3 offers an alternative explanation for mathematical modelling's unrelenting clout as this chapter builds a case for the capacity of models to serve as a political resource. In contrast to existing accounts, the explanation presented here highlights the ways in which methodological choices made in mathematical formalism can strengthen perceptions of technical expertise whilst offering a justification for its limitations. Section 3.2 reviews developments in mathematical modelling after the global financial crisis. It focuses on two specific models that are widely used in surveillance analysis, namely Dynamic Stochastic General Equilibrium (DSGE) and vector autoregression (VAR) models. Section 3.3 analyses the persistence of mathematical modelling in terms of disciplinary boundaries and the politics of expertise. Such explanations are informative as they shed light on how perceptions of authority are bestowed on some forms of expertise and not others. However, perspectives from these areas of study give more weight to the institutional sources of disciplinary authority; the implications of methodological choices for knowledge production and expert authority are largely overlooked. Section 3.4 addresses this gap as it draws on debates between orthodox and heterodox economics. Insights from these discussions, especially those pertaining to the incorporation of knowledge limitations in mathematical models, are used to demonstrate how mathematical models can be

a useful political resource. Models can be used to justify the growing demands for and limitations of technical interventions in global economic governance; at the same time, models can also bolster expert authority and provide a defence for any shortcomings. It is argued that this can explain the continued dominance and expansion of mathematical modelling after the global financial crisis, in a way that reveals both the coherence and contradictions inherent in the practice of mathematical formalism.

### **3.2 Mathematical modelling after the global financial crisis**

Post-crisis regulatory reform treated the 2007 downturn as a ‘socio-technical failure’ that can be remedied with sophisticated technical interventions run by technocratic experts (Engelen et al. 2012, 361). Rebuilding the financial system after the collapse was largely seen as a matter of identifying the appropriate socio-technical fix for ‘calculative failures’ in an otherwise functioning global economy (Engelen et al. 2012, 360). A similar premise underlies the direction of changes in mathematical modelling after the global financial crisis. As mentioned above, the surge in calls for improving models has led to wider recognition of its flaws, yet a more fundamental questioning of its continued dominance—one that foregrounds the importance of methodological choices in the construction of knowledge and technical expertise—remains to be seen.

This section will provide an overview of the post-crisis commentary on economic methodology. As the debate on the failures of economics after the crisis is well-trodden territory (see for example, Lavoie 2016; Colander et al. 2009), the discussion here will centre on the comments on macroeconomic modelling, a core component of surveillance analysis. This can be observed in various spillover models developed by IMF, ADB, and AMRO economists, which will be analysed in greater detail in Chapter 7. Even with this narrow focus, it is difficult to get a clear consensus on the state of macroeconomic modelling. What are the

appropriate criteria for a fair assessment? Should the critique be based on the validity of the model's assumptions or the effectiveness of its policy recommendations? Should we focus on the model's explanatory or predictive power? A decade after the crisis has passed, there is no shortage of suggested solutions but the search for answers continues. As Olivier Blanchard, Emeritus Professor at the Massachusetts Institute of Technology and IMF Chief Economist from 2008 to 2015, pointed out in an off-hand remark during his speech at the 2017 NBER Macroeconomics Annual Conference:

'This may be a hopeless and misguided search. Maybe even the simplest characterisation of fluctuations requires many more distortions. Maybe different distortions are important at different times. Maybe there is no simple model... I keep faith that there is' (Blanchard 2017, 3).

This section offers no guidance either; instead it will shed light on the persistence of this faith in mathematical modelling that Blanchard shares with many others, despite recognition of its significant limitations. The focus will be on two models, i.e., DSGE and VAR, that are widely used in both IMF and AMRO surveillance. These models—and their inability to account for non-linearities and financial frictions—are of particular interest given post-crisis surveillance's emphasis on systemic risk and macroprudential policy. This section will also outline some of the new models that were developed after the global financial crisis to incorporate certain aspects of complexities and uncertainties in the financial and macroeconomic system. The expansion of models to incorporate complexities and uncertainties demonstrate the continued predilection for technical rationalisation in economic policies.

DSGE models<sup>19</sup> bore the brunt of the criticism after the crisis, being an easy target given their popularity in many central banks and policy institutions (such

---

<sup>19</sup> The genesis of DSGE models can be traced to Real Business Cycles models and New Keynesian theoretical approaches. John Quiggin (2012) provides a succinct account of the historical evolution of DSGE models, dating back to the first general equilibrium theory developed by Leon Walras in the 1870s.

as the IMF) across the globe. The main features of the core model include three interrelated blocks: a demand block, a supply block, and a set of monetary policy equations, all built on microeconomic foundations derived from assumptions on the behaviour of households, firms, and the government. Following his critique that the impact of changes in macroeconomic policy cannot be predicted solely on the basis of historical data, Robert E. Lucas asserted that consistent empirical links can only be derived from microeconomic foundations, specifically rational expectations, utility maximisation, and market equilibrium (Quiggin 2012). DSGE models are set up such that the agents base their choices on their expectations about future outcomes, and the interaction between agents' behaviour and policy actions lead to market equilibrium after every period. The structure also allows for exogenous events (e.g., productivity shocks) that disrupt the equilibrium conditions and create economic fluctuations. The specification of these shocks helps the user trace how the effects of exogenous effects are transmitted through the economy. The appeal of DSGE models lies in their versatility, as their structure makes them scalable and easy to adjust and expand depending on the policy question the modeller seeks to address (Sbordone et al. 2010). Given its support for the use of monetary policy and the view that market volatility and crises were unlikely, DSGE models were popular during the Great Moderation. It took the global financial crisis to turn the tide.

Critics of DSGE identify several shortcomings in their assessments. One of the oft-cited issues is its misplaced reliance on microeconomic foundations. In his congressional testimony on DSGE models and its use of the representative-agent paradigm, Robert Solow claims that 'DSGE models do not pass the smell test':

'They [DSGE models] take it for granted that the whole economy can be thought about as if it were a single, consistent person or dynasty carrying out a rationally designed, long-term plan, occasionally disturbed by unexpected shocks, but adapting to them in a rational, consistent way... The protagonists of this idea make a claim to respectability by asserting that it



is founded on what we know about microeconomic behaviour, but I think that this claim is generally phony. The advocates no doubt believe what they say, but they seem to have stopped sniffing or to have lost their sense of smell altogether...' (Solow 2010, 2).

The list of DSGE's flawed assumptions is long, including the theories it applies on consumption and investment. The model is also mistaken in its approach towards aggregation and its treatment of shocks as exogenous. Moreover, undue dependence on DSGE conditions its users to view the world as if it follows the depiction in the model. This encourages the belief that the economy does operate along an equilibrium; this leads to ineffective and possibly detrimental policy recommendations (Caballero 2010; Stiglitz 2017). Another glaring gap in standard DSGE models is its exclusion of the financial sector. For instance, the use of DSGE models assumed that any interaction between the real and financial sectors can be reduced in the following manner:

'... in DSGEs, the monetary side of the economy is fully determined by the real sphere. Agents make decision [sic] about producing, consuming, and investing based on the available resources, preferences, and prices. Money is treated as an add-on to the real economy, a mere unit of account that allows for comparing the values of goods and services, facilitating individual optimal choice. Given the outcome of the optimisation process, the financial sector is modelled as passively producing the means to execute the necessary transactions in labour, goods, and services' (Bezemer 2011, cited in Christophers 2017, 266).

Whilst this crucial shortcoming has been acknowledged, the remedies thus far have been limited to the addition of financial frictions to the same core model. Inclusion of the financial sector is now more common in DSGE models, including those used in various central banks across the globe. Before the global financial crisis hit, most central bank DSGE models did not account for credit channels, financial frictions, and macrofinancial interactions and shocks. To a certain degree, this can be attributed to data limitations (e.g., frequency mismatch of

data used for financial and macroeconomic analysis); institutional arrangements (specifically the separation of financial stability and monetary policy analyses in central banks) also played a role. More importantly, the absence of financial frictions minimised modelling complications and kept DSGE models manageable for policy use. A survey of central bank working papers published between 2008 and 2010 found a growing group of central banks developing DSGE models with financial frictions, including the US Federal Reserve, the Reserve Bank of New Zealand, and the European Central Bank which have incorporated such features in their core forecasting models. Despite these notable changes, the incorporation of financial frictions should not be overstated as the additional features are largely limited to the introduction of a financial accelerator or a collateral constraint (Roger and Vlcek 2012). As concerns that a more comprehensive inclusion of financial frictions will result in an unwieldy model prevail, the financial sector continues to be analysed as if it were a distinct realm separate from the real economy (The Economist 2013; Christophers 2017).

Similar views were echoed in academic and non-academic platforms alike, so much so that attacking DSGE models was seen as ‘a media bandwagon’ (Cooper 2011, 378). Nonetheless, DSGE models still had staunch defenders from within the discipline. For instance, Blanchard has been steadfast in his position that ‘current DSGE models are flawed but they contain the right foundations and must be improved rather than discarded’ (Blanchard 2018, 43). As different models are appropriate for different purposes, he proposes the use of five kinds of general equilibrium models, starting with a common core model and developing others for policy, toy, forecasting, and foundational theory. Sceptics argue that such model expansions are usually carried out in a very arbitrary manner, such that the coherence and elegance that DSGE advocates hold dear are diminished (Stiglitz 2017). However, Blanchard believes that continued adherence to microeconomic foundations facilitates ‘formal dialogue’ (Blanchard 2018, 49), and that whilst ‘[o]ne wishes that there were a short cut and a different starting point... I do not think either exists’ (Blanchard 2018, 49). Other

economists share similar views as they hold the position that ‘more persuasive microfoundations’ hold the key to rebuilding stronger DSGE models, although there are differences in opinion on what exactly this would entail (Vines and Wills 2018, 23).

Akin to the DSGE model, VAR models—whilst technically a statistical model and not a macroeconomic one—were also widely used prior to the crisis (e.g., by ADB staff) for forecasts and received some criticism afterwards as well. In its basic form, VAR involves simultaneous regressions of several time series variables using its own lagged values and those of all the other variables in the system. The model emerged as a response to some of the same issues raised against DSGE, specifically the validity of the modelling assumptions as dictated by economic theory and the discretionary normalisation of equations in the model. Without the restrictive assumptions of conventional causal models, VAR is useful for an engineering approach to policy analysis in that the data determines the appropriate theory to be applied (Howitt et al. 2008). Its proponents highlight the advantages of favouring an atheoretical, reduced-form approach where the only assumption necessary is the causal ordering of the variables included in the model (Holden 1995).

As VAR’s atheoretical approach significantly narrows the scope for attack, it was covered less in post-crisis commentary relative to DSGE. Nonetheless, it was also criticised for its inaccurate forecasts as both DSGE and VAR employed linear functional forms and did not account for financial frictions prior to the crisis (Hendry and Muellbauer 2018). Its heavy reliance on historical data also reduces its credibility in terms of generating future policies, making it unreliable as a policy model (Lindé 2018). Furthermore, even those who appreciate VAR for its atheoretical framework concede that purely statistical models are inadequate by themselves as theory is still needed for the interpretation of the data (Howitt et al. 2008).

As a response to post-crisis critiques that such models failed to take account of the various dimensions of complexity and uncertainty in the economy,

various economists also pushed for the use and development of new approaches. A research group of economists and computer scientists from different European institutions developed an agent-based model of the EU economy to investigate the effects of quantitative easing and deregulation of the labour market. Agent-based models include an evolutionary structure to allow the depiction of transactions between agents over time. This is particularly helpful in long-term studies of boom-and-bust cycles (The Economist 2013). Agent-based modelling (drawing from Post-Keynesian traditions) can also incorporate bounded rationality, heterogeneous agents, and financial frictions (Caverzasi and Russo 2018). Economists have also turned their attention to the natural sciences as financial network models are inspired by work on ecosystems, food webs, and infectious diseases contagion (May, Levin, and Sugihara 2008; A. G. Haldane and May 2011). Research using non-linear models and complexity theory are also gaining attention. New institutionalists (inspired by Post-Marshallian economics) designed a macroeconomic model based on a complex systems approach. Whilst their work started before the onset of the global financial crisis, its relevance increased in the years after the crisis with the model's use of non-linear dynamics and multiple equilibria (Cooper 2011).

Just as the increasing realisation of complexities in the economy has led to its inclusion in models (in some pre-determined form or another), the rising acknowledgement of uncertainty has had the same result. There are promising initiatives on the fringes of mainstream economics, one being Sheila Dow's call to endogenise uncertainty in modelling. In contrast to mainstream accounts which depict uncertainty as a constraint to market equilibrium and rational choice, Dow promotes an approach that goes beyond the individual agent and stresses the need for markets that 'accept their own limitations and proceed more cautiously as a result' (Dow 2013, 9). Another approach is being developed under the Institute for New Economic Thinking's 'Imperfect Knowledge Economics' project. As a response to the limitations of the rational expectations hypothesis, the project puts forward the contingent expectations hypothesis

which models rational forecasting in markets open to unanticipated structural change, without resorting to the assumption that market actors are necessarily irrational. By doing so, contingent expectations hypothesis offers an alternative choice to conventional macroeconomic models where ‘we can place at the centre of macroeconomic research partly open models that recognise that determinate structures are inherently out of reach for economic analysis, but that nonetheless provide a way to build macroeconomic theory that is compatible with rational decision-making and thus can explain regularities in time-series data’ (Frydman and Goldberg 2013, 32).

Within mainstream economics, efforts to account for uncertainty in markets are usually done through co-opting uncertainty via mathematical formalism. That the nature of uncertainty essentially means that it escapes accurate quantification does not appear to be a concern amongst these economists. One such example is the creation of an index of economic policy uncertainty using newspaper coverage frequency of selected keywords in US media. The methodology looked at the combination of different terms including ‘economic’ (or ‘economy’) and ‘uncertain’ (or ‘uncertainty’), together with ‘deficit’, ‘regulation’, ‘legislation’, ‘White House’, ‘Federal Reserve’ or ‘Congress’ (S. R. Baker, Bloom, and Davis 2016). In another study, Chiara Scotti designed a surprise index that measures actors’ confidence about the economy based on macroeconomic news surprises. ‘Surprises’ in this study are determined by the difference between the actual releases of macroeconomic variables and the corresponding figures predicted by Bloomberg. These indicators are incorporated in models that still follow standard assumptions of rationality (Scotti 2013).

Observations noting the ‘systemic failure of the economics profession’ (D. Colander et al. 2009) after the global financial crisis may have prompted greater self-reflection amongst economists. However, the tenacity of mathematical modelling was not damaged at all; in fact, its application has widened and its influence endures. As discussed at the beginning of this chapter, pragmatic

concerns and policy imperatives contributed to the resilience of models in economic policy. Crises alone may not generate a cognitive shift as disciplinary and institutional constraints may impede a more fundamental overhaul of the dominant methodological approaches in economic analysis. The next section examines these constraints as consequences of disciplinary boundaries and the politics of expertise.

### **3.3 Mathematical modelling, disciplinary boundaries, and the politics of expertise**

The prominence and prestige accorded to mathematical modelling in the economics profession has a long, if uneven, history. Early forms of economic models appeared as far back as the 18<sup>th</sup> century with François Quesnay's *Tableau Economique* (Morgan 2012), but it was in the 1870s with the first round of the Marginalist Revolution that economists became enamoured with the application of a single mathematical concept (i.e., equilibrium) in their discipline (Bell 1980; Mirowski 1991). The emergence of a shared language and the subsequent 'mathematicisation of economic discourse' (Mirowski 1991, 155) facilitated the rise of mathematical economics, but it was only in the years following the Great Depression that the second round of the revolution occurred. From the 1930s to the 1960s, modelling became institutionally embedded as 'a technique of government' and 'tool for the exercise of public expertise' (Fourcade 2009, 2). Physicists started to join the ranks of economists and spearheaded the development of mathematical models in academic and government institutions. This development was central to the expansion of an influential programme that reached its peak in the militarised research agenda of the United States after World War II (Mirowski 2002).

This section delves into the disciplinary boundaries and politics of expertise that underpin mathematical modelling's favoured standing in economics. Given this thesis' interest in models as a political resource, the

discussion will emphasise the perceptions of authority that are linked to the development and use of mathematical models. Whilst disciplinary and institutional structures may remain relatively entrenched, the dynamic nature of expert authority will also be covered given the fluid hierarchies within a community of experts. This point is particularly pertinent to the case of regional surveillance, as East Asia strives to establish its credibility and authority in the realm of global economic governance after the 2007 crisis.

As in other fields, the boundaries of the community of economists are shaped by particular disciplinary practices that seek to delineate what is deemed as legitimate knowledge. Practices, such as the endorsement of preferred accounts of a discipline's history in major textbooks or citation and publication in top-ranked journals, determine the standards for acceptable knowledge production and the scope for engagement (or exclusion) with other related disciplines (Clift and Rosamond 2009; Clift, Kristensen, and Rosamond 2018). The boundaries of community and conversation are particularly rigid in the case of mainstream economics as the discipline puts a high premium on intellectual cohesiveness, which helps to explain the incentives of the continued use of mathematical models. In disciplinary terms, Marion Fourcade, Etienne Ollion, and Yann Algan offer a biting commentary as they note that:

‘... modern-day economists attribute their intellectual standing and autonomy to their reliance on precisely specified and parsimonious models and measures. They see the field's high technical costs of entry and its members' endeavours to capture complex social processes through equations or clear-cut causality as evidence of the discipline's superior scientific commitments, vindicating the distance from and the lack of engagement with the more discursive social sciences’ (Fourcade, Ollion, and Algan 2015, 92).

To be fair, there has been considerable reflection amongst mainstream economists about the limitations of their analytical inclinations to privilege individual preferences over social processes, and methodological precision over

real-world accuracy. Whilst we have witnessed isolated examples of this development after the global financial crisis (as pointed out earlier in this chapter), knowledge production is a contingent process, especially when it feeds into policy decisions. Stephen Turner refers to this as ‘the problem of the aggregation of knowledge’ (Turner 2015, 46) as he argues:

‘If knowledge is distributed, it needs to be assembled in order to be employed for decision-making. To be assembled, there must be a process... there must be elements of organisation. The organisation of knowledge is the organisation of other people’s knowledge, and the structure of this knowledge involves trust, methods of certification and recognition filters that help to legitimate intellectual authority...’ (Turner 2015, 5).

Given its role in policymaking, the authority of economics thus hinges not just on disciplinary peculiarities but on broader organisational forces as well. State institutions are constructed based on economic practices but are also sites for their concurrent legitimation (Fourcade 2009). Favoured forms of economic knowledge and expertise are thus equated to political authority, and vice versa.<sup>20</sup> The next chapter will build on these observations and will elaborate on the specificities of these links as embedded methodological choices.

In the context of regional and global surveillance, the political authority tied to technical expertise is especially germane given the principle of external accountability. Whilst local contexts have consequential impact on processes of disciplinary socialisation and knowledge production (Fourcade 2009), economics is generally viewed as an international discipline with established scientific standards. As regional and global surveillance offer multiple assessments of the external impact of a country’s internal policies, the perceived link between intellectual cohesiveness and the practice of mathematical modelling is instrumental to the creation and preservation of IMF’s and AMRO’s

---

<sup>20</sup> Although political theory would insist on making clear distinctions between knowledge and truth, and authority and expertise (Turner 2015), it is beyond the scope of this thesis to engage in an otherwise relevant debate.



authority in global economic governance. Mathematical models can be presented as a ‘universalistic paradigm’ (Fourcade 2009, 3) that can facilitate a constructive conversation between regional and global institutions as both work towards the attainment of global financial and macroeconomic stability.

However, adherence to mathematical modelling should be not be seen as a methodological straitjacket that AMRO economists have to wear against their will. Rather, mathematical models are deployed as tools for navigating the hierarchies within the community of economic experts. Janet Newman’s (Newman 2017) analysis of the political ambiguities in communities of experts is helpful in this regard. Her work shows how the reconfiguration of state power under New Labour created spaces for emerging sources of expert authority such as non-government organisations (NGOs) and community workers. As these groups were empowered by the shifts in the authority of conventional experts (including those in government and academic positions), they challenged neoliberal structures by using the same forms of expertise and knowledge practices associated with the actors and institutions they sought to contest.

There are parallels between Newman’s study and the rise of regional surveillance, as the global financial crisis exposed the cracks in the IMF’s credibility as intellectual compass. The financial crises in Asia and Latin America during the 1990s led to the thinking that the primary source of risk and instability can be traced back to emerging markets and developing economies and their flawed policy choices and institutional deficiencies. IFIs and the states leading them encouraged crisis-afflicted economies to adopt a market-oriented regulatory approach aligned with the US and the UK model, with minimal input from emerging markets and developing economies.

With the major financial centres located in New York and London, the United States and the United Kingdom were the de facto intellectual leaders and were the key drivers of the global financial regulatory and surveillance agenda. The global financial crisis challenged the legitimacy of the United States and the

United Kingdom (and the global institutions they headed) as unopposed intellectual leaders in international finance.

One way this shift can be observed is by looking at the changes in the perceptions and reception of the IMF as a trusted adviser and watchdog in East Asia. To be fair, the IMF's image did improve after the global financial crisis but this was largely attributed to the Fund's more open and flexible approach to conditionality in its lending programs. However, assessment of the IMF's response to the crisis revealed the persistence of problems such as a lack of relevance and value-added in the Fund's advice and a perceived lack of evenhandedness in the treatment of member countries. According to interviews carried out by the IEO, groupthink and intellectual capture continues to undermine the credibility of IMF surveillance (IEO 2013).

The changing domestic context and shifts in interstate power also contributed to changes in traditional sources of intellectual hegemony in global finance. After the crisis, there was a shift towards a more centralised international financial system governed by the G-20, with the help of the IMF and the FSB. However, as the G-20 leaders became more proactive in setting the financial reform agenda, the technocrats in these epistemic communities became constrained by the priorities of the G-20 and the G-20 leaders in turn had to deal with growing domestic political pressures (Helleiner and Pagliari 2011). This is certainly not the first time domestic political pressures shaped financial reform. The 1988 Basel Accord was reached largely due to the efforts of US and UK government officials as they responded to demands from the financial sector. The negotiations and ensuing agreements were reached to improve the competitiveness of US and UK banks by ensuring an even playing field (Kapstein, 1994). However, this time around, governments face pressure not only from market forces but from the general public as well. The complexities and technicalities of financial governance meant that the domain remained elusive to most of the public; however, the global financial crisis changed this as it highlighted the dangers of poor surveillance and its impact on the general public.

Whilst these developments widened room for regional authorities to come up with their own approach to surveillance, policymakers in East Asia are hesitant to take a revisionist stand as such a move may damage international credibility and domestic legitimacy. As argued in Chapter 2 and discussed further in Chapter 6, these concerns motivate AMRO surveillance. Regional surveillance consequently serves as a platform for policy justification but expressed in technical terms that comply with accepted international standards of economic expertise. The use of mathematical models allows East Asia to participate in the conversation on global economic governance; having AMRO as an alternative to IMF surveillance lets East Asia join the conversation but in terms they consider appropriate given the region's own concerns about regional resilience and stability. As long as they stay within the confines of mathematical formalism, AMRO economists can draw from their own understanding of the Asian and global financial crises to inform their surveillance analyses. The resulting account is thus a product of political and relational knowledge (Newman 2017) in that AMRO's standing as an emerging expert authority in global economic governance is derived from a degree of alignment with the dominant structures they aim to challenge; at the same time, knowledge production in AMRO is motivated by the evolution of East Asia's ambiguous relations with the IMF.

As demonstrated above, the persistence of mathematical modelling after the global financial crisis can be explained in terms of the institutional sources of disciplinary authority. However, the discussion thus far treats mathematical models as empty vessels for knowledge production. To better appreciate the endurance of mathematical modelling, specifically the embedded practices that facilitate both its coherence and shortcomings, the methodological implications of mathematical formalism also need to be taken into account.

### 3.4 Alternative explanations for the persistence of mathematical modelling

In seeking to investigate the other ways in which mathematical models can be a useful political resource in global economic governance, this section develops an alternative explanation for the persistence of mathematical models that is rooted in the politics inherent in methodological choices. Before laying out the analytical framework of the politics of economic methodology in Chapter 4, this section will outline the debates on the predilection for mathematical formalism in economics. The works of two key figures representing opposing ends in the methodological/political spectrum—Tony Lawson and Ben Fine—are reviewed here to illustrate how critical analyses of mathematical formalism overlook the ways in which the methodological and political are mutually reinforcing. Whilst framing the discussion in this manner risks the exclusion of other important contributions to the topic (e.g., Backhouse 2010 amongst others), this compromise helps focus the attention on the tendency to treat the methodological and political as related *but separate* processes, which is this section's primary objective.

As opposed to the emphasis in the previous section on disciplinary politics, this discussion accounts for how modelling, as a particular kind of methodological practice, drives the process of knowledge production and how this process determines which entities and factors underlying the economy are included or excluded in the investigation. Hence, by examining mathematical modelling as a methodological practice, we can also understand how knowledge limitations are disregarded or accommodated and co-opted. This is crucial in the context of post-crisis modelling: Disciplinary imperatives tend to highlight the importance of modelling in the construction of expert authority but neglect to consider how the growing realisation of the limitations of mathematical models effectively fuelled its expansion. This section ends with an analysis of knowledge limitations (in the form of complexity and uncertainty) against this backdrop.

### *3.4.1 Orthodox vs. heterodox economics*

It bears stating at the onset that orthodox economics is by no means homogenous in terms of theoretical approaches and its use of empirical evidence (e.g., game theory and behavioural economics) (Dow 2008). As raised at the beginning of the chapter, a certain degree of theoretical and empirical heterogeneity can also be seen amongst the mainstream economists who work in the IMF (Clift 2018). In this thesis, orthodox economics is primarily characterised by the cohesion of its methodological approach, specifically in its adherence to mathematical formalism.<sup>21</sup> In debates on mathematical formalism, one of the common distinctions made is between orthodox economists who believe that the economy operates as a closed system and heterodox economists who see it as an open system. Whilst these categories are ideal types, this distinction serves as the main basis for this chapter's examination of the orthodox vs. heterodox debate to underscore the fundamental methodological choices that emanate from this divide.

A closed system is one characterised by social atomism: interactions take place amongst independent and fixed individuals and structures (of beliefs, preferences, and resource allocations, amongst others). Economists then explain aggregate outcomes based on the behaviour of individuals or by searching for regularities in aggregate behaviour. This reduction of aggregate behaviour to methodological individualism is an important consequence of thinking of the economy as a closed system. On the other hand, an economy assuming an open system considers a more complex and dynamic interaction of individuals and structures which are neither pre-determined nor explainable or reducible in terms of the other (Lawson 1997).

Lawson narrows down the divide between the orthodox and heterodox group to the former's 'insistence that methods of mathematical modelling always be employed' (Lawson 2015b, 152). It should be noted that he does not

---

<sup>21</sup> It should be noted that, aside from modelling, discussions on mathematical formalism may also refer to axiomatisation and mathematisation (Dow 1998).

completely disregard the value of mathematical models: Lawson specifies that it is the orthodox school's dogmatic application and failure to dig deeper and question fundamental assumptions behind social ontology and economic methodology that is at the root of problems in economics. Lawson argues that 'if for many the belief that mathematical formalism is essential is just too ingrained to be easily shaken off, the thought that formalism could actually be deleterious is beyond comprehension' (Lawson 2003, 249). He insists that the debate between orthodox and heterodox economics is not primarily due to opposing policy and substantive claims; Lawson believes that ideologies about how the economy works should not be blamed for 'what went wrong with economics'.<sup>22</sup> The shortcomings of mainstream economists is not their ignorance—wilful or otherwise—of the real nature of the market. Nor is it a deliberate strategy to maintain the status quo. Rather, Lawson's main concern is that mainstream economics' obstinate commitment to mathematical formalism makes model-based economic policy impervious to criticism (Lawson 2015b).

On the other end of the spectrum of the orthodox vs. heterodox debate are those who understand the divide as one that is essentially driven by conflicting ideologies and values. Fine disputes Lawson's critique of orthodox economics as he claims that it cannot be reduced to issues of ontology and methodology. He does not define the orthodox problem of unrelenting commitment to mathematical formalism in such terms; rather, Fine emphasises that the key issue is 'the use of utility and production functions, with accompanying assumptions to allow the theory to proceed regardless of any other considerations—methodology, realism, other theories, empirical evidence, and mathematics—to the contrary' (Fine 2006, 2).

Fine uses the term technical apparatus and architecture (TA<sup>2</sup>) to elaborate on this point. The orthodox technical apparatus is based on the mainstream

---

<sup>22</sup> He does not completely disregard ideology and political factors in his assessment (Lawson 2015b). In fact, Lawson attributes the historical rise of mathematical formalism, particularly after World War II with the influence of the Cold War and McCarthyism on academic economics, to cultural factors and the prevailing political climate (Lawson 2003).

economists' reliance on explaining the behaviour of optimising individuals based on utility and production functions; policy solutions were framed in these arbitrary terms. He argues that accounting for the development of microeconomics through this framework should not be seen merely as 'an original sin, reflective in the implosive disregard for other factors and methods, but the transformation of that sin into virtue as far as the mainstream is concerned' (Fine 2016, 7). Fine observes the same issue in the development of general equilibrium theory, which he considers as the basis of the orthodox technical architecture. General equilibrium theory is faulted, not primarily due to what is commonly seen as its flawed approach and assumptions about the real nature of the economy, but because all these reservations are overlooked. General equilibrium theory is effectively rendered sacrosanct as it is 'open to be adopted or not at the discretion of the discipline according to purpose and convenience' (Fine 2016, 8).

Following this thought, Fine offers a different reason for the persistent dominance of orthodox economics. As mentioned earlier, Lawson argues that orthodox commitment to mathematical formalism is fundamentally a question of social ontology and economic methodology. On the contrary, Fine sees the expansion of the indiscriminate application of TA<sup>2</sup> as a form of 'economic imperialism'. The claim here is that orthodox economics is now more widespread than ever as its analytical approach is considered appropriate for a growing range of fields previously seen as non-economic (e.g., the incompatible application of methodological individualism to accommodate the use of variables such as race and gender). Whilst there is some acceptance that the core principles of orthodox economics are incapable of explaining how the real economy works, the response is not to question TA<sup>2</sup> but to bring in other non-economic variables into the TA<sup>2</sup> framework (Fine 2016). Again, application is done arbitrarily depending on purpose and convenience—Fine points out that 'the specification of orthodoxy is not a fixed ontology nor a fixed technical apparatus but a shifting historical logic that wields the two' (Fine 2006, 3). Under

expanding economic imperialism, orthodox engagement may be wider but it is still done on narrow terms.

These diverging accounts on the continued emphasis on mathematical formalism indicate a clear distinction between methodological and political factors. Lawson's critique of mathematical formalism is primarily based on mainstream economists' ontological position regarding the nature of the economy. In comparison, Fine's assessment is not based on mainstream economics' flawed assumptions about the nature of the economy; instead, he lays the blame on mainstream economics' propensity to sideline such flawed assumptions to accommodate particular interests and objectives. This thesis proposes a different approach and seeks to demonstrate that these two views should be read as parallel and inseparable processes; Chapter 4 expands on this point as it analyses the mutually constitutive links between methodological and political logics in mathematical formalism.

Before we turn to this, it is helpful to clarify how mathematical modelling holds incentives, not just because of disciplinary and institutional constraints as raised earlier in the chapter, but for both methodological and political purposes as well. Consensus around the use of mathematical models in economic policymaking means that model-based arguments can be assessed based on the same criteria. This facilitated the spread of technocratic expertise in US government offices, as model-driven policies were perceived as balanced and objective (Morgan and Rutherford 1998, cited in Dow 2008). As mentioned earlier in the chapter, these are concerns that shape emerging countries' perception of IMF surveillance, hence underscoring the importance of model-based surveillance analysis in the rise of regional surveillance in East Asia.

Mathematical modelling is also valued for its clarity and precision; however, in the context of a complex open system such as the global economy, it can be argued that 'it is better to be vaguely right than precisely wrong' (attributed to Wildon Carr, cited in Chick 1998, 1862). David Colander makes a



similar claim as he argues that the use of formal methods in applied economics creates results that are ‘needlessly precise’. He goes on to claim that:

‘The reason is analogous to the law of significant digits – the result of an analysis can only be as exact as the least precise part of the analysis. Since the sociological and political dimensions are extraordinarily imprecise, making applied economic theory precise adds nothing to the precision of the final conclusion’ (D. C. Colander 2001, 22).

The trade-off between precision and accuracy is a critical point in surveillance analysis, especially in the context of systemic risk and macroprudential policy. As will be discussed in Chapters 5 and 6, methodological complexities, uncertainties, and ambiguities plague the analysis of systemic risk and macroprudential policy. Yet the preference for technical interventions in global economic governance suggests that some semblance of precision is valued over elusive accuracy. This can be observed in the capacity of models to incorporate knowledge limitations, a crucial point that is largely overlooked in other works explaining the resilience of mathematical modelling in economic policy.

#### *3.4.2 Knowledge and its limitations*

Early efforts to establish regional surveillance in East Asia were driven by a search for ‘relevant truths’. One study suggests that regional surveillance could address the demand for more suitable models ‘more directly related to the particular nature of the [recent] crisis in East Asia’ (Manzano 2001, 10). Policymakers in East Asia had reservations about the regional surveillance carried out by multilateral institution, as the ASEAN+3 finance ministers and central bank governors demanded more assessments grounded in the national context and local economic and political conditions (Nesadurai 2009). This continued over the years leading to the global financial crisis. The IEO commissioned a review of the IMF’s Regional Economic Outlook reports between 2003 and 2009. In his assessment of the reports prepared by the Asia-Pacific

Department, Peter Montiel finds that the policy recommendations were largely 'based on a global perspective, rather than a single-country or regional perspective that authorities in the region are more likely to adopt' (Montiel 2011, 6–7). Policy advice in the reports 'clearly intended to support the Fund's particular perspective on the "global imbalances" issue' (Montiel 2011, 7). Whilst these concerns are valid, such observations are predicated on the belief that simply switching to more 'regionally-relevant' models will address the problem. However, the process of mathematical modelling is not just a question of how relevant knowledge is incorporated; it also hinges on how the model accounts for (or minimises) the problem of knowledge limitations.

The conception and use of knowledge and its limitations in economics are often conflated with the notion of information, which economists have fetishised to the point that it 'has inadvertently debased their treatment of knowledge' (Mirowski and Nik-Khah 2017a, 6). Managing the economy has been treated as a matter of collecting and processing the right kind of information, as well as coordinating its use. Here, the economic agent is seen as a passive actor in the production and processing of knowledge. The problem of establishing man's rationality was circumvented by relegating rationality to a set of axioms of rational choice; instead, economists focus on the necessary mechanisms to facilitate rational choice such that 'the object of study needed to be the choice, not the chooser' (Heyck 2012, cited Mirowski and Nik-Khah 2017b, 21). Knowledge did not reside in the economic agent; 'truth' was processed and validated by the market as constructed by the economist in the theories and models they built. In this context, the status of the economist as expert operates under the assumption that she holds enough knowledge to understand how to engineer the system of actors, institutions, mechanisms, and markets that comprise the economy. Hence, the following discussion will focus on how economists navigate and represent knowledge limitations in the models they build.

Economists acknowledge the difficulties of achieving a complete understanding of the economic system; however, they differ on whether these are considered as constraints that can be remedied by reducing uncertainty to measures of probability, or including uncertainty as a shock, volatility, or inadequate information. The works of Frank Knight and John Maynard Keynes are frequently cited as standard economic approaches to uncertainty, wherein the former equates uncertainty to unquantifiable risk whilst the latter is more concerned with uncertainty as an intrinsic part of the economic system (Dow 2013). In many cases, attempts to account for uncertainty in economics were made to maintain coherence with the rational choice framework. Irrationality was seen as ‘a threat to economic theory’ (Amariglio 1990, 29) and acknowledging fundamental uncertainty would be incompatible with rational choice.

A rare voice in the discipline, George Shackle does not see uncertainty as a limitation to economic theory and eschews mathematical formalism in the analysis of uncertainty. He notes that ‘economics has virtually turned imprecision itself into a science: economics, the science of quantification of the unquantifiable, and the aggregation of the incompatible’ (Shackle 1972, cited in Amariglio 1990, 37). Shackle calls for the economics discipline to embrace the totality of uncertainty instead of disregarding it, arguing that the inclusion of uncertainty in its imprecise form will actually lead to more accurate and rigorous economic models. However, such a drastic shift for mainstream economics will prove to be difficult, especially for those involved in policy-oriented research as previously discussed. Even advocates acknowledge that similar approaches to uncertainty may not appeal to those who follow mainstream methodology and will require the economics discipline to adopt a more pluralist perspective (Dow 2013). Most debates in mainstream economics on the limitations of knowledge are framed in terms of specific problems (e.g., adverse selection, moral hazard) and the required points of intervention (Madra and Adaman 2014). This is also reflected in the new post-crisis models that were discussed in Section 3.2, as they

attempt to quantify various aspects of complexity and uncertainty such that it can be incorporated in models.

The dominant perception of knowledge limitations as an incentive problem within a rational choice framework allows for its continued analysis through mathematical models. However, this approach only accounts for the knowledge limitations of economic agents and not the knowledge limitations of the economist who creates these models. Friedrich Hayek alludes to this in his argument about the pretence of knowledge. For Hayek, the notion that an individual or a centralised institution could ever gain complete knowledge or arrive at an accurate estimate of probability is ‘epistemological nonsense’ (Cooper 2011, 375). This is attributed to the dispersion of information (in a world composed of ‘phenomena of unorganised complexity’ (Hayek 1945, cited in Fourcade 2018, 3) and the misconception that knowledge can only be derived through measurement. Whilst this was used to support Hayek’s questionable faith in price mechanisms and spontaneous market coordination, his preference for ‘true but imperfect knowledge, even if it leaves much undetermined and unpredictable, to a pretence of exact knowledge that is likely to be false’ (Hayek 1974, cited in Cooper 2011, 375) has garnered some support. Mainstream economics’ inclination to prioritise analytical precision and mathematical formalism over a more realistic depiction of the messy economic system has been blamed for the construction of ‘a new and artificial “reality”’ (Caballero 2010, 89). Whilst Caballero’s point is valid, surveillance analysis needs to be assessed as a special case. As mentioned earlier, perceptions of objectivity and evenhandedness are associated with the intellectual cohesion and precision offered by model-based surveillance analysis. The credibility and authority of IMF surveillance rests on this foundation; the use of mathematical models presents AMRO surveillance with the tools to challenge IMF’s credibility and authority in a level playing field.

However, the preference for precision over accuracy creates a paradox for model-based policy justification: Mathematical formalism is touted as the main

source of credibility for policy justification in global economic governance, but this means that technical sophistication is valued over realistic representation. This creates an environment wherein mainstream economists can foreground their knowledge and the sophistication of their models in the name of expertise and mathematical rigour; at the same time, they can defend their theories' and models' creation of artificial realities in the name of mathematical formalism. In the context of regional and global surveillance, the construction of 'artificial' East Asian vs. Western economic growth models is permissible due to the pressures of complying with the rules of mathematical formalism. Hence, the use of mathematical models serves to both strengthen and compromise the integrity of model-based policy justification.

When knowledge limitations such as complexities and uncertainties are acknowledged in model-based policy justification, mathematical models can be used to lend credibility to policy analysis whilst defending their narrow applicability. As the principle of external accountability requires countries to explain the external implications of domestic policy choices, this makes mathematical models a valuable political resource in global economic governance. Model-based surveillance allows for a technical dialogue between regional and global platforms that can be construed as objective and evenhanded; at the same time, any disagreements can be reduced as a matter of prioritising precision over accuracy.

### **3.5 Conclusion**

Whereas the previous chapter offered an explanation for the continued (albeit inaccurate) use of distinct spatial and sectoral categories in the discourse on economic growth in East Asia, Chapter 3 presented an alternative account for the continued (albeit problematic) use of mathematical models in economic policy after the global financial crisis. Contrary to other explanations that highlight the importance of disciplinary and institutional constraints, this

chapter attributed the unwavering influence of mathematical models to its capacity to serve as a political resource. More precisely, it illustrated how mathematical models can simultaneously bolster expert authority and provide a defence for any limitations, specifically in terms of the trade-off between precision and accuracy in the analysis of economic policy.

The 2007 crisis may have sparked a widespread questioning of macroeconomic models yet this has failed to make a dent on its status as the dominant methodological approach in mainstream economics. If anything, the compulsion to work within the framework of mathematical formalism has both deepened and widened. New approaches developed in response to the crisis have managed to incorporate various dimensions of complexities and uncertainties in the financial and macroeconomic system into increasingly sophisticated models. The politics of expertise and disciplinary boundaries associate the endurance of mathematical modelling with the institutional sources of disciplinary authority, such as publication in esteemed journals or the legitimization of technical expertise through state support. However, such explanations treat mathematical models as impenetrable black boxes and overlook the implications of methodological choices in the production of knowledge and construction of expert authority.

This chapter argued that a deeper understanding of the persistence of mathematical modelling requires moving beyond disciplinary and institutional factors and taking a closer look at the methodological process itself. To the extent that precision in modelling requires the depiction of spatial and sectoral categories as analytically discrete despite evidence to the contrary (as shown in Chapter 2), the process of privileging precision over accuracy thus involves choices that are not just methodological but political as well. Compliance with the rules of mathematical formalism requires making such choices in the face of ontological and technical constraints. This point will be expanded in the next chapter as it develops the analytical framework for this thesis' study of the politics of economic methodology.

# CHAPTER 4

## ***The Politics of Economic Methodology: Defining and Displacing Accountability through Mathematical Models***

---

### **4.1 Introduction**

To paraphrase Colin Crouch (2011), the strange non-death of mathematical models calls for a deeper interrogation of its enduring dominance within orthodox economics. The growing chorus of criticism after the global financial crisis has failed to weaken confidence in mathematical formalism (as noted in Chapter 3) and this conviction in models can be observed in the conduct of surveillance as well. IMF and AMRO surveillance toolkits draw from a wide range of quantitative and qualitative approaches, yet mathematical models are usually foregrounded in surveillance analysis as their use boosts credence in these organisations' technical and 'apolitical' authority. As the continued commitment to the principle of external accountability obliges countries to justify the external impacts resulting from their respective internal policies, model-based surveillance analysis and the claims to technical and apolitical authority that accompany it are used as the basis for policy justification in global economic governance.

The previous chapter re-assessed the rendition of mathematical modelling as a purely technical exercise as it demonstrated how models can be a useful political resource, in a manner that other studies tackling the political implications of the use of metrics and models in economic policy (Braun 2014; Broome and Quirk 2015; Henriksen 2013; Mügge 2016; Watson 2014) have largely overlooked. Whilst acceptance of modelling's shortcomings continues to facilitate the post-crisis expansion of technical interventions in global economic governance, acknowledgement of modelling's limitations provides a ready

excuse for economists to escape blame for any inaccuracies in their analysis. Building on the argument developed in Chapter 3, this chapter further explores the link between the technical and the political. It does this by developing an analytical framework for unpacking the politics of economic methodology in the case of mathematical modelling. This involves specifying the economic and political logics driving the particular form of reasoning in mathematical formalism and its subsequent representation as models. By tracing the interplay between economic and political logics, the chapter examines how the illusion of distance between the technical and political is constructed and maintained (Prince 2017) through methodological practices embedded in mathematical formalism.

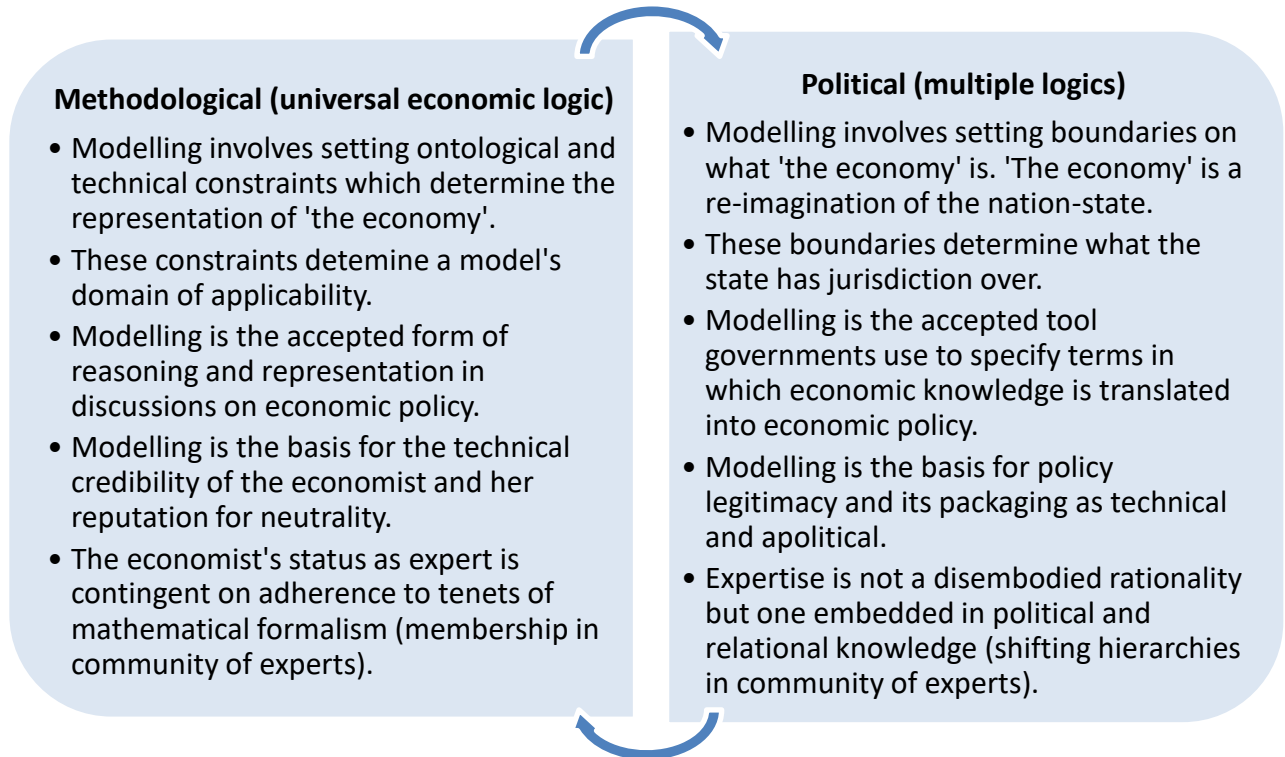
Given this thesis' interest in representation through mathematical models, it is necessary to break down the logic and tensions underpinning the process of how mainstream economists reconcile the choices they make in the models they build. In light of the focus on surveillance and the principle of external accountability, this chapter is mainly concerned with policy justification through the form of reasoning and representation inherent in mathematical models. It is argued that the use of mathematical modelling to underpin policy justification should not be seen merely as claims of technical rationality but as a political assertion of authority and control. As such, mathematical models can also be used as a tool to define and displace accountability in global economic governance.

Following Mitchell's (1998) argument that 'the economy' is the re-imagination of the nation-state, the analytical framework begins with the basic premise that mathematical modelling imposes ontological and technical constraints that determine the representation of 'the economy'. Section 4.2 elaborates on this as it illustrates the interplay between five economic and political logics that drive mathematical modelling (Figure 1). Section 4.3 analyses how this interplay allows for the simultaneous definition and displacement of accountability in global economic governance and proposes five ways through



which this can be observed. The chapter concludes with an overview of how the components of the framework will be used in the rest of the thesis.

Figure 1 – Logics driving mathematical modelling



## 4.2 Reasoning and representation through mathematical models

*'[T]he master-economist must possess a rare combination of gifts. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must lie entirely outside his regard. He must be purposeful and disinterested in a simultaneous mood; as aloof and incorruptible as an artist, yet sometimes as near to earth as a politician'* (quotation from the obituary of Alfred Marshall, Keynes 1924).

John Maynard Keynes' criteria for 'the master-economist' is a tall order; thus, the everyday economist navigates these conflicting demands by making compromises based on their ontological suppositions. This section examines the process and politics of economic reasoning and representation through mathematical models. Whilst references to reasoning in this context allude to the process in which economists navigate the ontological and technical constraints imposed by adherence to mathematical formalism, representation concerns the depiction of 'the economy' in models.

Following Figure 1, the argument will unfold in the following sequence: First, modelling involves setting ontological and technical constraints that determine the representation of 'the economy'; these constraints also determine the boundaries of 'the economy' as a re-imagination of the nation-state. Second, ontological and technical constraints define the limitations of the model's applicability; consequently, the model is also a representation of what the state has control over. Third, modelling is the accepted form of reasoning and representation of economy policy; however, the state sets the terms for representation as it leads efforts to define and measure 'the economy'. Fourth, the technical authority and neutrality of the economist is based on modelling; conversely, the credibility of economic policy is based on this technical authority and neutrality. Fifth, expertise is determined by compliance to the rules of mathematical formalism; however, expertise is not solely determined by a universal logic but is embedded in political and relational knowledge as well. These links demonstrate how the interplay between economic and political logics serves to create and reinforce the illusion of distance between the technical and political through mathematical modelling.

This section will expand on these five points in turn, starting with the methodological side before dealing with the political. The link between the two is examined through two points, namely: (i) the obfuscation of relational issues of authority in models due to the depiction of the economy as a closed system;

and (ii) the implications of incorporating knowledge limitations in models within the constraints of mathematical formalism.

#### *4.2.1 Methodological (universal economic logic)*

As mentioned in Chapter 1, the enduring commitment to surveillance across countries is built on a sense of normative solidarity, albeit one that diverges from the conventional notion of ‘an underlying and broadly shared sense of the rightness of [the IMF’s] prescriptions’ (Pauly 2008, 190). Instead, this thesis’ view on normative solidarity emphasises the salience of the principle of external accountability, which requires that countries be held accountable to other members of the international community in light of the external spillovers of their internal policy decisions (Pauly 1997). Against this backdrop, the credibility and neutrality of policy justification hinge on perceptions of objectivity and even-handedness. This is bolstered by the intellectual cohesion and precision inherent in model-based surveillance analysis.

Following this, the representation of economic policy in the form of mathematical models is one way of giving a semblance of normative solidarity in surveillance analysis as mathematical formalism calls for adherence to a universal economic logic. Economic logic is underpinned by ontological commitments which are:

‘rarely, if ever, challenged by those scholars who work inside the intellectual tradition... these central elements are taken as pre-suppositions, as relatively absolute absolutes, and as such, they become the constraints... within which the scientific discourse is conducted’ (Buchanan 1991, cited in Mäki 2001, 5).

When used in economic policy, these ontological principles—including rational choice, individual autonomy, and free market coordination—effectively define the portrayal of ‘the economy’ in macroeconomic models. Referring back to Figure 1, **modelling involves setting ontological and technical constraints which determine the representation of ‘the economy’**. Adherence to

mathematical formalism requires mainstream economists to work within certain presuppositions about how ‘the economy’ operates (ontological constraints) and ensure that this can be translated into a working model (technical constraints).

As noted in Chapter 3, there is a degree of plurality among orthodox economists as they may differ in their choice of theory or evidence. Nonetheless, they are united in their predilection for mathematical formalism. It should also be noted that a distinction needs to be made between the ontologies of an orthodox economist and the theory she uses—they do not always necessarily coincide. In such cases, the economist may opt to adopt an instrumentalist approach towards theory wherein theory does not need to give an accurate depiction of the real world; rather, it is ‘a useful tool for whatever purposes there may be’ (Mäki 2001a, 10). This point is crucial to understanding any divergences between the models used in regional surveillance compared to those used in global surveillance. As discussed in Chapter 2 and elaborated further in Chapter 6, the purpose of AMRO surveillance is geared towards issues of local/regional economic growth and resilience; surveillance at the global level is more concerned with wider financial and macroeconomic stability.

In addition to taking into account policy objectives, economists draw from some or a combination of empirical, social, and ontological criteria in their theoretical choices. However, the standard criterion for theories as realistic depictions of the real world should be reconsidered as all theories contain unrealistic elements. Instead, Mäki argues that theoretical soundness should be subject to the following test:

‘The problem of theory choice is also a problem of choosing between good and bad unrealistic elements... Putting the thought in terms of truth, we may say the following. Falsehood is not sufficient for making a theory bad. Truth is not sufficient for making a theory good. Yet, truth and falsehood should matter. For them to matter, we have to be able to distinguish between harmful and harmless falsehoods on the one hand, and between significant and insignificant truths on the other’ (Mäki 2001b, 384).

This combination of empirical, social, and ontological criteria underlie the deliberation between harmful/harmless falsehoods and significant/insignificant truths. Consequently, **such constraints determine a model's domain of applicability.**

The invocation of the aforementioned ontological principles by orthodox economists also delimit what is considered appropriate in terms of economic reasoning. A model depicts an economist's understanding of the economic world, and her reasoning with that model is constrained by rules of content and format that are suitable for that specific model. In other words, these rules 'determine and limit how each particular model can be used, and so, constitute the kinds of reasoning that are possible with that particular model' (Morgan 2012, 27). Hence, any critical discussion regarding the validity of a model and its findings will only be taken into consideration if it abides by these same rules. Adherence to particular ontological presuppositions effectively determines who are recognised as 'genuine participants' (Mäki 2001a, 5) in the conversation in orthodox economics. Questioning the persistence of mathematical formalism in economics is also a challenge given the intrinsic nature of scientific reasoning. Once a form of reasoning becomes widely accepted in any discipline, it becomes:

'... a timeless canon of objectivity, a standard or model of what it is to be reasonable about this or that subject matter. We do not check to see whether mathematical proof or laboratory investigation or statistical 'studies' are the right way to reason: they have become (after fierce struggles) what it is to reason rightly, or to be reasonable in this or that domain' (Hacking 1992a, cited in Morgan 2012, 10).

Together with the points raised earlier about how the ontological principles of mathematical formalism determine the representation of 'the economy' in macroeconomic models, this thesis' analytical framework is also based on the notion that **modelling is the accepted form of reasoning and representation in discussions on economic policy.**

The acceptance of modelling as the valid form of reasoning in orthodox economics means that it is also an important criterion for membership in the community of economic experts. Whilst different models may be seen as isolated projects, they are joined together by a shared practice and skillset. Adherence to mathematical modelling becomes 'a community commitment', 'a flexible methodological glue' (Morgan 2012, 399). Emerging issues and debates have to be investigated as a modelling project for it to be given serious consideration by other members of the community of mainstream economists; modelling is thus 'not just a matter of professional habit but...a signal of professional quality' (Morgan 2012, 399).

Modelling therefore also sets the boundaries for conversation in terms of who the economist's audience is. Arjo Klamer (2007) debunks the perception that economists are out to impress their academic or institutional colleagues in general. Instead, the group whose opinion matters the most are those who also share a specific area of expertise. Any discussion or critique that lies outside these narrow boundaries are deemed irrelevant. In the same way that adherence to mathematical formalism's mode of reasoning becomes the basis for the boundaries of dialogue, new entrants to the practice of surveillance are constrained by the accepted rules of content and format for the analysis of economic policy. As raised in Chapter 3, mathematical modelling in economics is highly valued in both academic and policymaking circles due to impressions of objectivity, scientific expertise, and intellectual cohesiveness that are attributed to model-based policy analysis. As such, **modelling is the basis for the technical credibility of the economist and her reputation for neutrality.** Once accepted as a 'genuine participant' of the conversation, **the economist's status as expert is contingent on adherence to tenets of mathematical formalism.** This point is especially important in the context of surveillance in East Asia. Whilst the region seeks to assert its own voice in global economic governance, it must do so within the parameters of internationally-recognised technical expertise.

#### *4.2.2 Unpacking the political in the methodological*

The discussion thus far outlines how the methodological logics listed in Figure 1 drive the modelling process in economic analysis. It draws from perspectives from the philosophy of science to highlight how ontological and technical constraints are a product of abiding by a universal economic logic. This account is based on the portrayal of the economic world as a closed system; model building is thus an exercise of ‘isolation, of inclusion and exclusion, of focusing on key elements and neutralising the rest, of simplification and idealisation’ (Mäki 2002, 11). If it requires the inclusion of unlikely assumptions, a critique of the modelling process from the philosophy of economics perspective would claim that such false assumptions are permissible if it results in the development of a simple model which can serve as a ‘source of relevantly truthful information about the complex reality’ (Mäki 2002, 11). This is related to the point made earlier about theoretical choice, wherein ontological and technical constraints interact and adjust depending on what the economist considers to be harmful/harmless falsehoods or significant/insignificant truths. Mary S. Morgan also acknowledges that model building is not a linear process<sup>23</sup> but one that ‘involves the scientist’s intuitive, imaginative, and creative qualities’ (Morgan 2012, 25).

Yet invoking creativity and scientific reasoning gives the false impression that what is ‘relevantly truthful’ and what is considered harmful/harmless or significant/insignificant, is purely a matter of making methodological choices to comply with ontological and technical constraints. The discussion in Chapter 2 on the variations in the discourse on economic growth in East Asia disputes this as it clearly indicates that the choices between which categories to highlight or downplay—whether East vs. West, internal vs. external, state vs. market, or real vs. financial sectors—are driven by a host of historical and political factors that cannot be reduced to methodological issues. For instance, the analysis of one of

---

<sup>23</sup> This is illustrated in how Thomas Sargent tweaked his interpretation of rational expectations as he struggled to develop a VAR model to accommodate his assumptions (Sent 2001).

AMRO's spillover models in Chapter 7 will illustrate how the decision to foreground external over internal risks is a product of ASEAN's concerns regarding regional resilience, and the shifts in East Asia's economic growth trajectory between the Asian and global financial crises.

Chapter 7 will delve into these points in greater detail as it shows how the proliferation of different models to support regional and global surveillance can be seen as a result of divergences in how economists for these two camps negotiate ontological and technical constraints. In this case, any conflicts can be interpreted as methodological disagreements resulting from differences in how the economist deals with ontological and technical constraints. Others claim that the economist can be agnostic about such matters and may even deny that models are representative of reality as they use them to portray 'parallel or imagined model worlds' (Morgan 2012, 30). Whilst it can be argued that ultimately, calculated political intentions do not always drive the overarching objectives of mathematical modelling (Lawson 2015b), the process of negotiating the ontological and technical constraints discussed earlier involves making deliberate choices.

With regard to the dominance of mathematical modelling and the focus of this thesis on reasoning and representation in policy justification, the methodological is political in two important ways. Firstly, when these choices are reflected in the closed system of a mathematical model, it minimises embedded relational issues of authority but economists can justify this dismissal purely as a methodological choice. As mentioned in the previous chapter, a closed system assumes social atomism in that interactions take place among independent and fixed individuals and structures. Following this, representing 'the economy' as a closed system 'entails that any references to social relationality and so to (relational) issues of power... are effectively masked over or hidden, or at best trivialised' (Lawson 2015b, 161).

The analytical framework developed in this chapter approaches these issues using Newman's conceptualisation of political and relational knowledge



(Newman 2017). As argued in Chapter 3, AMRO's efforts to assert itself as an expert authority in global economic governance is influenced by its ambiguous relations with the IMF. On the one hand, AMRO's operations are still shaped by the IMF stigma left behind after the 1997 Asian financial crisis; on the other, AMRO still relies on the credibility derived from maintaining links with the IMF (to be explained further in Chapter 7). In the context of modelling, AMRO uses the language of mathematical formalism to manage these two dynamics in a way similar to the NGOs and community workers in Newman's study. AMRO economists work through mathematical models to offer an alternative to IMF surveillance analysis, thereby contesting the IMF's dominant authority using the same forms of expertise and knowledge associated with the Fund.

Secondly, navigating ontological and technical constraints means that the validity of economic models is necessarily reduced to its ability to generate 'relative truths'. However, as discussed in Chapter 3, the limitations of knowledge imply that truth is not only relative but also incomplete. Even with the most comprehensive and sophisticated models, model-based policy justification will always contain relative and incomplete truths. However, the implications of these limitations are overshadowed with the pretence of mathematical rigour; precision is prioritised over accuracy.

Accepting that truth is relative is important in the case of regional vs. global surveillance. When the demands and restrictions of conforming to an accepted form of scientific reasoning mean that choices need to be made between harmful/harmless falsehoods or significant/insignificant truths, this means that methodological choices are also political as what is harmful or significant varies across different groups of actors. In the context of this thesis, what is harmful or insignificant to regional economic growth is not necessarily the same as what is harmful or insignificant to global stability—this will be demonstrated through the comparative analysis of IMF and AMRO spillover models in Chapter 7. Even if the intent is not explicit, such decisions are made consciously and involve a call by the economist on what should be considered harmful or significant.

Similarly, acknowledging that truth is incomplete is germane to this thesis' focus. As raised in Chapter 3, the co-option of knowledge limitations (particularly in the form of complexities and uncertainties) in mathematical models increased in the aftermath of the global financial crisis due to growing awareness of systemic risk. The complexities, uncertainties, and ambiguities of systemic risk are examined in Chapter 5; similar methodological issues prevalent in macroprudential policies are covered in Chapter 6. Both systemic risk and macroprudential policies are central to post-crisis surveillance at the regional and global levels. However, whilst the credibility of regional surveillance is contingent on its adherence to global standards of technical expertise, these same standards do not allow for a realistic representation of the many complexities and uncertainties of the global economy.

The relativity and incompleteness of truth have two further repercussions that cannot be explained on the basis of economic logic alone. One relates to how the boundaries of the economy and its components are defined. The other relates to the knowledge economists are presumed to have and how this determines who is considered an expert and who gets to be part of the community and the conversation. The next discussion will shed light on how these two aspects relate to political matters of control and authority, which cannot be subsumed under a singular economic logic.

#### *4.2.3 Political (multiple logics)*

As indicated in the beginning of the chapter, the analytical framework begins with the core premise that **modelling involves setting boundaries on what 'the economy' is**. Conversely, **'the economy' is a re-imagination of the nation-state**. Modelling thus involves defining what lies within the economic realm. Historically, orthodox, pre-Keynesian representations of the economic sphere were defined by the market; here relations were determined by measures of utility, costs, and prices. Keynes' *The General Theory of Employment, Interest, and Money* gave rise to a different construction of the economy which corresponded to geographical boundaries, specifically the nation-state. This

involved aggregation of consumption, employment, investment, and production, which included estimations of wages, interest rates, and other variables. The economy as a re-imagination of the nation-state was a result of pragmatic issues of measurement and technical construction; however, this is only one part of the story. As this approach gained ground in the 1950s, Mitchell points out that the representation of the nation-state as 'the economy' allowed for a new narrative for the nation-state (including post-colonial states) to use to assert itself among its citizens and in the changing global order (Mitchell 1998). Furthermore, it provided the justification for 'a novel conception of politics as growth' (Mitchell 1998, 89). As the state was involved in the construction and collection of new methods and statistics to quantify consumption, employment, investment, production, and other related variables, it was able to represent the economy as a bounded object under government control, managed within specific territorial limits. The notion of economic growth shifted from one centred on material and spatial expansion to 'the internal intensification of the totality of relations defining the economy as an object' (Mitchell 1998, 90). As the nation-state was re-imagined as the economy, the relations defining the former and the latter cannot be easily be separated. However, the state portrays itself as external to the economy as the latter becomes the object of the former's efforts to define, represent, and regulate the whole range of economic relations. Mitchell argues that such a portrayal is problematic as 'the border is just a mode of intervening in and representing certain larger economic relations... neither the economy nor the state forms a self-contained, free-standing sphere' (Mitchell 1998, 92). However, such issues are minimised in mathematical models as **modelling involves setting boundaries that determine what the state has jurisdiction over.**

Whilst Mitchell's compelling analysis used the Egyptian village of B'erat as case study, his insights can easily be applied to the context of surveillance in East Asia. This is not to suggest that this thesis treats the region as simply an agglomeration of member states in its representation as an economic space. As

Breslin and Higgott point out, ‘care should be taken to avoid strict national or sovereign parameters in identifying regionalisation’ (Breslin and Higgott 2000, 345). There are several examples of regional initiatives in East Asia to support this, including APEC (seen as a regional project largely driven by private sector elites) and various sub-regional projects such as the Brunei Darussalam-Indonesia-Malaysia-Philippines East Asian Growth Area (BIMP-EAGA).<sup>24</sup> Rather, the particular practice of nation-building through region-building in ASEAN provides the context for this thesis’ application of Mitchell’s work. As mentioned earlier, the creation of ASEAN is rooted in its members’ ‘need to consolidate their authority as states’ (Bessho 1999, cited in Beeson 2003, 365). Chapter 2 underscored the importance of nation-building and developmental legitimacy in the region. States and domestic elites use economic success to consolidate authority and legitimise power, thus making regional space (as constructed through ASEAN initiatives) an important sphere for state legitimation and control. As ASEAN+3 member states seek to represent itself through the economy and actively participate in the construction of metrics and models that allows its depiction as a territorially-bound object under government control, AMRO surveillance thus becomes a platform for the dissemination such a representation. More importantly, dissemination through regional surveillance means the audience is not just the local public but global observers as well.

National income accounting is one such project: it facilitated the representation of the economy as a self-contained sphere and gave the state discretion to determine what should and should not be counted within the boundaries of national economic activity and growth. Whilst national accounts generally include the financial sector, this is not the case in mainstream macroeconomic models which, until recently, have tended to ignore finance. Chapter 6 will delve deeper into this in its discussion of macroprudential policy.

---

<sup>24</sup> BIMP-EAGA consists of the entire sultanate of Brunei Darussalam; Kalimantan, Sulawesi, Maluku, and West Papua (Indonesia); Sabah, Sarawak, and Labuan (Malaysia); and Mindanao and Palawan (Philippines). Whilst ADB is an important partner in this initiative, there are plans for it to be led by the private sector (ADB 2018).

However, even with these developments, the (real) economy and financial sector are still generally depicted as separate entities. For instance, Chapter 3 underscored how DSGE models typically do not account for the financial sector. The disregard for finance by macroeconomics, and the disregard for macroeconomics by finance, has led to what Christophers calls multiple ontologies in economics that can ‘direct and constrain vision in crucial ways, to influence what can and cannot be seen’ (Christophers 2017, 267). This has significant implications considering the close links between the real and financial sectors in East Asia and post-crisis revelations of the complex interdependencies, not just between the two sectors but also across borders. Against this backdrop, the depiction of distinct real and financial sectors operating within clearly defined territorial boundaries influences what can and cannot be seen, hence also shaping what is (or is not) perceived to be within government control.

Whilst this may be the case, the widespread institutionalisation of mainstream economic expertise in policymaking (Fourcade 2009) means that the state represents and regulates the economic space as it is depicted in a model, making it fit the unifying logic of mathematical formalism like a square peg in a round hole. As demonstrated in Chapter 3, the status and authority of mainstream economists draw from these two sources: its expertise and scientific objectivity (as reflected in its adherence to mathematical formalism), and its role as expert within government institutions. Likewise, the state frames the legitimacy of its policies on the basis of economic expertise and impartiality (Fourcade 2018). The state specifies the terms in which economic expertise is used in public policy; the economist determines the valid representation of these policies in the models she creates (Henriksen 2013). Following the logics listed in Figure 1, **modelling is the accepted tool governments use to specify terms in which economic knowledge is translated into economic policy**; at the same time, **modelling is the basis for policy legitimacy and its packaging as technical and apolitical**.

The final point in Figure 1 concerns the economist as a member of a community of experts as it states that **expertise is not a disembodied rationality but one embedded in political and relational knowledge**. As with any other scientific community, there are also hierarchies of expertise operating within the economics discipline. Membership by virtue of modelling may gain you entry into the community but some members are more equal than others. Earlier in this section, it was explained how this analytical framework's take on political and relational knowledge (based on Newman 2017) interprets AMRO's use of mathematical models as an exercise wherein AMRO challenges the IMF's dominance in global economic governance by using the same forms of expertise and knowledge associated with the Fund. This occurs against the backdrop of shifting hierarchies in the community of economic experts. The different trajectories of economic expertise across the globe and the existence of internal conflicts within mainstream economics are not discounted (Fourcade 2009, 2018). However, the spread and standardisation of post-war modern modelling expertise<sup>25</sup> fuelled the dominant (if inaccurate) perception of a particular brand of economics as the universal form of expertise (Fourcade 2009). Those who wish to join the conversation may offer a novel contribution but it is likely to be assessed against this accepted 'international' standard. One example of how this has played out in East Asia is the debate concerning the World Bank report *The East Asia Miracle: Economic Growth and Public Policy* (World Bank 1993). As mentioned in Chapter 2, Japan sought to challenge the development principles espoused by the World Bank but the report ultimately framed Japan's incredible economic success in its own terms of market-friendly policies. The intellectual authority of the IMF has waxed and waned through the Asian and global financial crises, creating space for the emergence of regional surveillance as a new voice contributing to discussions on global economic governance. However, their

---

<sup>25</sup> Aside from developments in the United States, model-based policymaking was also on the rise in the Netherlands (Maas and Waters 2014).

status as participants in the surveillance conversation will be assessed based on standards for global technical expertise.

Mainstream economists appear united in their form of reasoning and in the practice of their technocratic expertise; this shared logic determines their acceptance into the community and the conversation. Within this community, the relativity and incompleteness of truth are effectively reduced to modelling problems or disagreements. Once again, the accepted form of reasoning and representation renders such issues in terms of methodological concerns. However, taking this at face value diminishes the importance of the shifting hierarchies built within the community of economic experts.

#### *4.2.4 Interplay between methodological and political logics*

To recap, the methodological is political with respect to mathematical modelling as: (i) the representation of the economy in models as a closed system obscures relational issues of authority; and (ii) the negotiation of the ontological and technical constraints means that claims drawn from this form of reasoning and representation are necessarily relative and incomplete truths. Awareness and acceptance of truth as relative and incomplete is not a problem in itself; the concern lies in the portrayal of mathematical modelling as an exercise whose limits are solely determined by adherence to a universal economic logic. The relativity and incompleteness of truth and the economic representations that result from it involve negotiation of ontological and technical constraints as determined by a universal economic logic; however, these are also constraints that are determined by the state and the economic experts it employs.

As we read Mitchell's and Christophers' works together with the experience of various countries in East Asia, the representation of national economies and its different components in mathematical models should not be reduced to a manifestation of a single scientific logic, nor can this be dismissed. Bringing in the nation-state as the level for aggregation instead of the market challenges the common perception of economic science as a universalistic paradigm. The switch

from market to state requires an accompanying shift in representing the economy as a fixed model to a representation of space where multiple discourses are capable of co-existing whilst also challenging and redefining other logics (Daly 1991). We can observe these dynamics in the context of regional and global surveillance, such that the emergence of overlapping frameworks result in multiple representations of regional and global economies and multiple assessments of economic policies that may converge in some aspects and diverge in others. However, these intricacies are minimised in mathematical models.

The tendency of regional and global surveillance to favour model-based analysis gives the false impression that the representation of the economy in such a manner is inevitable, and that contesting such representations can only be done using the same logic. Shedding light on the multiplicity of logics—particularly in terms of the defining the economy and determining membership and status in the community of economic experts—shows how the political creates self-reinforcing feedback effects into the methodological, and vice versa. Hence, what is methodological and political cannot be analysed in isolation from the other.

Following Figure 1, this section outlined five economic and political logics that underpin mathematical modelling in surveillance. It demonstrated how the interplay between these two sets of logics construct and maintain the illusion of distance between the technical and political through methodological practices. In Chapter 1, a case was made for examining economic methodology as a practice that determines how we produce knowledge and how these choices the objects and mechanisms we examine (Jackson 2016). As this thesis studies mathematical models as a tool for policy justification, such methodological choices have significant repercussions in the context of the principle of external accountability as they determine what should be considered as valid claims and assessments of a country's economic policies. The next section expands on the points covered in the analytical framework by examining how the interplay between economic and political logics can both define and displace accountability.



### 4.3 Disentangling accountability in mathematical models

The difficulties of assigning accountability in global economic governance are manifold; however, it is beyond the scope of this study to break down the theoretical and practical issues concerning the distribution of agency and responsibility in the assemblage of global governance (see, for example, Anderson et al. 2012). As mentioned in Chapter 1, this thesis draws from David Held and Mathias Koenig-Archibugi's approach towards accountability in global governance, which emphasises the need for international organisations 'to justify their actions vis-à-vis affected parties, that is, stakeholders' (Held and Koenig-Archibugi 2004, 127). Accountability is usually defined in terms of formal or legal institutional mechanisms, including measures such as voting, appointment, sanctions, and legal responsibility. In the case of surveillance, commitment to the principle of external accountability provides the central plank for establishing accountability as countries are called to justify the external impact of their internal policy decisions, all in the name of global stability. However, this is not a straightforward exercise when surveillance is conducted 'for the benefit both of the international community as a whole and of individual member states' (Crow, Arriazu, and Thygesen 1999, 17). Establishing accountability thus becomes even more problematic with the post-crisis surveillance focus on systemic risk and spillovers as tracing the source and recipients of risk becomes difficult. Chapter 5 will show how the nature of systemic risk means that determining what exactly is 'for the benefit both of the international community as a whole and of individual member states' can be a contentious process. Hence, this chapter views the post-crisis commitment to the principle of external accountability as a matter of *disentangling* accountability: with overlapping regional and global frameworks, surveillance becomes a tool for *defining* and *displacing* accountability in global economic governance.

This reading of surveillance and external accountability informs this section's analysis of accountability in mathematical models. It begins with an

assessment of the difficulties faced when disentangling accountability in economic policy through two approaches. The first focuses on reputational concerns (to highlight the various layers of actors and relationships that underpin surveillance) whilst the second examines the different pressures faced by the academic economist in contrast to the bureaucratic economist (to highlight the role of disciplinary and institutional constraints). In the case of model-based surveillance analysis, mathematical models offer a site for investigating the multifaceted dynamics of accountability that has yet to be explored. Drawing from the previous section's analysis of the interplay of methodological and political logics, the section ends with a discussion of the mechanisms through which the definition and displacement of accountability can occur in mathematical models.

#### *4.3.1 Approaches towards disentangling accountability*

The first approach relates to reputational concerns. The conceptualisation of accountability as 'a relationship between an actor and a forum in which the actor is obliged to explain and justify his conduct' (Bovens 2007, cited in Busuioc and Lodge 2016, 92) is helpful in studying the case of surveillance. Madalina Busuioc and Martin Lodge (2016) build on the concept of accountability as a relationship as they use a reputational perspective to analyse how institutions manage different expectations between different actors. When actors are broken down in terms of account-givers and account-holders, accountability relationships can be viewed as a process of reputational co-production. Reputational concerns determine the strategies account-givers use to manage their accountability relationship with account-holders; at the same time the reputation of account-holders is determined by their effectiveness in making account-givers answerable for their actions. From the perspective of reputational strategies, the preference of AMRO and IMF surveillance for using mathematical models is warranted as it allows both parties to showcase their respective technical authority; at the same time, the use of mathematical models provides an neutral platform for reputational co-production.

Whilst such a framework is instructive, the case of regional and global surveillance creates a number of complications. When we talk about the responsibility for global economic governance and financial stability and the dense network of actors involved, establishing who the account-givers and – holders are and defining the nature of their accountability relationship becomes complicated. The bureaucratic economists in charge of surveillance are held accountable not just by the international organisations they are affiliated with—they are also indirectly accountable to the member states (some with overlapping membership). Furthermore, the function of surveillance means that the bureaucratic economists involved do not only monitor member countries' economic performance, they are also tasked to provide policy analysis and recommendations, which may (or may not) feed into member countries' economic performance. From the side of member countries, they report to these bureaucratic economists to a certain extent but the member countries can also hold the bureaucratic economists accountable for any shortcomings in their monitoring and analysis. Finally, as economists, they are also answerable to other members of the disciplinary community.

The second approach concerns the responsibilities faced by bureaucratic economists. The concurrent 'scientification of politics and the politicisation of science' (Weingart 1999, 151) contests the assumption of a linear relationship between politics and science, which involves the following sequence: politics identifies the problem; science provides expertise; politics determines the policy decision. As demonstrated above, this sequence does not neatly apply in the case of surveillance. Whilst Peter Weingart argues that '[t]he initial concerns about the accountability of experts disappear because access to scientific advice has become democratised and the resulting relationship between science and policymaking appears as recursive and reciprocal rather than linear', this level of transparency does not work in mathematical modelling in economic policy. Another problem can be observed in the specific situation of the bureaucratic economist. Davies' study on anti-trust regulation illustrates the pressures faced

by bureaucratic economists who are required to honour ‘their commitment to scientific analysis [and] their commitment towards their governmental patrons’ (Davies 2011, 304). Both academic and bureaucratic economists advise policymakers on the basis of their scientific authority, but the former are not subject to the political and institutional responsibilities imposed on the latter. Whilst disciplinary constraints are already difficult to dispute, academic economists may do so without worrying about its administrative implications. Bureaucratic economists have to work within both disciplinary and official constraints, ‘living “for” economics and “for” the state simultaneously’ (Davies 2011, 320). Where disciplinary pressures end and administrative ones begin are already hard to identify; couching the advice of bureaucratic economists in mathematical models makes it even more challenging to separate these demands, as suggested in the discussion of the mutually constitutive links between economic and political logics.

Mathematical models may not come across as obvious sites for disentangling accountability in global economic governance. Nonetheless, the significance of models in surveillance analysis should not be dismissed. For instance, Haruhiko Kuroda and Masahiro Kawai, prominent figures in the ADB and the Japanese Ministry of Finance, argue that ‘to be effective, the surveillance process needs to put more emphasis on technical discussions and create an environment for serious policy discussions... The surveillance process must encourage frank discussions on the technical substance without being abrasive and confrontational’ (Kuroda and Kawai 2002, 25). From this position, a model-based approach to surveillance is crucial in taking an objective stance on ‘politically sensitive yet critical issues’ (Takagi 2010, 11). As repeatedly emphasised in this chapter, the credibility of policy justification lies in its apolitical representation and technical sophistication. Hence, the mathematical models used in surveillance analysis offer an unlikely yet valuable resource for investigating the specific manifestations of the principle of external accountability. By viewing surveillance as an exercise of the politics of economic

methodology and applying the analytical framework developed in this chapter, mathematical models allow us to examine two processes: (i) the reasoning undergone by bureaucratic economists as they build models (specifically how she reconciles trade-offs between precision and accuracy and the accountability issues that result from such methodological choices); and (ii) the representation of state boundaries in mathematical models (specifically the implications for state jurisdiction and accountability). These will be analysed in greater detail in Chapter 7's discussion on IMF and AMRO spillover models.

In the previous section, we developed an analytical framework to clarify how the interplay between the economic and political logics of mathematical modelling construct and maintain the illusion of distance between the technical and the political. The following discussion builds on this by outlining how the construction and maintenance of this fictional gap simultaneously define and displace accountability. This is done through five specific ways that apply to the context of bureaucratic economists working on surveillance, such as those affiliated with the IMF and AMRO.

#### *4.3.2 Mechanisms for definition and displacement of accountability in mathematical models*

To start with, **modelling constraints and boundaries define accountability in economic governance**. Through its consistent application of economic reasoning and representation, mathematical models define accountability by giving its users and the general public the impression that it is able to establish clear causality within specific parameters. As mentioned earlier, the ontological and technical constraints imposed by the use of models are so entrenched that limitations are rarely explicitly disclosed. The process of modelling also requires the depiction of variables as distinct categories, either exogenous or endogenous. Hence, representations of economic activity suggest that the relationship of these variables to economic output can be explained in a straightforward manner.

Accountability is displaced in mathematical models as ontological and technical constraints limit the model's domain of applicability. Verifying the validity of models can only be done within this domain and cannot be judged on any other basis. Julian Reiss underscores this problem in his statement that 'models often have local applicability, even in their intended domain... unfortunately, it is not quite clear what a model's "intended domain" is or what "applicability" means' (Reiss 2013, 124). As the underlying assumptions that determine this narrow domain are not openly discussed, it is difficult to find grounds for disputing a model's validity if these are the only recognised criteria for assessment. In the event that they are disclosed, the economist can justify her model's shortcomings based on the ontological and technical compromises she needed to make to be consistent with the accepted suppositions of mathematical formalism.

As mentioned earlier, the ontological and technical constraints imposed on the modelling process also have repercussions in terms of the representation of the state. The crucial role played by states and bureaucratic economists in setting the boundaries of 'the economy' involves defining what is within and beyond the purview of government control. Consequently, mathematical models are an implicit statement about the jurisdiction of state and non-state actors in terms of managing the economy (Mitchell 1998, 2005). Following the aforementioned notion of 'politics as growth', the definition of the economy through mathematical models allows different states to define the economy to serve different political purposes (e.g., assigning and rejecting accountability as the state sees fit). The technical nature of this representation can be used to dilute suspicion of influence from any political agenda. The state can reinforce the perception of technical expertise to support the veneer of the apolitical allocation of responsibility and blame. Hence, compliance with the rules of mathematical formalism muddles accountability in that **model-based economic policies are only valid in the model's limited domain of**

**applicability, and depend on the state's politically contestable representation of the economy.**

With respect to the state as an international apparatus that governs a geographically-bounded territory, mathematical formalism can also serve to displace accountability in a different way. Whilst the territorial borders of the state and the economy coincide in mathematical models, the actual movement of economic activity cannot be accurately traced in terms of defined state territories. Due to feedback effects and interdependencies across the global economy, it is difficult to make definite claims about the geographical sources of growth and risk. A fuller discussion of spillovers and systemic risk in Chapter 5 will illustrate this point.

As for the role of the bureaucratic economist, it was pointed out earlier that disciplinary and administrative pressures dictate the work and methods of bureaucratic economists. Adherence to mathematical modelling boosts the bureaucratic economists' reputation as an apolitical technical authority. Political neutrality insulates the bureaucratic economist from political accountability, whilst scientific expertise means that the bureaucratic economist is largely answerable only to an audience who also follow the same form of reasoning and representation. Valid critique can only come from within this community so any external debates which do not conform to the same mathematical formalism can be dismissed.

However, in the case of mathematical modelling in economic policy, the invocation of technical expertise to justify the constraints faced in the representation of 'the economy' means that adherence to mathematical formalism can be used to justify the choice to favour precision over accuracy in the modelling process. In other words, rigour in the form of reasoning is valued over rigour in the form of representation. Moreover, whilst reasoning may follow a singular economic logic, this is not the case in terms of representation as it is shaped by multiple political logics. This leads to two implications for the displacement of accountability: **The accepted form of reasoning determines**

**who can hold the bureaucratic economist accountable (in this case, the target audience are fellow economists); the accepted form of representation and its translation into economic policy may vary depending on the audience (which differs in the context of regional compared to global surveillance). Furthermore, both economic and political logics highlight the technicality and neutrality of modelling but do so for different audiences.**

Accountability can also be displaced because of shifting hierarchies of expertise. Whilst an overarching form of reasoning in mathematical formalism may unify the community of economic experts, changes in hierarchies of expertise can create spaces for subtle forms of dissent within the ranks. Bureaucratic economists can use this opportunity to present different model representations of the economy as their respective institutions see fit. However, any political undertones can be minimised as debates still need to be carried out using the same dominant form of reasoning and representation. As mentioned earlier, the shift between the Asian and global financial crises created the room for AMRO to assert itself as an expert authority in global economic governance; nonetheless, this is done to fit internationally-accepted standards for technical expertise that have been established by the IMF. Hence, **even when using the same form of reasoning and representation, economic expertise is underpinned by political and relational knowledge. However, any political or relational tensions can be reduced to methodological disagreements.**

To sum up and relate the discussion on accountability directly to the five links highlighted in this chapter's analytical framework, I propose five ways in which mathematical models define and displace accountability:

- (i) Modelling constraints and boundaries *define accountability* in economic governance.

However, modelling also *displaces accountability* in the following aspects:



- (ii) Model-based economic policies are only valid in the model's limited domain of applicability, and depends on the state's politically contestable representation of the economy;
- (iii) The accepted form of reasoning determines who can hold the bureaucratic economist accountable (in this case, the target audience is fellow economists); the accepted form of representation and its translation into economic policy may vary depending on the audience (which differs in the context of regional compared to global surveillance);
- (iv) Both economic and political logics highlight the technicality and neutrality of modelling, but do so for different audiences;
- (v) Even when using the same form of reasoning and representation, economic expertise is underpinned by political and relational knowledge. However, any political or relational tensions can be reduced to methodological disagreements.

As can be gleaned from the references made thus far to the case of East Asia, these points carry significant weight in understanding the discourse on economic growth in the region and the role of regional surveillance in global economic governance. From the perspective of model-based policy justification, regional surveillance allows policymakers in East Asia to define and represent the sources of and risks to economic growth in their own terms, but in accordance with the parameters set for technical credibility that have been set and accepted as the international standard. At the same time, any discrepancies or weaknesses that may surface in the analysis can be justified as a matter of methodological differences, or as an unavoidable consequence of complying with mathematical formalism.

#### 4.4 Conclusion

The puzzle of the parallel rise of two phenomena—the growing realisation of the dangers of overreliance on mathematical models and the persistent tendency towards mathematical formalism—underscores the importance of analysing these issues in the context of the politics of economic methodology. Lawson argues that most of those who criticise orthodox economics on the basis of opposing substantive claims (usually regarding modelling premises) miss a crucial point:

‘The inevitable consequence is that discussions of the state of the modern discipline remain largely superficial, criticism is mostly misdirected and overly tame, and supposed/proposed alternative approaches or projects...end up, in the main, being essentially more of the same’ (Lawson 2015a, 2).

Judging from the direction post-crisis mathematical modelling is currently taking (as shown in Chapter 3), this observation seems to still hold true. The previous chapter presented a different angle on the existing critique of orthodox economics by making a case for investigating the politics of mathematical modelling. In contrast to previous studies analysing the political consequences of the use of metrics and models in economic policy and other approaches that take the economic and political logics as separate, this chapter presented an analytical framework that demonstrates how these two are mutually constitutive. The discussion engaged with insights from philosophy of science, economic sociology, and IPE literature to illustrate how the interplay between a set of five specific logics results in the creation and preservation of a false dichotomy between the technical and the political. In the context of model-based surveillance analysis, the process of mathematical modelling facilitates the simultaneous definition and displacement of accountability in global economic governance.

Chapter 2 demonstrated how the discourse on economic growth models in East Asia has undergone significant changes in the last few decades yet the framing of the sources of and risks to economic growth continue to be represented in terms of relationships between ostensibly discrete categories, such as state/market, real/financial sectors, and internal/external. There are variations in how these relationships are understood in East Asia when compared to the more dominant accounts offered by IFIs such as the IMF, as discussed in Chapter 2 and examined further in Chapter 7. When these differences are represented in the form of mathematical models, a cursory look gives the impression that surveillance analysis is a strictly technical undertaking; however, a closer examination reveals a political exercise as well. Mathematical modelling entails a specific process of reasoning and representation which imposes constraints on how the economist chooses between which categories to include or exclude, highlight or downplay. As these choices shape how one defines the variables that determine changes in the economic performance of the countries being monitored, the mathematical models used in surveillance are both technical representations of and political statements on economic growth and its sources and consequences.

The remaining chapters in this thesis will expand on the themes developed in the analytical framework. They will focus on various aspects of systemic risk and its analysis in regional and global surveillance to illustrate how mathematical models can serve as a political resource, particularly in the ways it can support goals of securing domestic legitimacy and international credibility. Chapter 5 examines systemic risk models as a special case of post-crisis modelling. In this context, the high degree of methodological complexities, uncertainties, and ambiguities involved in the modelling process widens the space for displacing accountability. In Chapter 6, we investigate the rise of regional surveillance as an illustration of how East Asia is navigating the shifting hierarchies in the community of global economic technocrats. Moreover, the expansion of regional and global surveillance (in the sense that they now employ

a macroprudential frame in their analysis) creates challenges in setting shared parameters for interpreting state boundaries and jurisdictions. Finally, Chapter 7 scrutinises selected IMF and AMRO spillover models to trace how their respective economists negotiate ontological and technical constraints. The discussion sheds light on the politics inherent in the process, and illustrates how the IMF's and AMRO's model-based surveillance analysis defines and displaces accountability in global economic governance.

# CHAPTER 5

## *Modelling Systemic Risk (or How to Measure the Immeasurable)*

---

### 5.1 Introduction

As it did in the case of mathematical modelling, the global financial crisis also prompted a rethinking of the monitoring and supervision of systemic linkages. This resulted in a deluge of institutional and regulatory reforms, with different measures all broadly contributing to the infrastructure deemed necessary to guard against the build-up of systemic risk and secure global financial stability. In the years immediately following the crisis, the G-20 spearheaded various reform initiatives and tasked international bodies such as the IMF and the FSB to take the lead with implementation (G-20 2009). As the immediate response to the crisis was understandably reactive, reform measures concentrated on the dangers of excessive risk taking and leverage by financial institutions. In response, the G-20 leaders committed to building a stronger, more globally consistent supervisory and regulatory framework for the financial sector. Five key principles were identified to guide reform efforts: (i) strengthen transparency and accountability; (ii) enhance sound regulation; (iv) promote integrity in financial markets; (v) reinforce international cooperation; and (vi) reform the financial architecture (G-20 2008). Specific items in the action plan include those relating to capital and liquidity standards; regulation of credit rating agencies, hedge funds, and OTC derivatives; and monitoring of systemically important financial institutions.

Whilst it can be argued that there was wide consensus on the importance of these reform proposals, there were concerns that the plans were mostly applicable in advanced countries and held little relevance to the particular circumstances of emerging economies in East Asia. As the concerns of region put

heavier emphasis on economic growth and stability, the lessons that policymakers in East Asia drew from the impact of the 2007 crisis related to the need to diversify and rebalance sources of economic growth and the need to strengthen tools to ensure financial and macroeconomic stability (Arner and Park 2010).

The discussion in Chapter 2 on the discourse on economic growth in East Asia is just one reflection of how various countries subscribe to different conceptions of what constitutes economic growth and risk. However, the centrality of interdependencies and feedback effects in global systemic risk call these differences into question. More recently, IMF Managing Director Christine Lagarde called for a ‘new multilateralism’, a movement towards ‘a new global partnership for growth’ that is underpinned by ‘mutual responsibilities’ shared by emerging and advanced countries alike (Lagarde 2016). The 2007 crisis led to a deeper appreciation of the extent of systemic risk in the global financial and macroeconomic system, and these developments have created new pressures on surveillance and the tools and mechanisms used in the process to apply the principle of external accountability. As the infrastructure for global economic governance relies heavily on the creation and expansion of technocratic measures for controlling systemic risk (Erturk et al. 2011), systemic risk models form an important part of this infrastructure as a core component of surveillance analysis.

However, Chapter 3 showed us that the crisis further entrenched the dominance of mathematical modelling, thereby perpetuating problems with how surveillance seeks to hold countries accountable for their contribution to this ‘new global partnership for growth’. This is a result of the continued emphasis on the universal economic logic entrenched in mathematical models, even as the multiplicity of logics amplify with the growing complexities and uncertainties in global economic governance. The methodological complexities and uncertainties referred to in Chapters 3 and 4 also apply in the case of systemic risk; however, the challenges faced by systemic risk modelling are not just a matter of

complexity and uncertainty. Given the transboundary nature of systemic risk and the emergence of overlapping regional and global surveillance frameworks, the ambiguity inherent in systemic risk needs to be unpacked as well.

Chapter 5 begins the second part of this thesis as it explores the use of mathematical models in specific policy areas, namely systemic risk and surveillance. This chapter builds on the themes raised in the previous chapter as it examines how systemic risk modelling also falls into the same process of creating and maintaining a false dichotomy between the technical and the political. Section 5.2 covers the definitions (or lack thereof) and dimensions of systemic risk. These dimensions—namely complexity, uncertainty, and ambiguity—carry important implications in the technical representation of systemic risk. Section 5.3 analyses these three dimensions in terms of its strategic uses for political manoeuvring. Section 5.4 focuses on the transboundary nature of systemic risk and its implications for external accountability. Key points from Chapter 4 are applied to systemic risk to illustrate how the complexity, uncertainty, and ambiguity inherent in systemic risk facilitate the displacement of accountability in global economic governance.

## **5.2 Defining systemic risk**

General application of the term ‘systemic risk’ underscores the degree to which it is entrenched in a wide network of social processes and is a product of processes of modernisation and globalisation. This can be seen in a wide range of areas including pandemics, pollution, and even supply chains (Goldin and Mariathasan 2014). Whereas simple or idiosyncratic risk is one in which the cause is clear and the potential negative repercussions are easily recognisable because it is not affected by feedback loops (for instance, potential or ongoing events have no bearing), examining systemic risk requires focusing on interdependencies. This includes links between individuals, institutions, sectors, or areas which may otherwise seem unrelated (Renn, Klinke, and Asselt 2011).

Following this, it is understandable how arriving at a single, precise definition of systemic risk in the financial and macroeconomic context has proven to be difficult. It is more common to avoid defining systemic risk per se and focus on its effects instead. Technical definitions are further complicated by the complexities, uncertainties, and ambiguities inherent in systemic risk. This section examines how definitions of systemic risk are both technical and political constructions.

#### *5.2.1 Definitions and dimensions of systemic risk*

Scholars may have lamented the absence of the term ‘systemic risk’ in academic literature when the global financial crisis first hit but that is certainly no longer the case today (D. Colander et al. 2009). An earlier attempt to define systemic risk depicts it as ‘breakdowns in an entire system, as opposed to breakdowns in individual parts or components, and are evidenced by co-movements amongst most or all of the parts’ (Kaufman and Scott 2003, cited in Goldin and Vogel 2010, 5). This conceptualisation looks at systemic risk as a shock as its main components are identified in these terms:

- (i) “macroshock” triggered when relatively modest tipping points or regime shifts hit their threshold and produce large, cascading failures on most or all of the system;
- (ii) shock diffusion through the network via contagion (transmission, feedback, and amplification of risk); and
- (iii) “common shock”, which is not the result of direct causation, but is evidenced by indirect impacts of systemic risk’ (Goldin and Vogel 2010).

After 2007, systemic risk was no longer regarded in such terms as the crisis revealed its insidious nature. The crisis also fuelled the rising prominence of the concept of systemic risk in both academic and policy agendas. Whilst this may be viewed as a welcome step, it is also important to be wary of the profusion of publications, conferences, and the like dedicated to the subject. Underneath all



the calls for a broader view of financial and macroeconomic risk is a lingering vagueness about what it is we should be looking for. The IMF itself admits:

“‘Systemic risk’ is a term that is widely used, but it is difficult to define and quantify. Indeed it is often viewed as a phenomenon that is there ‘when we see it’ ... Similarly, a systemic episode may simply be seen as an extremely acute case of financial instability, even though the degree and severity of financial stress has proven difficult, if not impossible, to measure’ (IMF 2009, 113).

Claudio Borio, head of the Monetary and Economic Department of BIS, has stated that ‘Given our current knowledge, it is not realistic to expect a single measure of systemic risk to cater to all purposes; in fact it is actually dangerous to do so’ (Borio 2010, 7). A study released by the US Department of Treasury’s Office of Financial Research reviews 31 different approaches to measuring systemic risk and concludes that there will never be one single accurate indicator (Bisias et al. 2012). However, institutional definitions are still needed for operational reasons. For example, a joint report by the IMF, BIS, and FSB describe systemic risk as the ‘disruption to the flow of finance services that is (i) caused by an impairment of all or parts of the financial system; and (ii) has the potential to have serious negative consequences for the real economy’ (IMF, BIS, and FSB 2009, 2). Others define systemic risk in terms of the similarly nebulous notion of financial (in)stability, as done by the IMF in the quote cited above. Likewise, a separate report by the BIS Committee of the Global Financial System remarks that there is no widespread agreement on what financial stability should look like. The committee points out that ‘the notion of financial stability is often discussed in terms of the concept of systemic risk and its sources, for which again there is no consensus definition’ (Committee on the Global Financial System 2010, 21).

Such circuitous definitions are further complicated by the high degree of complexity, uncertainty, and ambiguity in systemic risk, or what Ortwin Renn, Andreas Klinke, and Marjolein van Asselt (2011) call the dimensions of systemic

risk. Complexity here is understood as the challenge of specifying and calculating causal links between various actors (both actual and potential) and specific outcomes. In the case of simple risks, the events between a cause and an effect can be explained by a clear and exact functional relationship; estimating probabilities can be done effectively with statistical models. However, the complexity inherent in systemic risk means that simple models cannot adequately capture factors such as feedback loops, amplification mechanisms, lags between cause and effect, and intervening variables (Renn, Klinke, and Asselt 2011). One channel through which feedback loops and amplification mechanisms operate in the financial system is balance sheet contagion. The endogeneity of systemic risk also means that when an individual actor in the financial system responds to a particular event, this may trigger shifts in the behaviour of other actors and their actions may in turn affect the market through a network of feedback loops and amplification mechanisms. In such instances, the event itself is not as important as it is the feedback loops and amplification mechanisms which create links between the behaviour of market participants, which can then exacerbate a single event into a full-blown crisis (Systemic Risk Centre 2013a).

As such, designing more sophisticated models to capture systemic risk may not suffice as it is inevitable that modelling cause-and-effect links will lead to some degree of reduction of these relationships. Technical risk assessment will thus always be selective and partial as it is based on uncertain assumptions and calculations—an unavoidable consequence if it is accepted that models essentially ‘focus on one or two causal or conditioning factors, exclude everything else, and hope to understand how just these aspects of reality work and interact’ (Solow 1997, quoted in Mäki 2002, 11). Uncertainty in this context relates to the difficulty of accurately quantifying the likelihood of systemic risk and identifying the potential consequences of its unintended effects due to the lack and limitations of technical knowledge (Renn, Klinke, and Asselt 2011).

Ambiguity also comes into play given the existence of multiple, legitimate perspectives in the assessment of systemic risk. Certain risks may be deemed acceptable if they are low enough, making additional regulations unnecessary or perhaps even cumbersome. Others may be considered tolerable if the perceived benefits of undertaking such risks outweigh its costs. However, actors respond to these risks in various ways. If complexity and uncertainty make accurate technical assessments of systemic risk problematic, ambiguity makes it contentious. Conflicting interpretations of systemic risk arise when different yet valid viewpoints surface on the existence or possibility of harmful effects from systemic risk and whether or not such risks are tolerable or acceptable. Ambiguity also results when opinions clash on the importance, implications, and application of available risk information and the range of policies under consideration (Renn, Klinke, and Asselt 2011). This has important implications in terms of global economic governance, as Jacqueline Best (2005) notes that its evolution has been significantly shaped by the management and accommodation of such ambiguities. Best analyses the evolution of global financial and macroeconomic governance through the management and accommodation of political-economic ambiguities. Manuela Moschella (2010) makes a relevant point as she finds that IMF staff strategically deploy ambiguous knowledge to generate support within the Executive Board. However, these studies do not account for the negotiation of ambiguities between regional and global institutions tasked to ensure financial and macroeconomic stability. This issue is crucial in the context of transboundary risk governance, which will be covered later in this chapter.

### *5.2.2 Systemic risk as a technical and political construction*

The work of Renn, Klinke, and van Asselt put more emphasis on approaching systemic risk as a social construction, going so far as to state that 'risks are not real phenomena but mental constructions resulting from how people perceive uncertain phenomena and how their interpretations and responses are determined by social, political, economic, and cultural contexts,

and judgments' (Renn, Klinke, and Asselt 2011, 237). Evaluating systemic risk becomes a potentially contentious process as determining what is acceptable and tolerable also involves a discussion on the distribution of the costs and benefits of such risks.

Moreover, it requires reconciling perceptions of what counts as fair or unjust allocations between actors whose links to the production of systemic risk and its effects are not clear to begin with. The issue of fair distribution of costs and benefits is particularly difficult in the case of systemic risk as evidence suggests that greater financial integration decreases individual risk whilst increasing the severity and damage of systemic risk (Goldin and Vogel 2010). Renn, Klinke, and van Asselt argue that how these judgments are rationalised largely hinge on worldviews and values and driven by shared ethical and ontological positions. In light of this and the high degree of complexity, uncertainty, and ambiguity in systemic risk, the authors stress the inadequacy of technical evidence in analysing systemic risk.

In contrast to Renn, Klinke, and van Asselt, Ulrich Beck sees risks as guided by both scientific and social rationality—its construction relies not just on social expectations and value judgments defining 'how we want to live' (Beck 1992, 58) but on technical expertise as well. Defining risk also involves debates over the political consequences that come with its social construction and the links it creates to determine causality and responsibility. In his discussion of the risks of health and safety hazards, Beck stresses:

'In the fixing of acceptable levels, the numbers of people afflicted as patients or victims increase or decrease. By drawing lines of causation, companies and occupations are caught in the firing line of accusation. Politicians and politics release pressure by holding individuals and not systems responsible for the accidents and damage' (Beck 1992, 46).

On a global scale, Beck asserts that the more uncertainty there is regarding a particular risk, the more important cultural perceptions become. He claims that

‘the same risk becomes “real” in different ways from the perspective of different countries and cultures—and is assessed differently’ (Beck 2009, 12). However, whilst risks are social and political constructions, their existence is still justified in terms of technical knowledge. These technical justifications are ‘products of struggles of conflicts over definitions within the context of specific relations of definitional power’ (Beck 1997, 30). Conflicts over risk definitions are driven by specific relations of power which reflect how multiple definitions frame ‘competing rationality claims of different actors in struggles for national and international recognition’ (Beck 1997, 30). Systemic risk analysis is based on models which are built on these relations of definition. At the same time, these relations of definition foster a sense of ‘organised irresponsibility’ (Beck 1997, 2009). Institutions recognise the rise in potential and actual risks and acknowledge the need to address them; however, they are caught in (and create) a dense framework for assigning liability, accountability, and responsibility for evidence provision. This allows institutions to reject the existence of certain risks, obscure their causes, and deny compensation or any ability to control.

The aforementioned points on technical constructions of risk being subject to ‘specific relations of definitional power’ are analogous to some of the key themes presented in Chapter 4. As mentioned in Chapter 1, in Beck’s framework, his concerns about the technical construction of risk revolve around questions such as:

‘What kind of knowledge or lack of knowledge of the causes, dimensions, actors, and so on is involved? Who lays down the causal norms... which decide then a cause-effect relation is to be recognised?... What counts as “proof” in a world where knowledge and lack of knowledge of risks are inextricably fused and all knowledge is contested and probabilistic?’ (Beck 2009, 32).

Likewise, the authority and acceptance of systemic risk analysis is grounded in its representation as a mathematical model. This is especially true when systemic risk analysis is conducted for the purpose of surveillance, which

will be focus of discussions in Chapter 7. This is due to surveillance's heavy emphasis on providing technical and apolitical assessments of countries' economic performance. However, in contrast to Beck, this thesis does not treat the technical and political aspects of risk definition as separate processes. The representation of systemic risk does not occur in a technical vacuum as the expertise required to carry out such analysis is based on political and relational knowledge, as argued in Chapter 4. As already mentioned in previous chapters, we can observe how these dynamics play out in the debates on economic growth in East Asia.

However, systemic risk modelling poses an additional challenge. The process of modelling entails minimising the very feature that makes systemic risk 'systemic'—the extent to which it is embedded in a wide network of social processes. The emphasis on monitoring interdependencies and tracing links between actors, sectors, or areas which may otherwise appear unrelated mean that the discrete categories traditionally used in mathematical models—including the geographical and sectoral categories analysed in Chapter 2—are misleading. Yet as policy justification in global economic governance continues to put a premium on model-based analysis, such issues have yet to lead to a critical questioning of the proliferation of systemic risk models in institutions such as the IMF and AMRO.

### **5.3 Manoeuvring through systemic risk modelling**

Granted, some have argued that the aforementioned problems concerning systemic risk modelling are increasingly recognised even by mainstream economists. Chapter 6 will include a discussion of related developments in the analysis of macroprudential policy. Whilst ongoing efforts to manage systemic risk are still largely restrained and provisional, there is now greater acknowledgement of macro-level factors and recognition of complex linkages in calculations. However, there are other persistent issues.

Aside from the persistent portrayal of systemic risk as an exogenous shock, it is also crucial to recognise the distinction between perceived and actual risk. Most existing systemic risk models account for perceived risk but overlook actual risk—the hidden product of feedback loops and linkages between actors. Some examples in the context of macroprudential policy will be included in the next chapter. When the economy is performing well, perceived risk is low and declining but actual risk is rising due to growing asset bubbles. Once a crisis hits and the bubble bursts, volatility and perceived risk rises but actual risk declines as prices stabilise and return to its normal levels. Using these models to guide financial regulatory reform is also problematic as it assumes that there is one verifiable and accurate model and that policymakers should be concerned about conflicting risk assessments for the same assets. Scholars working at the London School of Economics' Systemic Risk Centre argue that model homogeneity is not necessarily a good thing, especially since it could facilitate excessive procyclicality. However, whilst model homogeneity is discouraged, coordinating policy responses is encouraged as different policies can potentially act as amplification channels when policy objectives are inconsistent with and impact each other in unforeseen ways (Systemic Risk Centre 2015).

Most post-crisis measures dealing with systemic risk still operate within the same rationality of mathematical formalism; hence, concerns similar to those raised in Chapter 4 regarding the capacity of mathematical models for displacing accountability persist. Regardless of the fact that most systemic risk models fail to account for the issues listed in the previous paragraph, regulators continue to favour such models precisely because they do not account for the subjective and currently unconfirmed channels through which endogenous risk develops (Systemic Risk Centre 2015). This supports the argument made in Chapter 3 about the unwavering preference for precision over accuracy in economic policy analysis. Despite the fact that the global financial crisis laid bare the fallibility of risk models, it appears that the warnings will again remain unheeded. Similar to what was observed after the global financial crisis, the propensity of regulators

and financial institutions to exaggerate the reliability of systemic risk models and downplay their limitations has yet to taper off.

Chapter 7 will delve deeper into how these mechanics operate in specific spillover models used by the IMF, ADB, and AMRO in their surveillance analyses. Before we turn to this, it is worth noting the Systemic Risk Centre's observation that regulators deliberately continue using systemic risk models specifically because of their shortcomings, whilst simultaneously concealing these models' flaws. Whilst the motivations behind regulators' use of models is beyond the purview of this thesis, their strategic application of the limitations of systemic risk models shed light on how such models can be useful for political manoeuvring.

### *5.3.1 Navigating complexity, uncertainty, and ambiguity through strategic means*

There is a wide range of literature that look into how complexity, uncertainty, and ambiguity can be used for strategic purposes, although not all directly addressing the issue of systemic risk per se. Nonetheless, some of the points drawn from these studies offer insights into how it can be applied in the case of systemic risk.

Post-crisis commentary invoked complexity in two ways. Firstly, the term was used as a target of blame as it was portrayed as a causal factor that led to the crisis. Brett Christophers (2009) illustrated how assigning responsibility to complexity (e.g., complexity of financial markets and instruments) shifts the blame to an abstract property of an object, instead of holding the actors and institutions responsible. Applying 'complexity' in this manner also overlooks how complexity also operates through spaces, relations, and processes.

Secondly, the use of 'complexity' in describing the crisis also suggests a sense of futility and disempowerment. From the side of the general public, inadequate comprehension is viewed as both a cause of the crisis and a reason for non-experts to be excluded from the dialogue. At the same time, complexity is also used as an excuse to absolve actors from genuinely understanding the



workings of the crisis (Christophers 2009). In a similar vein, Giselle Datz (2013) argues that the prominence of these themes in policy and reform debates allows policymakers to use these as qualifiers to give the impression that it was difficult to understand and predict the dynamics of the financial sector, thus making regulation problematic. This overemphasis on complexity created 'a widespread justification for failure as neither public nor private actors could effectively correct disparities they did not see... because they were too difficult to understand' (Datz 2013, 462).

Other scholars have also observed how the frequent and prominent use of the terms 'complexity' and 'uncertainty' can be manipulated to justify both the failure of and the increased reliance on risk models. James Brassett and Chris Holmes (2016) make a similar claim in that they see the invocation of uncertainty as a way to minimise the room to question the root causes, power dynamics, and structural inequalities driving movements in financial markets and the appropriate policy measures to regulate them. Moreover, complexity and uncertainty also serve to fuel the tendency towards mathematical formalism, instead of underscoring the need to be more cautious about the use of such models. In this case, complexity and uncertainty widens the prospects for relying on 'augmented, rather than diminished, powers of prediction, powers that are oriented toward a defence, rather than a transformation, of existing financial market practices' (Brassett and Holmes 2016, 380).

Critics may have pointed out that the mathematical precision of risk models conceals the flaws of models and the assumptions they are built on (D. Colander et al. 2009). Others have also argued that the representation of financial risk in mathematical abstract terms leads users of such models to act with a sense of false confidence that quantifying risk makes it predictable and manageable (De Goede 2004). However, these critiques did not weaken the demand for risk models. Instead, complexity and uncertainty were co-opted into the mathematical formalism project, treated not as fundamental limitations to knowledge but opportunities to push the boundaries of technical interventions

in the financial sector. For instance, key figures in the Bank of England (including Chief Economist Andrew Haldane [A. G. Haldane and May 2011]) may have advocated for an overhaul of theoretical models and tools for financial regulation after the crisis but the futility of prediction was not accepted as a fundamental limitation to knowledge and regulation. Rather, it was used to bolster calls to adapt and apply complex systems theory (as used in ecology) in financial regulation. The embrace of complex systems theory, similar to the rise of complexity sciences (Tyfield 2014), ultimately serves to reinforce the status quo as it supports the traditionally held notion that more sophisticated quantification translates to better predictability and manageability. As a more overt methodological issue, complexity also implies that predictions are based on conditions that are not fully specified, thus it is not automatic that an accurate prediction confirms the validity of a model, nor does an incorrect prediction completely invalidate a model if complexity is assumed (Grunberg 1978).

As for ambiguity, the presence of multiple, legitimate views on the assessment of systemic risk have important institutional repercussions, especially in light of its transboundary nature. For instance, Best's (2012) analysis of the World Bank governance agenda and IMF structural adjustment programmes highlights how ambiguities in policies and institutional practices endured, were exploited, and valued as a tool for working around imbalances in power relations. This is a tricky line to tread in institutions such as the World Bank and the IMF where rationalisation and standardisation are generally advocated as policy prescriptions. Nonetheless, Best finds that World Bank and IMF staff are aware of such ambiguities and not only tolerated them but also used the policy and institutional ambiguities to expand their operational reach and go beyond their core mandate and areas of expertise. Ambiguity creates space for 'creative mis-recognitions' (Best 2012, 93), making policy recommendations susceptible to failure as they can be translated and implemented in unforeseen ways.

James Mahoney and Kathleen Thelen (2010) make a related point in their discussion of ambiguities but focus more on issues concerning compliance and its impact on institutional change. As ambiguities are prevalent in the implementation and enforcement of institutional rules, these fissures create opportunities for institutional change as actors apply existing rules in different ways. Ambiguities in institutions become 'distributional instruments laden with power implications' (Mahoney and Thelen 2010, 8). Hence, institutional ambiguities can become an important driver of changes in the balance of power. Given the current global governance structure of multiple institutions with converging thematic and geographical jurisdictions, such an understanding of institutional ambiguity underscores the possibility that actors who are in a relatively weaker position in one institution may use their more favourable status in other institutions to push for change. Alternative institutions may thus be seen as initiatives to push particular interpretations of the disputed and ambiguous rules of another institution.

As outlined above, the complexities, uncertainties, and ambiguities surrounding systemic risk offer a wide range of possibilities for it to be marshalled as a political resource. However, the representation of systemic risk in a model conceals any methodological complexities, uncertainties, and ambiguities as it is obliged to cohere with the universal economic logic embedded in mathematical formalism. The issues concerning ambiguities are of particular interest in this thesis in light of the transboundary nature of systemic risk and its repercussions for regional and global surveillance.

#### **5.4 Transboundary nature of systemic risk and implications for shared risk governance**

As raised in the previous section, the ambiguities in systemic risk analysis suggest that alternative institutions can serve as sites for contesting disputed interpretations put forward by another institution. This creates a challenge for

shared risk governance as it involves juggling different sets of conflicting and compatible interests, done with the intention of managing risks to promote public welfare. Robert L. Heath and Katherine McComas argue that risk infrastructures are essentially power structures as shared risk governance is a process wherein decisions are made about whose interests are supported and whose interests are or can be compromised. Hence, the construction of risk definitions under shared risk governance also revolve around actors' individual and collective identities and the relationships between them (Heath and McComas 2015).

Against this backdrop, some scholars underscore the hierarchical nature of such relationships. In the context of global security risks, William Clapton notes a paradox in the expectations of a cosmopolitan turn in the emerging 'world risk society' as he observes a new hierarchical relationship in the global order in the context of a new 'social logic of risk' (Clapton 2014). He asserts that '[t]he preservation of...security in the face of a range of de-bounded risks' (Clapton 2014, 39) was used to justify the West's self-appointment of the role of global risk manager as it intervenes and reshapes the institutions of failed states where security risks might originate. Although Clapton applies this concept in the case of terrorism, parallels can be drawn in the case of global financial governance as IFIs such as the IMF perceive the growing dangers of systemic risk as a valid reason to widen and deepen the scope of its surveillance operations. This supports Popke's argument regarding the Fund's discursive scripting of 'developing' or 'emerging' economies as spaces requiring disciplinary intervention (Popke 1994).

However, the growing importance of systemic risk and the rise of regional institutions such as AMRO suggest that such statements need to be qualified in light of the developments after the global financial crisis. In contrast to previous financial crises, the emphasis on systemic risk now puts advanced economies under the surveillance radar as potentially sources of risk. Whilst hierarchical relationships are certainly still very much embedded in the architecture for

global economic governance, it is also important to shed light on how regional institutions such as AMRO shape, and are shaped by, their participation in the process.

In the context of this thesis' analysis of regional and global surveillance, the representation of the state through 'the economy' is key to understanding the dynamics of transboundary risk governance. With the existence of multiple overlapping surveillance platforms, the possibility of having diverging assessment of the sources of and risks to global stability is partially determined by spatial representations and the demarcation of regional vs. global space. As raised in Chapter 1, tensions over definitions of risk are also driven by conflicts over representation of risk and the geographical boundaries and policy implications that derive from such representations. Hameiri refers to this as the politics of risk management that entails 'a unique form of territorial politics concerned with struggles over the scope of risk and the reach of political discussions' (Hameiri 2011, 383).

East Asia's response to early G-20 reform proposals offer a glimpse of how these tensions can play out in the region. Following the 2007 crisis, financial sector reform in East Asia was also driven by G-20 guidelines, but there were concerns amongst developing countries that the issues highlighted in G-20 action plans were more relevant for advanced countries with mature financial markets (Arner and Park 2010). Even amongst more developed East Asian economies, financial markets are still relatively unsophisticated. Developing economies face a different set of conceptual and practical challenges with their nascent financial systems. In their case, risks largely emanate from their underdeveloped financial systems rather than from complex financial instruments and innovations. Analysts argue that reform efforts to address this should put more emphasis on strengthening banking systems and facilitating financial inclusion (Prasad 2010), which the AEC framework for financial sector reform underscores.

In East Asia, the main challenge is underdeveloped domestic and regional capital markets. In addition to the availability of strong equity and debt capital

markets, liquidity and capital provision will be increasingly important to the region's continued growth. In this regard, the call for stronger global capital and liquidity standards will have significant implications for the region. Banks in many East Asian economies, including China, actually satisfy or even exceed the higher capital requirements of the new Basel III accord. However, for others, the higher capital requirements and risk weighting and measurement methodology may aggravate deleveraging and increase the costs of global banks operating in East Asian economies, thereby reducing credit and financial market liquidity (FSB 2012; Watanagase 2012). Furthermore, there are differences in opinion over the levels and form of capital, the nature of liquidity arrangements, and the level of leverage limitations (Arner and Park 2010). Although AMRO surveillance does not cover these issues, the existence of an alternative institution gives East Asian countries room to manoeuvre should they wish to challenge global capital and liquidity standards.

However, any attempts to distinguish what counts as regional risks in contrast to global ones are constrained by adherence to the principle of external accountability. In other words, in the event East Asian countries do opt to push for alternative capital and liquidity standards, they will be expected to justify their decision such that the international community is convinced that this departure from the prescribed standards will not harm global stability. As argued in Chapters 3 and 4, the legitimacy of economic policy largely hinges on its technical and apolitical representation, which normally takes the form of mathematical models. Yet as discussed in the previous section, the methodological complexities and uncertainties of systemic risk mean that attempts to capture it in mathematical models will once again lead to the creation of 'artificial realities'.

Scientific discourse is a central component of transboundary risk governance. As systemic risk transcends territorial boundaries, the state finds itself negotiating the conditions and methods for regulation in 'networks of power' (Lidskog, Soneryd, and Uggla 2010) including state and non-state actors.

These players jockey to influence the discursive framework in which regulations are designed and implemented. When differences emerge, the use of scientific discourse can potentially be an effective mediator. With such a reading, mathematical models can be seen to foster ‘cognitive stabilisation...[which] could be used to counterbalance political destabilisation’ (Lidskog, Soneryd, and Uggla 2010, 8). A similar claim is made by Michelle Everson and Ellen Vos as they state:

‘Maintenance of the integrity of scientific discourse is a vital component within risk governance regimes. Scientific discourse is a universal discourse that creates objective values which may be tested and which in turn may be used to test the validity of claims of other political, social, ethical discourses; above all, science may be used to unveil hidden motivations’ (Vos and Everson 2009, 12).

Both sets of authors concede that this is a highly contingent process; it should also be borne in mind that they do not apply their analysis to the particular context of surveillance. Nonetheless, their respective approaches still take the scientific and the political as two separate processes, an assertion that was questioned in Chapters 3 and 4. Implementing strategies such as enhancing public participation and stakeholder involvement (as proposed in Lidskog et al. 2009)—whilst obviously not harmful in themselves—gives the mistaken impression that the scientific and the political can be disentangled. Given the modelling process outlined in the last chapter, the neutrality of scientific discourse in surveillance analysis should not be taken as an automatic given. Hence, when such technical representations are used as the basis for policy justification and to demonstrate commitment to external accountability, the mutually reinforcing links between the technical and the political compromises the objectivity of surveillance analysis. The capacity of scientific discourse to facilitate cognitive stabilisation in the shared governance of transboundary systemic risk is more limited than Lidskog, Everson and Vos portray it to be.

As for accountability in the governance of global systemic risk, the methodological complexities and uncertainties outlined in the previous section suggest such issues can be used to legitimise the use and expansion of systemic risk models. At the same time, invoking complexities and uncertainties provide a strategic cover for systemic risk models' limited applicability.

In terms of ambiguity, the acknowledgement of multiple, legitimate perspectives in the assessment of systemic risk—even within the dominant institutions in global economic governance such as the IMF and the BIS—makes it easier for alternative institutions such as the AMRO to take advantage of the conceptual fluidity of systemic risk and financial stability and use this to assert the validity of its own risk assessment. Whilst the expertise which led to the model's construction is embedded in political and relational knowledge, the technical representation of systemic risk analysis in the form of mathematical models lends it an apolitical veneer. Any disagreements which may ensue can be dismissed as mere technical differences, issues which are difficult (if not impossible) to completely resolve given the methodological complexities and uncertainties of systemic risk. Hence, the complexity, uncertainty, and ambiguity inherent in systemic risk facilitate the displacement of accountability in global economic governance.

## **5.5 Conclusion**

As the essential feature defining systemic risk is its entrenchment in a wide network of social, economic, and political processes, it is understandable that academics and policymakers alike have found it difficult to capture systemic risk as a distinct concept. This chapter explored the implications of the tensions surrounding the definition of systemic risk, particularly in light of the repercussions in transboundary risk governance and the overlapping domains of regional and global surveillance.



Early efforts to define systemic risk resorted to vague and circuitous conceptualisations, often relating to financial stability or its absence. Moreover, the complexities, uncertainties, and ambiguities intrinsic to systemic risk create a wide range of problems in attempts to exert technical control over systemic risk. In Chapter 3, it was pointed out that the rules of mathematical formalism require the representation of 'the economy' as a closed system. Doing so in the case of systemic risk modelling effectively minimises the very nature of systemic risk. Nonetheless, this problem has not hindered the use of systemic risk models in global economic governance. If anything, the complexities, uncertainties, and ambiguities of systemic risk has led to the proliferation of more models (as will be demonstrated in Chapter 7). The dimensions of systemic risk also offer a long list of possibilities for political manoeuvring; its transboundary nature and the significance of territorial politics in representations of risk widens the space even further.

The next chapter expands on these issues in the context of the expansion of regional and global surveillance. As one of the main tools for monitoring and mitigating systemic risk, Chapter 6 also analyses developments in macroprudential policies and the methodological complexities and uncertainties that plague its progress and potential.

# CHAPTER 6

## ***Multilateral Surveillance and Macprudential Policy: Managing Internal Stability and External Spillovers***

---

### **6.1 Introduction**

The global economic governance landscape has changed drastically since efforts towards multilateral surveillance first began to take shape in the 1960s, yet commitment to the practice of surveillance has not wavered. The IMF is mandated to promote the stability of the international monetary system and keep track of the financial and macroeconomic policies of its 189 member countries. By signing up to join the IMF, each member country ‘accepts the obligation to subject its economic and financial policies to the scrutiny of the international community’ (IMF 2018b). As such, the Fund is in a unique position to monitor global issues that are a shared concern for its member countries, including domestic and cross-border vulnerabilities that could trigger systemic disruptions. However, post-crisis evaluations of IMF surveillance found that the Fund failed to detect the build-up of systemic risk and warn its members of growing vulnerabilities (IEO 2011b). The Fund moved quickly to address these shortcomings by emphasising the need for deeper analysis of the linkages between sectors (both within and across countries) and spillovers from cross-border transmission of shocks (IMF 2016b).

However, as discussed in Chapter 5, systemic risk analysis is ridden with complexities, uncertainties, and ambiguities. Since systemic risk cannot be captured by direct causal links, systemic risk models can aggravate difficulties in terms of how surveillance seeks to hold countries accountable to the international community for the external effects of their domestic policies. As systemic risk analysis moves to the top of the post-crisis surveillance agenda, the

complications of accurately tracing the transmission of systemic risk create problems for transboundary risk governance and external accountability.

In light of the new pressures created by systemic risk on post-crisis global economic governance, this chapter examines the recent expansion in regional and global surveillance in terms of how the IMF and AMRO are applying the principle of external accountability in their respective operations. As an important tool for monitoring systemic risk and promoting global stability, Chapter 6 also analyses developments in macroprudential policy analysis. Methodological complexities, uncertainties, and ambiguities plague macroprudential policies in ways similar to the previous chapter's discussion on systemic risk. As regional surveillance offers an alternative platform for the analysis of methodologically-inconclusive macroprudential policies, it also offers an alternative assessment which can be used to justify (or deny) the external impact of East Asian countries' internal policies.

This argument is developed as follows: Section 6.2 reviews the historical evolution of IMF surveillance through the lens of external accountability. This principle is also used to investigate the divergence between IMF surveillance in theory and in practice. Section 6.3 traces the recent development of regional surveillance in East Asia through external accountability but as a process driven by different motivations, specifically domestic legitimacy and international credibility. Section 6.4 reviews the ongoing work on macroprudential policy and its pervading methodological complexities and uncertainties. The conclusion synthesises this chapter's findings by examining how the overlapping regional and global surveillance frameworks widen the space for political manoeuvring, thus facilitating the displacement of accountability in global economic governance.

## **6.2 Multilateral surveillance as a necessary measure towards global financial stability**

As raised earlier in this thesis, the conduct of global surveillance (i.e., multilateral surveillance as conducted by the IMF) is described as the ‘analysis of, scrutiny over, and advice concerning... countries’ economic situation, policies, and prospects...for the benefit both of the international community as a whole and of individual member states’ (Crow, Arriazu, and Thygesen 1999, 17). Surveillance evolved through the years to adapt to changing views of how the global economy operates and how national priorities and responsibilities respond in the process. This section gives an overview of the historical background of IMF surveillance and the introduction of the 2007 Decision on Bilateral Surveillance and the 2012 Integrated Surveillance Decision in the wake of the global financial crisis. As the scope of IMF surveillance widens without a corresponding expansion in the legal obligations of the Fund’s member countries, the section also examines the discrepancy between IMF surveillance in theory and in practice. The discussion emphasises the importance of the Fund’s role in the development of accepted norms and standards for participation in the global economic system. Whilst IMF surveillance has also fallen short in this area, the Fund has succeeded in sustaining member countries’ commitment to the principle of external accountability.

### *6.2.1 Expanding scope of IMF surveillance through the years*

Whilst the practice of monitoring international capital flows precedes the founding of the Bretton Woods institutions and dates back to the League of Nations, the underlying rationale guiding the conduct of multilateral surveillance today was largely shaped within the IMF. The Fund was founded in 1945 but it was only in the 1960s<sup>26</sup> when the concept of an ‘international monetary system’

---

<sup>26</sup> Parallel to these developments, the Organisation for Economic Co-operation and Development set up a study group called the Working Party Three (comprised of the same members as the G-10) with the goal of analysing the impact of monetary and fiscal measures on international payments. It was eventually relegated to the periphery in the late 1960s (James 1995).

took form with the creation of the General Arrangements to Borrow by ten members<sup>27</sup> of the IMF in 1962. The group agreed to ‘undertake a thorough examination of the outlook for the functioning of the international monetary system and of its probable future needs for liquidity’ (James 1995, 767). The term ‘multilateral surveillance’ was first used in this context and was defined as an assessment of ‘the various means of financing surpluses and deficits’ in order to develop ‘a common approach to international monetary matters’ (James 1995, 767). With the membership of the Group of 10 (G-10) dominated by Europeans, the United States sought to downplay the importance of the group. Its officials took action to limit the list of appropriate instruments of economic policy covered by the G-10 by insisting that exchange rate adjustments should not be used as a tool in resolving balance of payments issues.

The outbreak of currency crises in the late 1960s and the collapse of the par value exchange rate system in 1971 led to a growing concern of the causes and effects of speculative capital flows. The IMF increased its engagement in multilateral surveillance in response to the currency crises in 1967 and 1968 and later developed a Multilateral Exchange Rate Model to calculate appropriate parity changes in the face of current account imbalances. Early on, model-based analysis was already a central part of IMF surveillance. Following the end of the gold standard in August 1971, the par value exchange rate system collapsed and the Committee on Reform of the International Monetary System (the Committee of Twenty) was formed to study issues concerning speculative capital flows. The Committee released a report in 1974 with findings indicating how disruptive flows can unsettle flexible exchange rate regimes. Although capital controls cannot be completely rejected, the Committee argued that such policies should not be permanent due to the possible damaging effects on trade and investment flows. The same year, the IMF Executive Board adopted the Guidelines for the Management of Floating Exchange Rates. The guidelines expanded the IMF’s

---

<sup>27</sup> The G-10 was composed of Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland (although not yet a member of the IMF at that time), the United Kingdom, and the United States.

purview to include other policies that had ‘external monetary effects’, including capital controls and fiscal intervention. In 1975, the IMF Articles of Agreement were revised to legalise floating exchange rates. The framework for the management of the new system of floating exchange rates was created in 1976, granting the IMF the role of guarding the system against excessive fluctuations. The new Article IV mandated the Fund to ‘exercise firm surveillance over exchange rate policies of members’. This led to the 1977 First Surveillance Decision, which called for the regular global review of exchange rate and related economic developments (Pauly 2008).

Whilst exchange rate policies were traditionally the main concern emphasised in the IMF surveillance framework, references to other policy areas with external monetary effects meant that the extent of analysis of issues such as those relating to financial and capital markets was limited to its impact on macroeconomic policies. The need for a deeper and more systematic focus only emerged in the aftermath of the 1994 Mexican and the 1997 Asian financial crises. In particular, the role of financial sector vulnerabilities in these crises led the IMF to realise that financial sector stability is critical to macroeconomic stability as well. One of the main lessons gleaned from the Mexican and Asian financial crises was the importance of transparency and the shortcomings in surveillance due to gaps in the provision of key statistics in developing countries. In particular, IMF analysis attributed the Asian crisis to inadequacies in data on reserves and external borrowing, resulting in the development of the Reports on the Observance of Standards and Codes and the data-focused Financial Sector Assessment Program (IEO 2016). This is consistent with the external narrative of the 1997 crisis that put the blame on internal causes (as outlined in Chapter 2). Such an interpretation of the Asian financial crisis was framed as ‘a more modest failure in the information that governments made available to market actors, and of a more serious failure in borrowing countries’ institutional quality’ (Best 2014, 130). The international community (pushed by the finance ministers and central bank governors of Canada, France, Germany, Italy, Japan, the United

Kingdom, and the United States, collectively known as the Group of Seven) called for the provision of timely and reliable data on a wide range of financial macroeconomic indicators as the IMF argued that improved transparency will help lessen the occurrence of financial crises (Kenen 2001). According to Michel Camdessus, who was IMF Managing Director at the time of the Asian financial crisis, the adoption of global standards ‘could help to “civilise globalisation” by creating new “rules of the game” to tame the wilder excesses of the global economy’ (Best 2014, 134).

Despite recognition following the crises during the 1990s that financial sector stability is critical to macroeconomic stability, they were still largely seen as two distinct policy spheres. The global financial crisis brought into sharp focus another set of gaps in IMF surveillance as it became apparent that insufficient attention was given to the analysis of spillovers and macro-financial linkages. Principles introduced and emphasised in two key surveillance frameworks, namely the 2007 Decision on Bilateral Surveillance and the 2012 Integrated Surveillance Decision (thereafter referred to as 2007 Decision and 2012 Decision, respectively), were instrumental to the development of IMF surveillance reform after the global financial crisis.

The 2007 Decision and 2012 Decision have important implications for the conduct of IMF surveillance as both explicitly underscore the need for member countries to be mindful of the external implications of their domestic policy choices. Hence, a country’s financial and macroeconomic policies are assessed not only against benchmarks for domestic stability but also against benchmarks for global stability. The 2007 Decision rearticulated its members’ surveillance commitments with the adoption of the principle of external stability for the benefit of ‘both the balance of payments stability of the country *and* the effects of its balance of payments position on the stability of other countries’ balance of payments’ (IMF 2007a). The principles outlined in the *Review of the 1977 Decision—Proposal for a New Decision Companion Paper* (IMF 2007b) offer important details on the conceptualisation of external stability. According to this

document, the realisation of external stability is characterised by ‘an underlying current account broadly in line with its equilibrium...and a capital and financial account that does not create risks of abrupt shifts in capital flow’ (IMF 2007b, 2). The paper also lists principles for the guidance of members, indicating that the IMF is cognisant of the need to clarify certain controversial terms (e.g., how to define ‘fundamentally misaligned’ exchange rates) and recognises that the ‘usual uncertainties’ (IMF 2007b, 12) in estimating equilibrium exchange rates persist.<sup>28</sup> In this context, external stability is key to the IMF’s core mandate of promoting global economic and financial stability, which is stressed to be ‘both a national and a multilateral concern’ (IMF 2018b). Policies should be implemented such that it ‘stri[k]es the right balance of domestic objectives and external stability’ (Lagarde 2016). In contrast, discussions on regional stability in ASEAN circles are largely a matter of ensuring that regional mechanisms act as a ‘layer of defence’ (Menon 2012) to safeguard financial and macroeconomic stability against threats.

Another notable point in the *Review of the 1977 Decision—Proposal for a New Decision Companion Paper*’s discussion on external stability is the emphasis on promoting external stability through domestic stability and the definition of the scope of surveillance by virtue of the ‘principle of proximity’ (IMF 2007b, 8). The IMF stresses that domestic stability fosters external stability, and this provides the justification for a case-by-case expansion of the scope of surveillance. Surveillance should cover primarily demand policies (i.e., monetary, fiscal, and exchange rate policies) but others identified by the proposed principle of proximity will also be deemed as part of the scope of bilateral surveillance. The Fund explains the application of the concept as follows:

---

<sup>28</sup> The paper emphasises that ‘the Fund would give the member the opportunity to represent the purpose of its actions and would give the member’s representations the benefit of any reasonable doubt’ (IMF 2007b, 13). However, the final decision rests on the Fund’s independent assessment of the validity of the member’s representation.



‘[C]ertain policies would automatically be regarded as materially influencing external stability prospects: exchange rate policies but also the macroeconomic and macroeconomically relevant structural aspects of fiscal, monetary, and financial sector policies. Other domestic policies would be covered in particular cases, but their bearing on external stability would need to be explained’ (IMF 2007b, 5).

Whilst the IMF stresses that the decision to expand the scope of surveillance will be done depending on the country’s circumstances, the choice to do so will be determined by whether these policies are seen to have a bearing on both domestic and external stability. As previously mentioned, the IMF is careful about acknowledging controversial terms and methodological uncertainties and emphasises that all assessments will be done with due consideration of members’ respective circumstances. The lack of evenhandedness has been a persistent concern in IMF surveillance as a substantial minority of members have complained that ‘the Fund is not evenhanded in its advice, particularly with respect to the treatment of large advanced countries’ (IMF 2014a, 30). Accordingly, the cautious tone evoked in the *Review of the 1977 Decision—Proposal for a New Decision Companion Paper* connotes recognition of possible political tensions arising from the framework. This issue is not new in IMF operations and has been analysed by Leonard Seabrooke (2010) in the context of the Asian financial crisis through the notion of a legitimacy gap.<sup>29</sup> Nonetheless, the IMF continues to move forward with pushing the boundaries of surveillance.

A more concrete manifestation of the growing scope for surveillance can be seen in the 2012 Decision. Similar to the 2007 framework, the 2012 Decision stresses the importance of the stability of a member country’s external account. However, it takes a wider view of the sources of domestic instability as the 2012

---

<sup>29</sup> Seabrooke defines a legitimacy gap as ‘the space between claims to the fairness and rightfulness of policy actions by those who seek to govern, and the conferral of legitimacy on these claims through policy implementation by those being governed’ (Seabrooke 2010, 139).

Decision covers other channels in addition to a member's balance of payments. Moreover, for the first time in the Fund's history, the 2012 Decision specifies that Article IV consultations are a vehicle not only for bilateral surveillance but also for multilateral surveillance, highlighting the importance of interconnectedness and spillovers. The 2012 Decision allows Article IV consultations to cover the entire range of potential and actual spillovers from a member country's domestic policies as they impact the effective operation of the international monetary system (IMF 2013b). Prior to the global financial crisis, bilateral and multilateral surveillance were conducted as separate processes. With the 2012 Decision, the IMF established new products and processes (e.g., Spillover and External Sector Reports and the introduction of the global risk assessment matrix to guide risk analysis in bilateral surveillance) to link the two together (IMF 2014a).

The 2012 Decision also specifies that in the event a country's policies promote domestic stability whilst also causing negative spillovers, IMF staff 'should discuss with the authorities alternative policies that minimise spillovers whilst continuing to promote domestic stability' (IMF 2014b, 32). This both widens and deepens the scope of bilateral and multilateral surveillance with the addition of inward and outward spillover analysis. Whilst these developments may be construed as a potential intrusion in member countries' economic sovereignty (a sensitive issue amongst East Asian countries, as highlighted in Chapter 2), constitutional provisions require the Fund to calibrate their approach. The 2012 Decision did not lead to any legal changes that would empower the IMF in their conduct of bilateral and multilateral surveillance, as Article IV Section 3 states that 'principles shall respect the domestic social and political policies of members, and in applying these principles the Fund shall pay due regard to the circumstances of members'.

### *6.2.2 IMF surveillance in theory vs. practice*

Hence, despite the repeated expansion of the scope of surveillance since the 1960s, what remains unchanged is the scope of formal obligations of member countries. As observed by Ayse Kaya (2012), post-crisis reforms in global

economic governance revealed a ‘paradox of delegation’ in that genuine intentions to increase the IMF’s relevance would have resulted in greater incursions into the sovereignty of member countries, which would not have been tolerated by East Asian countries. The 2012 Decision cannot legally require member countries to take into account the spillovers of their domestic policies to other countries. The 2014 IMF Triennial Surveillance Review recommends that the Fund review possible changes to its structures and mandate to encourage a collaborative approach to global growth and risk management. However, most members of the Executive Board do not agree that this issue should be prioritised given other pressing concerns faced by the IMF (IMF 2014c).

Whilst Kaya is right to note a ‘paradox of delegation’ following the response of international organisations to the global financial crisis, the failure to support the expanding scope of surveillance with a corresponding expansion in member obligations should not come as a surprise. Upholding the principle of external accountability continues to be touted as the fundamental goal of IMF surveillance in theory; however, fears of intrusions into member states’ economic sovereignty continue to constrain IMF surveillance in practice. Even in instances wherein Article IV imposes legal obligations upon members, there has yet to be a case wherein non-compliance was officially reported, nor have sanctions been applied. There are also diverging views on the effectiveness of IMF surveillance with respect to fostering global policy cooperation (IEO 2009). Despite the heavy rhetoric of cooperation that colours IMF surveillance, it is not a legal mechanism for enforcing cooperation. At best, surveillance provides ‘what might be seen as neutral and reliable data, forecasts, and analysis...[providing] machinery through which policy coordination can take place *if countries so wish*’ (Crow, Arriazu, and Thygesen 1999, 21).

Such contradictions raise questions regarding the relevance of IMF surveillance. Domenico Lombardi and Ngaire Woods (2008) list three possible ways the IMF can wield influence through surveillance: (i) by exerting direct

influence over its members through loan conditionality; (ii) by providing information on other members' economic performance, thereby reducing uncertainty about policy decisions of members and fostering cooperation; and (iii) by facilitating learning and socialisation with the development of a 'logic of appropriateness' or accepted norms and standards for participation in the global economic system.

On the first channel, direct policy influence through conditionality may be the clearest manifestation of the impact of surveillance but it needs to be assessed against the changing nature of IMF lending. Whilst four out of five member countries have borrowed from the IMF at least once, the number and profile of borrowers have vacillated through the years. When the IMF first started operations, most of its loans were to advanced industrial countries. The series of crises in the 1970s through the 1990s led to an increase in demand for IMF credit from low-income and emerging market economies but this dropped significantly before the onset of the global financial crisis as many countries began repaying their loans, or turned to private capital markets for their funding needs. This has greatly diluted IMF surveillance's ability to wield any policy influence. Furthermore, the Fund's lending framework has gone through major reforms since 2009 as it sought to introduce more flexibility into loan conditionality (IMF 2018a). Another recent development is the rise of alternative liquidity swap arrangements, both bilateral and regional. The case of East Asia's CMIM will be discussed in greater detail later in the next section.

On Lombardi and Wood's second point, IMF surveillance's function as information provider is one that is frequently raised, but also often contested. As mentioned earlier, one of the key reforms pushed in the aftermath of the Mexican and Asian financial crises in the 1990s targeted transparency and the timely provision of more accurate and granular data. However, the notion that transparency is a critical component of stable markets also has several limitations (Blyth 2003; Best 2005). The rationale for transparency lies in the belief that providing more and better information can solve market instability. It

is already questionable that market instability is a result of information asymmetries alone; even if this claim is accepted, the assumption is transparency will work under the unlikely assumption that the provision of information will lead to convergent expectations and actions, and that actors have a shared understanding of market fundamentals.

Promoting transparency can also be problematic as it imposes the dominance of a particular set of norms and consequently strengthens the authority and legitimacy of the institutions that support this set of norms. Whilst cloaked in technical terms, calls for transparency constrain state autonomy as it requires compliance with externally defined standards that determine what it means to be good economic citizens, both domestically and globally. Reforms are framed in such a way that highlights the responsibilities of affected countries in maintaining global financial stability as part of a new 'global ethics' (Best 2005). As pointed out in Chapter 4, this reflects the inherent politics obscured by the technical and universal nature of surveillance analysis; at the same time, such standards are seen as an important indicator of the international credibility that East Asian countries seek.

On top of this, issues of who the users are and how the information is used further complicate IMF surveillance's role as information provider. A review by the IEO (2006) indicates that the World Economic Outlook (WEO) has no observable impact on national policy design. As for private market actors, Lombardi and Woods (2008) fail to find evidence that they use information from IMF surveillance decisions. Regardless of how surveillance findings are actually used, Harold James argues that IMF surveillance should be valued as it depoliticises the supply of information by 'leaving thousands of market participants rather than any one political body to make judgments about the appropriateness of policy' (James 1995, 789). He underscores the importance of the IMF's authority as information provider as he notes that:

'The rule of Bretton Woods has been replaced by knowledge; an information standard has succeeded a gold or dollar/sterling or dollar

standard; and the influence of the institution at the heart of the international financial system depends largely on its ability to provide speedy, accurate, and persuasive economic analysis' (James 1996, 612).

Another approach highlights IMF's role as a reputational intermediary. André Broome works with the theory of policy credibility to demonstrate how IMF surveillance can reduce uncertainty about the nature of domestic economic reform and national policymakers' commitment towards implementing it. The IMF effectively gives a 'good housekeeping seal of approval' (Broome 2008, 126) which opens doors for countries to access additional sources of funding.<sup>30</sup> This coincides with Lombardi and Woods' observation that IMF surveillance is valued as a signal to markets about the relative standing of the country within the IMF. Such views on the IMF's role as reputational intermediary hold significant implications in the context of policy justification and external accountability, as will be discussed further at the end of this section.

The third channel through which IMF surveillance can wield influence relies on the development of accepted norms and standards by which 'good economic practice' is defined and which govern participation in the global economy. Beyond loan conditionalities or overt legal mechanisms, the Fund carries significant influence in shaping the interpretive framework for good economic practice (Barnett and Finnemore 2004; Clift 2018). However, what exactly constitutes 'good economic practice' is increasingly contested and, as discussed in Chapter 2, previously dominant discourse on the 'appropriate' economic growth model is also being challenged. In relation to East Asia, exchange rate and capital control policies are common topics of debate.

---

<sup>30</sup> Whilst these accounts may be valid, market response to IMF surveillance in this context is effectively treated as an external process, when the various financial crises over the years have shown the dangers of sticking with such an assumption. In this case, the utility of IMF surveillance appears to be assessed based on the information it provides to market actors about the state of a country's economic and financial performance, without taking into consideration that this performance is also contingent on market reactions.

On exchange rate policies, although China agreed in principle that there is a need for greater exchange rate flexibility, government officials rejected the idea that global imbalances (particularly China's large surplus) were to blame for the global financial crisis (Foot and Walter 2011). Yi Gang, Deputy Governor of the People's Bank of China, argued in 2009 that '[t]he current financial crisis, which originated in developed countries, has resulted in substantial losses for the countries of the world... the failure of major international financial institutions to issue timely early warning highlights the consequences of its misfocused surveillance' (Gang 2009). The 2013 Article IV Consultation for China once again pointed out that the renminbi is 'moderately undervalued' (IMF 2013d, 27). In his response to the staff recommendations, IMF Executive Director Tao Zhang noted that 'my authorities view that both the EBA [External Balance Assessment] and CGER [Consultative Group on Exchange Rate Issues] methodologies have not yet been able to capture the rapid structural changes in many economies, including China, and so further work on the subject is needed' (T. Zhang 2013, 4).

As for capital controls, the IMF traditionally opposed the use of capital controls—a position that one external review considers 'based more on ideology than on a careful consideration of the evidence and the policy alternatives' (Crow, Arriazu, and Thygesen 1999, 39). However, the Fund has adjusted its stance to account for what transpired during the crises in emerging economies during the 1990s. One of the causes of the Asian financial crisis was the sudden outflow of massive short-term capital and the poor monitoring of external positions in terms of claims and liabilities (Murase 2007). Recognising the trade-offs of full capital liberalisation and the different benefits and risks it has for developed and emerging economies, the IMF now qualifies its prescriptions with a call for 'well-planned, timed, and sequenced' liberalisation process. It acknowledges that certain circumstances justify the need for 'capital flow management measures' but holds that it should not be used in lieu of structural adjustments (IMF 2014a, 19).

In East Asia, the AEC framework calls for 'freer' capital flows as ASEAN member states do not aspire to completely eradicate all restrictions to capital flows. This is consistent with the IMF's revised view on capital liberalisation and the acknowledgment that the use of capital controls can be justified to protect domestic financial markets from external shocks. However, there is still some objection to the IMF position and recommendation of a specific sequence for the use of such tools. One particular point of contention is the IMF's view that measures for capital flow management should only be considered after more conventional macroeconomic tools have already been exhausted (Y. C. Park and Takagi 2012). Hence, contrary to the ASEAN position, the IMF only recommends intervention in capital markets as a last resort.

Whilst it appears that IMF surveillance has also fallen short in terms of the third channel (i.e., by facilitating learning and socialisation with the development of a 'logic of appropriateness' or accepted norms and standards for participation in the global economic system), Pauly invites us to calibrate expectations. As raised in Chapter 1:

'In practice, the task of defending and deploying [IMF] authority would never be easy, straightforward, or finally accomplished, and the actual power of the Fund would remain ambiguous and variably applied. Nevertheless, agreement on the normative foundation of the core mission of the Fund sufficient for it to evolve and adapt to changing circumstance represented a signal innovation in modern economic history' (Pauly 2008, 190).

'...the reality that sovereign states thereafter felt compelled to justify to one another both certain actions and their effects represented a novel movement toward external accountability' (Pauly 2008, 193).

Hence, despite the aforementioned disagreements between the IMF and East Asia policy stance on areas such as exchange rates and capital controls, policymakers in the region are still motivated to justify their domestic economic



policies to the international community—the principle of external accountability remains the accepted code of conduct for participation in the global economy. Two related points—the IMF’s aforementioned role as reputational intermediary and commitment to the principle of external accountability—can account for the continued relevance of IMF surveillance across time and member countries. Whilst the emergence of regional surveillance may challenge the IMF’s monopoly as reputational intermediary, the normative solidarity based on adherence to external accountability still drives AMRO surveillance. The next section looks into East Asia’s motivations for supporting the principle of external accountability.

### **6.3 Regional surveillance as a necessary measure to support multilateral surveillance**

East Asia’s relations with the IMF have been characterised as ambivalent, as financial regionalism continues to be ‘motivated by resentment of the institution yet facilitated by its presence’ (Henning 2011, 23). The rise of regional surveillance in East Asia needs to be analysed in this context, with the ongoing progress being framed as both competition and complement to IMF surveillance. As argued in Chapter 2, regional surveillance should also be read as an exercise of policy justification; however, commitment to external accountability in East Asia hinges not just on achieving international credibility but on sustaining domestic legitimacy as well. Hence, the following discussion highlights how regional surveillance remains reliant on direct state involvement and embedded IMF links.

The concept of financial and macroeconomic surveillance did not pervade policy thinking in East Asia until the Asian financial crisis. As was the case in the IMF, the crisis gave the impetus for action and reform. When the baht collapsed in July 1997, the Japanese government moved quickly to organise and assemble bilateral aid from its neighbours to augment the funds Thailand could draw from

the IMF. The success opened new opportunities for regional cooperation and encouraged Japanese officials to develop the concept of a more permanent mechanism for regional liquidity support (Amyx 2008). The proposal to create an Asian Monetary Fund was raised. The plan was to create a US\$100 billion fund with US\$50 billion provided by Japan and the rest by China, Hong Kong, Singapore, and Taiwan. This was supported by Malaysia but the United States expressed its strong opposition, arguing that such a fund would duplicate IMF's activities and create moral hazard problems.<sup>31</sup> Whereas most of the liquidity support required by countries affected by the Asian financial crisis was eventually provided by the IMF, the conditionality attached to IMF assistance created problems within the domestic politics of the borrowing countries and prompted severe backlash against the Fund and its policies. The experience also led East Asian economies to begin considering self-insurance in the form of unilateral reserve accumulation.

As the proposal for the Asian Monetary Fund failed to take off, a new proposition was put forward in November 1997 under the banner of the Manila Framework Group. In light of the roadblocks faced by the original proposal, the Manila Framework Group was very clear in its intention to complement IMF activities and resources as a mechanism for regional surveillance and as a cooperative financing arrangement. The Fund was appointed as technical secretariat of the Manila Framework Group and was tasked to prepare background reports for meetings of ASEAN finance ministers. However, evaluation of IMF surveillance during this period showed that the background reports were 'largely an updated replication of consultation material already available' (Crow, Arriazu, and Thygesen 1999, 29). Furthermore, regional officials found that the Fund was 'too ready to see difficulties in stronger regional cooperation, particularly in Asia' (Crow, Arriazu, and Thygesen 1999, 29). Years

---

<sup>31</sup> Instead, Japan extended bilateral financing to its East Asian neighbours through the New Miyazawa Initiative. Japan announced in October 1998 that they were ready to extend US\$30 billion to assist countries in the region. A total of US\$21 billion in financial support was pledged to Indonesia, South Korea, Malaysia, the Philippines, and Thailand (Kageyama 2000).

of regular meetings did not lead to the establishment of an effective surveillance system; the Manila Framework Group ultimately became just another forum for exchanging views and information on regional and global financial issues (Manupipatpong 2002). Advocates for regional surveillance in East Asia stressed that an effective regional mechanism would differ from existing global surveillance platforms because of the peer review process. The expectation here was that the direct involvement of senior policymakers would facilitate policy influence (Kuroda and Kawai 2002; Takagi 2010). As can be expected given the significant importance of non-interference in ASEAN affairs, the outcome did not meet expectations.<sup>32</sup> The Manila Framework Group eventually came to an end in 2004 but progress in regional surveillance continued under the purview of the ADB and ASEAN/ASEAN+3.

The ASEAN finance ministers established the ASEAN Surveillance Process in 1999 with the view of making it an informal peer review mechanism complementary to the multilateral surveillance activities carried out by the IMF. The ASEAN Surveillance Report is prepared using the same dataset submitted to the IMF but surveillance contacts of each member country are given significant discretion on the details provided in the report (Anas and Atje 2005). Full reports are not made public but its general structure is known. The ASEAN Surveillance Report includes the ASEAN Economic and Financial Review, an analysis of the latest economic developments across the region and within each member state, and the Surveillance Issues Report, which focuses on a specific policy issue. The ASEAN Financial and Macroeconomic Surveillance Unit drafts the report with inputs from consultants and sends it to the ASEAN Finance Deputies Meeting. Results of the discussion are then shared at the ASEAN

---

<sup>32</sup> For instance, it has been argued that regional surveillance creates room for greater ownership of the surveillance process. Poor ownership can weaken the quality of cooperation and the effects will be seen in the form of less accurate and timely sharing of data and policy programmes, as well as a diminished willingness to engage in a frank exchange of views. A regional process can also create a stronger sense of collective action, which is important in fostering mutual trust and making peer pressure more effective (Manzano 2001). Whilst this may be the case in theory, it is difficult to see how this will play out in the context of ASEAN given the region's continued adherence to the norm of non-interventionism (Jung 2009).

Finance Ministers Meeting (Murase 2007). The ASEAN Surveillance Process was clearly very different from IMF Article IV consultations in that the latter was essentially a fact-finding mission, whilst the former mainly relied on information directly provided by consultants and contacts in the member country's finance ministries and central banks. Furthermore, the peer review process was once again weak and ineffective. The deputies were often more concerned about the content of the reports on their respective countries, rather than in engaging in constructive policy dialogue with their regional counterparts. It was also common for deputies to intervene and edit reports when the documents contained sensitive issues (Anas and Atje 2005).

Although the motivations behind and design of the ASEAN Surveillance Process were guided by the aim of complementing IMF surveillance, close coordination and compliance remained elusive as member countries wavered on the implementation of the Fund's policy recommendations, especially on exchange rate policy. Cooperation between the ASEAN+3 and IMF could have involved greater participation in Article IV consultations but the ASEAN Surveillance Coordinating Unit, a group created to coordinate the activities under the ASEAN Surveillance Process, was not allowed to be involved on the grounds of the IMF's confidentiality agreement with member countries (Manupipatpong 2002). In a third-party report prepared for the ASEAN Secretariat, assessment of the ASEAN Surveillance Process attests that '[a]lthough the ASEAN Surveillance Process was designed to complement IMF's surveillance mechanism, it is not clear that the two institutions coordinate their work to get the maximum benefit from their activities' (Anas and Atje 2005, 3).

Under the wider ASEAN+3 rubric, the Economic Review and Policy Dialogue (ERPD) was launched in 2002 to monitor and evaluate national, regional, and global economic conditions, as well as help East Asia represent the region's interests in the reform of the international financial architecture. It was introduced in conjunction with the Chiang Mai Initiative (CMI) reserve pooling

arrangement as a supplement to existing multilateral facilities.<sup>33</sup> The surveillance process under the ASEAN+3 ERPDP involves presentations on the regional and global outlook by the IMF. These are delivered during the ASEAN+3 Finance and Central Bank Deputies Meeting (Kawai and Houser 2007). Aside from member states and representatives from the ASEAN Secretariat, attendees include the ADB and the IMF.<sup>34</sup> However, representatives from international institutions do not take part in the country-by-country surveillance discussions. Similar to the ASEAN Surveillance Process, findings from the deliberations are later reported to the ASEAN+3 Finance Ministers Meeting. ADB is also directly involved in the ERPDP process. The Bank prepares a Confidential Note for presentation in ASEAN+3 meetings. It also works with ASEAN+3 to draft background reports which member countries use in conducting regional financial and macroeconomic monitoring and peer review (ADB 2009).

As outlined above, early efforts towards regional surveillance in East Asia were constrained by weak support from and coordination with external partners, as well as an ineffective peer review process. It took another crisis to spur ASEAN+3 member countries to take greater strides. The CMIM regional reserve-pooling arrangement re-ignited talks of the Asian Monetary Fund as ASEAN+3 finance ministers hastened moves to expand and ‘multilateralise’ the original CMI.<sup>35</sup> AMRO was established in April 2011 as an independent regional surveillance unit to monitor and assess regional economies and provide analytical support to the CMIM. During periods of economic stability, AMRO is tasked to prepare reports on the overall macroeconomic outlook of ASEAN+3 as

---

<sup>33</sup> The CMI started as a network of bilateral swap and repurchase agreements building on the ASEAN Swap Agreement (ASA). The ASA was established in 1977 to provide immediate short-term swap facilities to participating ASEAN member countries with temporary international liquidity problems. The maximum total amount of US dollars initially available for swap transactions was US\$100 million (ASEAN 1977) but was expanded to US\$200 million in 1978 (ASEAN 1978). The ASA was activated five times—by Indonesia in 1979, Malaysia and Thailand in 1980, and the Philippines in 1981 and 1982. However, the funds from this facility were too small to be a significant source of liquidity support (Henning 2004).

<sup>34</sup> The inclusion of the IMF only began in November 2005.

<sup>35</sup> Whilst the CMI was already ready for use when South Korea and Singapore needed liquidity support in 2008, the central banks of these countries turned to the US Federal Reserve instead to arrange a bilateral swap agreement (Grimes 2011).

a region as well as individual countries. During times of crisis, AMRO has a critical role to play as a provider of economic and financial analysis of the CMIM Swap Requesting Country. The office will also monitor the use and impact of the funds disbursed under the CMIM agreement and observe compliance by the Swap Requesting Country with any lending agreements stipulated in the CMIM.

The CMIM has yet to be tested but initiatives to build AMRO's resources and capacity to operate effectively as an independent regional surveillance unit has progressed significantly, especially in 2016 and 2017. In February 2016, AMRO's status was officially upgraded to that of an international institution, effectively strengthening its legal capacity to enter formal cooperation agreements and enable the organisation to ensure confidentiality and legal protection, particularly when handling confidential and sensitive data. In the early stages of AMRO's operations, critics doubted its capacity to be an effective and credible surveillance unit given its limited research capacity and human and institutional resources, especially relative to that of the IMF's (Hill and Menon 2012). However, recent changes indicate progress in this front. Staff expansion has been a top priority in the last few years, with senior surveillance staff hailing from various state financial institutions (e.g., Bank of Thailand, the Monetary Authority of Singapore, and the Japan Bank for International Cooperation) and holding PhD degrees in economics from top US universities (e.g., University of Pennsylvania and Yale University). These credentials suggest that heavy weight is given to government ties and standard indicators of technical expertise and educational prestige.

AMRO has also been more actively involved in providing technical assistance to less developed member countries for surveillance capacity building. It has also increased its engagement and visibility with more outreach and partnership activities, both in regional platforms as well as in other international organisations and multilateral forums such as the IMF and G-20. Nonetheless, AMRO still relies on its strategic partners—particularly the ADB—for assistance. The ADB has been a leading figure in the region's efforts to build

surveillance capacity since 2006. Recent technical assistance projects include ‘Supporting and Enhancing Regional Surveillance for ASEAN+3 and the CMIM’ (ADB 2011) and ‘Enhancing the Capacity of Selected ASEAN+3 Countries for Assessing Financial Vulnerabilities’ (ADB 2007). The ADB is currently implementing a regional technical assistance project entitled ‘Enhancing Regional Capacity for Economic Surveillance and Financial Vulnerability Assessment’ (ADB 2016). The project seeks to upgrade the region’s economic and financial vulnerability assessment tools (building on its Vulnerability Indicators and Early Warning System model or VIEWS) in light of the ‘new sources of vulnerabilities emerging after the global financial crisis’ (ADB 2016, 1). The ADB’s contributions to the development of surveillance models in East Asia will be discussed further in the next chapter.

2016 was a milestone year for AMRO in other ways. It upgraded and streamlined its surveillance framework to focus more on risks and vulnerabilities. AMRO has also developed ‘its own analytical toolkits’ (AMRO 2017a, 12) to support its surveillance activities. Country surveillance now includes an evaluation of member countries’ macroeconomic developments and outlook, as well as an assessment of risks and vulnerabilities particularly spillovers, fiscal sustainability, and the stability of external and financial sectors. As for regional surveillance, AMRO defines its role as that of ‘assessing region-wide economic developments and emerging trends that may expose ASEAN+3 members to significant risks and vulnerabilities within and outside the ASEAN+3 region’ (AMRO 2017a, 14). This covers a review of macro-financial linkages, spillovers, and contagion risks, and its implications for member countries and the region in general. As can be seen, the expansion of the AMRO surveillance framework parallels that of the IMF’s, yet driven by different end goals.

AMRO has also put more emphasis on strengthening accountability and transparency and now has regular public outputs including country consultation reports, thematic studies, and monthly updates. In its early years, AMRO’s surveillance products were submitted directly to senior officials of finance

ministries and central banks every quarter for purposes of peer review during the ERPD and not for public dissemination. These reports were also presented during the meetings of vice ministers of finance and deputy governors of the central banks of ASEAN+3 economies twice a year (Siregar and Chabchitrchaidol 2013). This changed in 2017 with the release of the flagship ASEAN+3 Regional Economic Outlook. AMRO developed its own publication policy ‘which will promote its accountability and visibility beyond the regional platform and solidify its presence as an international organisation’ (ASEAN+3 2017). AMRO has also taken measures to improve its public presence by organising seminars and roundtables, providing updates about the office’s activities through the AMRO website, and engaging with media (AMRO 2018a).

With these steps, it appears that early doubts regarding AMRO will now be put to rest. The institution has been more aggressive with its expansion and assertive about cementing its place as a key player in global economic governance. Nonetheless, two features which shaped earlier regional surveillance initiatives—heavy state involvement and persistent IMF links—continue to figure prominently in AMRO’s operations and agenda.

On the first point, the extent of AMRO’s self-proclaimed independence should be qualified. Despite its practice of hiring and engaging top regional bureaucratic and academic economists for senior management posts<sup>36</sup> and for membership in the Advisory Panel,<sup>37</sup> AMRO governance is still largely under the direction of the Executive Committee, which counts deputy finance ministers and deputy central bank governors as its members. The Executive Committee is in charge of ‘strategic oversight of AMRO including providing guidance and setting broad policy direction for the management of AMRO’ (AMRO 2018c). The

---

<sup>36</sup> In fact, AMRO Chief Economist Dr Hoe Ee Khor is the former Deputy Director of the Asia and Pacific Department of the IMF. AMRO Director Junhong Chang was affiliated with China’s Ministry of Finance as Deputy Director General of the Department of International Economic Relations before joining AMRO.

<sup>37</sup> Current members include professors in Hitotsubashi University and the University of the Philippines, with PhD degrees from Oxford and Columbia, respectively. The Advisory Panel reviews AMRO’s surveillance outputs; however, summaries of the discussions are not disclosed.



committee's responsibilities involve appointment of the AMRO Director, who is 'accountable to and *subject to the general control of the Executive Committee*' (AMRO 2018c, italics added). AMRO's organisational structure thus suggests that it still operates within the ASEAN tradition of using regional institutions to consolidate state authority, as discussed in Chapter 2.

On the second point, one of the prominent features of the CMIM is its IMF link. As discussed in Chapter 2, the IMF link was retained (despite opposition from Malaysia) to address concerns regarding CMIM's market credibility. When it was first launched, guidelines for disbursement indicated that funds dispersed through CMIM (except for the first 20% of the allotment) was linked to a program with the IMF. Although this was revised in May 2012 with the de-linked portion enlarged to 30% with plans of increasing it to 40% up for review, the IMF link continues to be a sensitive issue among ASEAN+3 member states as memories of their experience with the Fund in 1997 linger. ASEAN+3 officials have always acknowledged that surveillance under AMRO would evolve to complement the IMF's. Yet twenty years after the Asian financial crisis, the region's relationship with the IMF continues to shape policy agenda and discourse. AMRO Director Junhong Chang reiterates that:

'The memories of the Asian financial crisis of 1997 are still vivid in the region, and the so-called "IMF stigma" still lingers here. The global financial crisis of 2008 was another wake up call for us to further strengthen our regional self-help mechanism and gave birth to the CMIM and its current form... the CMIM and AMRO together are our regional responses to these global challenges' (Chang 2016).

Whilst Chang emphasises that 'we do not see AMRO and CMIM as replacing the IMF in terms of surveillance in financing' (Chang 2017), the lessons she draws from the Asian and global financial crises are quite telling in that, whilst she implies that the IMF has learned from the error of its ways, the East Asian response suggests that the region continues to rely on self-help mechanisms:

‘Taking the lessons from the Asian financial crisis to heart, the IMF has become more transparent and accountable. It has sought feedback from its members and reviewed its policy advice in programmes and lending facilities. ASEAN+3 economies, on the other hand, have strengthened the macroeconomic fundamentals, built up buffers, and become more confident of their ability to manage risks and external shocks’ (Chang 2017).

Since its shaky beginnings after the Asian financial crisis, surveillance in East Asia has been characterised by procedural IMF links in the foreground and direct state involvement in the background. It was only in the years following the global financial crisis, with the hastened efforts to expand CMIM and AMRO, that there has been a subtle shift in tone. As shown above, AMRO is becoming more confident in securing its nascent position in global economic governance, framed against the backdrop of global challenges and the lingering IMF stigma. AMRO’s direction thus far stresses the importance of self-help mechanisms alongside IMF cooperation. Moreover, in contrast to earlier regional surveillance initiatives, AMRO is more keen to establish a public presence with the recent dissemination of surveillance outputs and the ongoing efforts to secure partnerships with other stakeholders in global economic governance.

Hence, AMRO offers a promising platform for East Asian countries to continue demonstrating their commitment to the principle of external accountability, especially since it facilitates policy justification in their own terms, but according to accepted global standards of technical expertise. This can be observed in two ways: In terms of organisational structure and staff profiles, state links figure prominently in AMRO, as can be expected given the use of ASEAN-led initiatives in consolidating state authority (see Chapter 2). In terms of AMRO’s new publication policy and its emphasis on promoting ‘accountability and visibility beyond the regional platform and solidify[ing] its presence as an international organisation’ (ASEAN+3 2017), AMRO surveillance can be viewed as an important tool for strengthening international credibility.

This account of the rise of regional surveillance illustrates how technical policy expertise is also embedded in political and relational knowledge, as reflected in the different narratives on the ‘East Asian model’ of economic growth that were outlined in Chapter 2. The emergence of AMRO as ‘an authoritative interpreter of economic and financial developments in the Asian region’ (Menon 2012) is based on the region’s reading of the vindication of the East Asian approach during the global financial crisis; likewise, AMRO’s policy concerns and recommendations are also based on the lessons drawn by its analysts from the Asian financial crisis and the lingering IMF stigma.

Whereas AMRO’s objective of ‘assessing region-wide economic developments and emerging trends that may expose ASEAN+3 members to significant risks and vulnerabilities within and outside the ASEAN+3 region’ (AMRO 2017a, 14) puts emphasis on regional resilience and stability, the expansion of its surveillance scope bears similarities with the IMF in that AMRO also counts the assessment of spillovers and systemic risk as a priority. Macroprudential policies are a key component of systemic risk analysis and are also beset with similar methodological issues as discussed in Chapter 5. The following section examines these problems and their implications for external accountability.

#### **6.4 Macroprudential policy as a necessary part of the surveillance toolbox**

After the global financial crisis, academics and policymakers alike advocated the use of macroprudential policy as an important tool for analysing spillovers and containing systemic risk. The appeal seems straightforward: at its broadest application, macroprudential policy has been used to effectively refer to any policy that limits systemic risk or promotes financial stability. Intuitively then, it is easy to accept macroprudential policy as the appropriate next step for global financial governance after the crisis. Macroprudential policy is made even more attractive by its packaging as a technocratic regulatory project which seeks

to develop new technologies to manage financial markets. As both the IMF and AMRO put emphasis on tracing and measuring spillovers and systemic risk,<sup>38</sup> macroprudential policy then seems like the perfect fit.

However, as a burgeoning policy area, macroprudential policy is still very much a work in progress; hence, it is important that we heed the call of Borio to temper boldness with realism (Borio 2010). This section reviews the work thus far on macroprudential policy, paying particular attention to the need to contextualise expectations within its methodological limitations. Whilst many scholars have analysed these issues with great depth, there has yet to be any focus on the transboundary implications of macroprudential policy. As noted in Chapters 2 and 5, the spatial representations embedded in transboundary risk governance involve debates over representations of risk and the geographical boundaries and governance arrangements that emanate from such representations. This is a concern that merits greater attention in macroprudential policy than it currently receives, especially in light of the developments in regional and global surveillance.

On the surface, developments in macroprudential policy seem promising as they appear to offer more concrete forms of monitoring and regulating systemic risk. However, a closer look suggests otherwise. Macroprudential policy as it currently stands is beset with issues similar to those plaguing the concept of systemic risk. It should be acknowledged at the onset that macroprudential policy is a new research and policy area, and that it did shed light on the contradictions prevalent in orthodox notions of financial markets. However, signs of a rapid and radical intellectual shift should be reconsidered as the continued emphasis on the feasibility of intensified technocratic control over finance is also problematic, especially since the project is rife with methodological issues.

---

<sup>38</sup> Examples include the IMF *Key Aspects of Macroprudential Policy* (IMF 2013c) and the *Non-binding Principles for Macroprudential Policies and Capital Flow Measures* which was endorsed at the 18<sup>th</sup> ASEAN+3 Finance Ministers and Central Bank Governors' Meeting (ASEAN+3 2015).

#### *6.4.1 The story thus far*

The BIS had started using the term ‘macroprudential’ to refer to how problems concerning a particular institution can have disruptive systemic implications in the wider financial system as far back as 1979 (Clement 2010). The first reference to the term defines macroprudential policy as one that promotes ‘the safety and soundness of the broad financial system and payments mechanism’ (BIS 1986, cited in Clement 2010, 62). Whilst it does not seem to differ much from its current usage, the BIS used it with a very specific focus on derivatives markets and securitisation. As macroprudential policies took off and garnered wide support after the global financial crisis, the term lost its specificity and it began to be used in a myriad of ways. BIS officials have noted that ‘macroprudential is an orientation or perspective of regulatory and supervisory arrangements’ (Borio 2010, 2); senior staff at the Bank of England even went further by referring to macroprudential policy as ‘a new ideology and a big idea’ (Haldane 2009, cited in Goodhart 2015, 281).

Macroprudential policy gained traction when it became clearer that the efficient market hypothesis that had dominated policy and regulatory thinking did not hold. An IEO assessment of IMF surveillance in the lead-up to the 2007 crisis reveals that one of the main reasons why Fund staff failed to identify the build-up of risks is the prevalent groupthink that self-regulation and market discipline would be sufficient to ward off crises (IEO 2011b). Andrew Baker (2013) attributes this ideational shift to four key principles: (i) the fallacy of composition (the understanding that actions done as a response to individual incentives do not necessarily lead to positive aggregate results); (ii) procyclicality (credit supply rises when least needed); (iii) herding (deferment of individual judgement to others); and (iv) complex externalities (unintended consequences as a result of the interconnected nature of the global financial system). Whilst there seems to be more agreement with regard to the principles driving the rise of macroprudential policy, the jury is still out on the usage, implementation, and effectiveness of macroprudential policy. This does not come

as a surprise as there is also no consensus with regard to the core objectives of macroprudential policy. Gabriele Galati and Richhild Moessner (2013) note that there appears to be a general agreement that macroprudential policy aims to foster financial stability by limiting the costs and risks of systemic crises, with variations in the emphasis and language used. The various perspectives can be broadly framed in two ways: The first relates to how financial stability is understood in relation to the real economy whilst the second can be linked to how exactly financial stability should be defined in the first place.

On the former, Bank of England Chief Economist Andrew Haldane splits the debate into purist financial stability objectives ('to protect the financial system from swings and cycles in the real economy' [A. Haldane 2013, 1]) and overt macroeconomic goals ('to protect the real economy from swings and cycles in the financial system' [A. Haldane 2013, 2]). He compares the case of the United States, wherein the use of stress tests shows that macroprudential tools were used 'to provide power to the elbow of microprudential supervision', with that of the United Kingdom, which has a 'dual but ordered' mandate in its use of macroprudential policy (A. Haldane 2013, 2). In the case of the United Kingdom, emphasis is put on financial resilience whilst output and employment stabilisation is seen as an important but secondary concern. The experience of the United Kingdom is also observed in other countries such as Brazil, Hong Kong, India, Israel, and South Korea. Closer to the other end of the spectrum, Baker (2013) gives greater priority to macroeconomic concerns. He defines macroprudential policy as a 'system-wide top-down approach to regulation and financial stability that seeks to curb the credit cycle through countercyclical regulatory interventions by directing and sometimes directly constraining, the commercial activities of private institutions in an effort to restrain extreme movement in asset prices' (A. Baker 2013, 418). The focus on the credit cycle suggests that his view of macroprudential policy gives precedence to macroeconomic goals—whilst it can be argued that the credit cycle is a feature

of the financial system, there are very strong empirical links between macroeconomic stability and credit cycles.

East Asian countries dabbled in macroprudential policies earlier than most as the implementation of macroprudential policies started as a response to the 1997 financial crisis. Whilst the region is similar to the United Kingdom in that financial resilience is made the priority, countries such as South Korea tend to turn to quantity-based instruments such as loan to income (LTI) and loan to value (LTV) ratios, as opposed to the United Kingdom's preference for price-based instruments such as countercyclical buffers. This is attributed to South Korea's relative suspicion of unmitigated financial liberalisation, as well as a weaker tendency to view property prices as a source of growth and indicator of wealth (A. Baker 2015). There is evidence that macroprudential policy has been widely used in Asia over the last few years but a closer look at East Asian economies show that usage has been quite uneven particularly among the new ASEAN member states. An IMF study finds that housing-related measures (e.g., LTI ratios and higher risk weight requirements on mortgage loans) are popular in Asia but there are differences in policy preferences within the region. For example, advanced economies such as Hong Kong and Singapore resort to domestic prudential measures (e.g., LTV and debt-to-income ratios) whilst emerging Asia prefer a combination of macroprudential tools and monetary policy (e.g., reserve requirements on local currency deposits) (L. Zhang and Zoli 2014). Amongst the new ASEAN member states, namely Brunei Darussalam, Cambodia, Laos, Myanmar, and Vietnam, there are still significant gaps in the availability of data for monitoring macroprudential indicators, such as capital adequacy and loan to deposit ratios (S. H. Lim and Reyes 2014). For most of these countries, volatile capital flows are not a major concern as they have a relatively low degree of financial integration with the region and the rest of the world and underdeveloped capital and financial markets. Nonetheless, it appears that they do recognise the utility of macroprudential tools as they are all in the process of setting up a national macroprudential surveillance system.

Parallels to the United Kingdom experience, or what Haldane calls the ‘Type 2 mandate,’ can also be seen at the multilateral level. In this case, the mandate to work on macroprudential policy tools and frameworks was given jointly to the FSB, the IMF, and the BIS by the G-20. At their meeting in Seoul in November 2010, the G-20 leaders emphasised that further work on macroprudential frameworks should be prioritised. The FSB, IMF, and BIS released a report the following year outlining the group’s position on various aspects of the macroprudential policy. In this document, the purpose of macroprudential policy is stated as the limitation of systemic risk, which is defined as the ‘the risk of widespread disruptions to the provision of financial services that have serious negative consequences for the economy’ (FSB, IMF, and BIS 2011, 3). This does not differ from the IMF’s official position as specified in the document *Key Aspects of Macroprudential Policy* (IMF 2013c). Here, the objective of macroprudential policy is ‘to increase the resilience of the financial system to aggregate systemic shocks by building buffers that absorb their impact and help maintain the ability of the financial system to provide credit to the economy’ (IMF 2013c, 12). Both statements appear to give primacy to the financial sector with the real economy as a secondary consequence, a consideration in so far as financial instability can have significant macroeconomic costs. It should be noted though that such an approach towards macroprudential policy is based on the premise that there is a clear separation between the financial sector and real economy, a problematic assumption as raised in Chapters 2 and 4.

On defining financial stability, Galati and Moessner (2013) note that studies that set out to describe what constitutes financial stability either define it in terms of the resilience of the financial system to external shocks or in terms of the inherent risks and shocks within the financial system. In a similar literature survey conducted by the BIS Committee on the Global Financial System, the authors also comment on how there is no widespread agreement on what financial stability should look like, particularly as a goal of macroprudential policy. As indicated in Chapter 5, the committee points out that ‘the notion of



financial stability is often discussed in terms of the concept of systemic risk and its sources, for which again there is no consensus definition' (Committee on the Global Financial System 2010, 21). The IMF also admits that arriving at an exact definition of systemic risk can be problematic; furthermore, the confusion is amplified as the Fund defines systemic risk in terms of financial instability.<sup>39</sup>

Despite the widespread support for macroprudential policy, research to support its design and implementation is still very much in its early stages. Galati and Moessner (2013) list three reasons for the slow development of macroprudential research. Chief among these is the problem of defining the goal of macroprudential policy and what exactly constitutes financial stability, as previously discussed. Baker situates this as a broader issue of social purpose, in that there needs to be a clear and compelling articulation of a macrosocial ontology to guide the macroprudential project. This macrosocial ontology should elaborate on the design and goals of a good economic system, drawing not just from rational economic analysis but from ethical reasoning as well (A. Baker 2018). Another reason is the inadequate understanding of the interactions between the financial sector and the macroeconomy, arguably one of the more important items on the long list of contested issues in the macroprudential policy debate. Baker also tackles this issue in an article with Wesley Widmaier (A. Baker and Widmaier 2014), where they note emerging evidence that demonstrates the costs of excessive financialisation to wider macroeconomic performance.

Consensus is also proving to be elusive in terms of the choice, calibration, and effectiveness of macroprudential policy tools. Differences in the choices of macroprudential tools are based on which dimension of risk is targeted and how the choice should be contingent on country- and context-specific factors. Risk has both time-series and cross-sectional dimensions. The former looks at the

---

<sup>39</sup> There are instances wherein the objectives of macroprudential policy and characterisation of financial stability are clearer (see Rosengren 2011, cited in Kashyap, Tsomoco, and Vardoulakis 2014, 22); however, this kind of clarity in the description of macroprudential policy and financial stability is a rare occurrence in the existing literature. In general, ambiguity and fluidity are the dominant features of the debate.

procyclicality of risk or its evolution over time. On the other hand, the cross-sectional dimension of risk stresses the distribution of risk in the financial system at a particular point in time and the common exposures due to balance sheet interlinkages. An important point to note is that the relative importance of these risk dimensions and the usefulness of the chosen tools vary depending on country- and context-specific factors, including the degree of financial development, the type of balance sheet vulnerabilities or composition of liabilities, the exchange rate regime, and the prevailing sources of risk (FSB, IMF, and BIS 2011). Whilst the overall effectiveness of risk models embedded in macroprudential policies is still under investigation, many of the recommendations on the use of macroprudential policies draw from risk models to determine systemic risk surcharges and bank capital (Danielsson et al. 2016). Systemic risk models are thus fundamental to the design and implementation of macroprudential policies.

#### *6.4.2 Reconciling expectations with limitations*

Part of macroprudential policy's appeal is in the absence of controversy surrounding the packaging of its non-traditional position. It may appear to challenge orthodox views and promote a fundamentally different understanding of the operation of the financial system but the policies advocated are 'presented as a series of relatively narrow interventions driven by technical readings of systemic data patterns' (A. Baker 2015, 21). Its highly technical nature and its strong backing by the central banking community lend macroprudential policy a credibility and authority that makes it readily accepted and politically non-threatening. Hence, given the aforementioned importance of systemic risk models to macroprudential policy, there are significant parallels with the discussion in Chapter 4 on how the illusion of distance between the technical and political is constructed and maintained through methodological practices. As Baker argues, this has made it easier to overlook the methodological issues underlying the macroprudential policy project.

Firstly, there is a plethora of measurement problems. There is the ongoing puzzle of how financial stability (or instability) can be adequately measured and how (and whether) multiple measures of systemic risk can be reconciled. Borio also mentions the need to distinguish between financial instability and distress, wherein the latter is defined as an actual event whilst the former indicates that the conditions necessary to produce financial distress are sufficient. As for risk and contagion, measurements need to be able to distinguish between actual and perceived risk and contagion (Borio 2010; Borio and Drehmann 2009). Efforts to incorporate volatility are noted yet caution should still be exercised. Whilst it is expected that volatility would directly impact the probability of a crisis, volatility indicators (e.g., stock market volatility as measured through the Chicago Board of Options Exchange Volatility Index) still use historical data even though there is no guarantee that past relationships will hold in the future. Furthermore, evidence suggests that the level of volatility is not necessarily a reliable indicator but ‘unexpectedly high or low volatility’ would be a better measure. Analysis of such market-based data also shows that these indicators respond only after a crisis hits, therefore unable to be of much help when it is actually needed the most (Danielsson, Valenzuela, and Zer 2015).

Secondly, there is the danger of overlooking interaction and unintended effects. Not only is there a chance that macroprudential policies will inadvertently interact with other monetary or fiscal policies, there are also potential interactions between other macroprudential tools (e.g., interactions between capital-based instruments, LTV tools, and capital requirements). Efforts to constrain credit growth and asset concentration may also lead to the build up of risk elsewhere in the system (Freixas, Laeven, and Peydró 2015). Unintended consequences can also result from the implementation of financial regulations. This occurs when the rules and regulations which were created ostensibly to limit the build-up of systemic risk end up having the opposite effect as multiple rules can unintentionally have incompatible objectives and may interact in unforeseen ways (Systemic Risk Centre 2013b). This is already a challenge when

managing domestic financial stability; it becomes even more complicated when dealing with transboundary spillovers and spillbacks.<sup>40</sup> For instance, the mandatory clearing of OTC derivatives through central counterparties (CCP) may have inadvertently increased risk exposure as the failure of one CCP can cause widespread damage to global financial stability (Genito 2017). There can also be cases wherein macroprudential policy can be counterproductive in the long run as financial actors learn to capture regulatory reform in their own operations as a way to circumvent intervention (e.g., Basel II) (Erturk et al. 2011).

Thirdly, the first two problems obviously create modelling challenges. As mentioned in Chapter 4, mathematical modelling involves struggling to find that elusive balance between precision and accuracy, and negotiating ontological and technical constraints. In relation to the discussion on knowledge limitations in Chapter 3, market and behavioural interactions are also not fully understood and therefore not adequately captured in existing models (if at all possible). Another important issue is the need for models to be both ‘thermometers’ and ‘barometers’ in the sense that it is crucial that modellers and users both know whether the models are portraying current conditions or are giving a picture what may happen in the future. Time horizons are also a cause for concern as there are lag effects that need to be taken into consideration and their interaction effects must also be accounted for. A bigger danger involves the contradictory nature of certain indicators. In the case of systemic risk, tools which are effective in addressing the time dimension of risk are useless in terms of the cross-section dimension, and tools which are effective in the cross-section actually give the wrong signals in the time dimension (Borio and Drehmann 2009; Borio 2010).

Finally, whilst much has been said regarding the complexities surrounding sectoral spillovers, the issue of transboundary spillovers has largely escaped both technocrats’ and academics’ attention. Granted, transboundary spillovers

---

<sup>40</sup> Spillback is a new term used by the IMF and BIS to refer to situations wherein policies in one country spills over to others and creates a negative feedback effect on the source of the initial spillover (Caruana 2015; Lagarde 2016).

are now a crucial part of IMF and AMRO surveillance coverage. However, to the extent that experts have been critical and reflexive about the plethora of methodological uncertainties plaguing macroprudential policy, they have been silent on the methodological problems surrounding attempts to trace and measure transboundary spillovers.

Despite all these issues, the technical appeal of macroprudential policy persists as it is able to acknowledge and accommodate methodological complexities and uncertainties. These are used to justify a broader scope for technical intervention, whilst also stressing macroprudential policy's limitations in ensuring global financial stability. In a 2013 speech, IMF Financial Counsellor and Director of the Monetary and Capital Markets Department José Viñals stressed that implementation of macroprudential policy 'will rely on a process of trial and error for some time' (Viñals 2013). Whilst Viñals is upfront about the IMF's reservations about the effectiveness of macroprudential policy, this is portrayed as a temporary roadblock given the current state of knowledge about systemic risk and spillovers. After 'a long learning process', knowledge 'gaps' that impede existing risk analysis will be overcome. Yet the aforementioned list of methodological issues suggests that there are more fundamental knowledge limitations at play in efforts to assert technical control over global financial stability. Attempts to anticipate and capture volatility or unintended consequences in models for macroprudential policy may be futile at best, or damaging at worst.

Furthermore, the persistence of the highly technical interventions in surveillance and macroprudential policy is compounded by the proliferation of overlapping surveillance frameworks. This is due to the rise of regional surveillance in East Asia. In this context, AMRO may appear as a site for addressing methodological complexities and uncertainties as it offers alternative surveillance toolkits. However, AMRO surveillance also adds to the methodological ambiguities and serves as a site for political manoeuvring given the region's long-standing ambivalent relationship with the IMF. As the scope of

both regional and global surveillance expands and the objectives of macroprudential policy remain both vague and ambitious, post-crisis surveillance has created more opportunities to widen the fictional gap between the technical and political, as discussed in Chapter 4.

## **6.5 Conclusion**

With the introduction of the 2012 Integrated Surveillance Decision, the IMF was given the mandate to expand the scope of its surveillance analysis. The 2012 Decision also gave the Fund the green light to make more overt assertions regarding the need for member countries to be mindful of the external impact of their domestic policy decisions. Whilst the principle of external accountability has driven the evolution of multilateral surveillance since its inception, the dynamics of policy justification under this principle has changed due to two particular changes in global economic governance that ensued as a result of the 2007 crisis. The first is the rise of AMRO surveillance, which effectively gave East Asian countries their own platform for policy justification. The second is the emphasis on macroprudential policy, as it highlights the need to analyse spillovers and contain systemic risk. As a supervisory orientation, macroprudential policy does present an appealing agenda. However, as a technocratic regulatory project, its potential is diminished by the many methodological issues it faces.

Chapter 6 argued that these two developments aggravate the difficulties of holding countries accountable to the wider international community. The regional and global surveillance frameworks described in this chapter serve to displace accountability in global economic governance in several ways. Firstly, the overlapping jurisdictions of IMF and AMRO surveillance and the divergence in their respective objectives create different interpretations of what contributes to global stability and regional resilience. In theory, these two goals are not mutually exclusive; however, as previously discussed, surveillance findings are

also political statements on economic growth. Secondly, such political statements are made with two objectives in mind. In the case of East Asia, policy justification is made to strengthen domestic legitimacy and international credibility. However, the significance of these dual objectives is diminished due to the technical representation of surveillance findings. Thirdly, the technical representation of surveillance analysis is vital for it to be deemed legitimate, but the expertise required for such analysis is also underpinned by political and relational knowledge. For East Asia, this knowledge is largely shaped by its ambivalent relationship with the IMF. Finally, technical representation of economic policy remains *de rigueur* for it to be accepted in global economic governance. Yet, in so far as macroprudential policy is concerned, the validity of its technical representation is compromised by methodological complexities, uncertainties, and ambiguities.

As seen from this chapter, we are witnessing the growth of an increasingly dense and complicated framework for monitoring spillovers and regulating systemic risk. The importance of methodological issues has been recognised by academics and policymakers, yet these same concerns fuelled the further expansion of technical control over the financial system. Drawing from the arguments developed in Chapters 3 and 4, this chapter claims that the reasons for this expansion are explained by the mutually constitutive link between the technical and political, specified in the five points listed in the previous paragraph.

# CHAPTER 7

## ***Systemic Risk and Spillover Analysis: Blurring and Reifying Dichotomies through Mathematical Models***

---

### **7.1 Introduction**

As ‘an imperfect understanding of macrofinancial linkages’ was deemed to be the ‘key reason that many institutions, including the Fund, did not foresee the crisis’ (IMF 2017a, 3), the expansion and proliferation of regional and global surveillance frameworks can be seen as just another step in the necessary pursuit of analytical rigour. Yet alongside this movement is also a growing realisation of the challenges of achieving a ‘perfect understanding’ of such linkages. Chapter 6 underscored the methodological complexities and uncertainties intrinsic in the macroprudential policy project. In light of these concerns, a subtle shift in tone can be gleaned from recent IMF surveillance documents, with its emphasis on the need for a pragmatic approach towards surveillance and policy advice. However, this pragmatism is not an indication of a weakening faith in mathematical models; rather, it is driven by the acknowledgement of ‘knowledge and data gaps’ and ‘the diversity of financial systems across countries and a wide range of transmission of channels’ (IMF 2017a, 7). The IMF may concede<sup>41</sup> ‘the difficulties of embedding the financial sector into traditional modelling frameworks’ (IMF 2017a, 29–30) but these problems are mainly framed in terms of knowledge gaps, as opposed to the more fundamental issue of knowledge limitations (see Chapter 3).

---

<sup>41</sup> Similar realisations apply in the IMF’s work on fiscal policy as Fund staff acknowledge the need to account for issues such as non-linearities and hysteresis in models, as well as the difficulties of doing so (Clift 2018).



In response to these knowledge gaps, the IMF and AMRO have developed a range of mathematical models to underpin the spillover analysis in their respective surveillance reports. This chapter examines the specific case of spillover models used by the IMF, ADB, and AMRO after the global financial crisis, and how distinct geographical and sectoral categories persist alongside acknowledgement of deepening and growing interdependencies. As raised in Chapter 4, discrete geographical and sectoral categories are fundamental to the modelling process due to the ontological and technical constraints imposed by mathematical formalism. These constraints determine how ‘the economy’ is represented. The rationale for the use of such categories is also reflected in how various discursive strands on the causes of and solutions for economic growth and decline in East Asia (as outlined in Chapter 2) are underpinned by a discussion of whether the causes and solutions should be treated as internal or external, whether they lie in the real or financial sector, or whether they are within the domain of the state or the market.

Chapters 5 and 6 showed how lessons from the global financial crisis challenged conventional understandings of these categories, as the depth and breadth of interdependencies and feedback loops were revealed. There has been some progress in understanding these links; however, these mechanisms cannot be properly translated into mathematical models because of ontological and technical constraints. As argued in Chapter 4, commitment to mathematical formalism imposes a range of constraints (e.g., with respect to ontological presuppositions concerning how ‘the economy’ works and how this can be translated into a working model) that determine how mainstream economists develop mathematical models. The inherent limitations of such models have been recognised, but this realisation has only led to the proliferation of various spillover models rather than a more cautious and critical approach towards their use. Chapter 7 draws on the discussions from these previous chapters to illustrate how they apply in IMF, ADB, and AMRO spillover models.

The chapter is organised as follows: Section 7.2 examines the specific case of spillover models used by the IMF, ADB, and AMRO, and traces how ontological and technical constraints are negotiated in the modelling process. Section 7.3 analyses how the results of these spillover models have been translated into surveillance reports and policy recommendations. Two case studies are covered to illustrate different implications for policy justification and external accountability, depending on how geographical and sectoral categories are represented in spillover models. To address the former, the discussion will focus on the 2017 IMF Regional Economic Outlook for Asia and the Pacific and the 2017 ASEAN+3 Regional Economic Outlook. As for the latter, the analysis will tackle deliberations on debt sustainability in China as reflected in the 2017 IMF Article IV Consultation report for China and the AMRO working paper *High Corporate Debt in China: Macro and Sectoral Risk Assessments*.

It was argued in Chapter 4 that modelling involves making deliberate choices to comply with the demands of mathematical formalism. However, in the case of surveillance, these choices effectively also set the boundaries on what ‘the economy’ is and what the state has jurisdiction over. Hence, the spillover models covered in this chapter are both technical representations of and political statements on the sources of and risks to economic growth. In the first case study, the surveillance reports of IMF and AMRO offer different assessments of internal and external risks. In the second case study, IMF and AMRO offer similar evaluations of the level of debt in China, but provide diverging analyses as to whether this is public debt or not. Whilst these distinctions are important, it is important not lose sight of the broader implications in terms of policy justification and external accountability. As both sides foreground the technical credibility and authority of their respective analyses, any disagreements that may arise can be reduced to apolitical methodological differences. Taken separately, spillover models may help define accountability in global economic governance; however, the proliferation of overlapping surveillance frameworks effectively displaces accountability.

## **7.2 Reasoning behind the design and development of spillover models**

With the introduction of the 2012 Integrated Surveillance Decision and the rise of macroprudential policy, both the IMF and ASEAN+3 (through ADB—one of the organisation’s key sources of technical assistance—and AMRO) are placing more importance on spillover analysis and are developing different mathematical models to support this. Official surveillance outputs do not necessarily draw from all these models. Nonetheless, many of the key findings and policy recommendations in the main surveillance reports of these institutions use one or several of the spillover models created by their staff. Examining the methodological details of these models as outlined in working papers and other supporting policy reports offers a glimpse into the rationale and process behind the development of spillover models in the IMF and AMRO.

This section will review the various initiatives undertaken by the IMF, ADB, and AMRO to measure and monitor the transmission of shocks within and across sectors and across borders. A wide range of studies (albeit not exhaustive) is covered to analyse how their respective staff theorise and construct not just spillover models (when specifically labelled as such) but others which trace similar processes (e.g., financial contagion, business cycle synchronisation) as well. As methodological strengths and limitations are outlined and justified, the modelling choices give us insight into how modellers accommodate and navigate the complexities and uncertainties of accurately measuring and monitoring spillovers. Whilst the IMF, ADB, and AMRO have developed different models, there are still important similarities in how these institutions approach the modelling process and draw policy implications given their shared emphasis on mathematical formalism. These underlying similarities will be unpacked to challenge the notion that the proliferation of different models is a sign that global economic governance is on the path towards normative fragmentation (Sohn 2012). Rather, the packaging of such ‘fragmented norms’ as part of a broader apolitical technocratic project should be examined as an exercise in policy

justification represented in the internationally accepted form of mathematical models.

### *7.2.1 Model overview*

In Chapter 3, we discussed the post-crisis debates on mathematical modelling and underscored how economists overcame any reservations they had about the ‘artificial realities’ depicted in their models, as long as these models are ‘useful tool[s] for whatever purposes there may be’ (Mäki 2001a, 10). This is the same logic underlying the modelling process in the IMF, ADB, and AMRO. The model overview that follows illustrates how the economists in these institutions acknowledge the shortcomings of their respective models and explain them as a necessary compromise given the strictures of mathematical formalism. However, whilst these models are united in their compliance with the standards for mathematical formalism, all spillover models are developed with a specific policy objective in mind.

The aspects of the modelling process which are highlighted in the following discussion shed light on how IMF, ADB, and AMRO economists make particular methodological choices to address particular policy objectives. Within these parameters, model specifications reflect what these institutions (as represented by the economists) consider as harmful/harmless falsehoods and significant/insignificant truths (see Chapter 4).

#### *7.2.1.1 IMF models*

In light of the Fund’s mandate to ensure global economic and financial stability, IMF spillover models tend to focus on global interdependencies. This is clearly a daunting task considering the country coverage and transmission channels that fall within the IMF’s purview. Even as far back as the late 1980s, the IMF was already concerned about spillover effects, but this was mainly confined to the impact of shocks or policy changes in advanced economies. The MULTIMOD was built to support global analysis in the WEO and designed specifically to ‘generate plausible and consistent scenarios’ (Isard 2000, 7)

following pre-determined shocks or policy changes, such as a change in oil prices or a drop in capital flows. Earlier IMF documents outlining the design philosophy behind the modelling process emphasise the need to build models strictly for its intended use (e.g., either simulation or forecasting). The importance of ‘translating policy questions in meaningful ways’ (Isard 2000, 22)—that is, policy questions should be defined as exogenous shocks—is also underscored. With this approach, the IMF acknowledged that different policy issues require the construction of different models. After the global financial crisis, it became clear that even the same policy issues can be analysed using different models (IMF 2017a). Coupled with the realisation that models also needed to take into account cross-border and cross-sector linkages, the Fund’s analytical toolkit expanded even further with the addition of a growing list of models.

One of the main models in the IMF’s current toolkit is the Global Economy Model (GEM). GEM was one of the forerunners of large-scale DSGE models based on a microeconomic framework with optimising consumers and producers. It incorporates nominal and real price and wage rigidities and combines it with aggregate supply and aggregate demand and full trade and financial integration. The synthesis of the microeconomic foundations with macroeconomic features ‘creates a coherent theoretical structure for the analysis of global interdependencies, with clear mechanisms for shock transmission’ (Botman et al. 2007, 5) even at short-run quarterly intervals. The focus on developing a ‘satisfactory initial representation of international macroeconomic interdependencies’ (Botman et al. 2007, 4) imposes certain theoretical limitations to ensure that the model does not become ‘too much of a “black box”’ (Bayoumi 2004, 24). In this case, the criticisms regarding DSGE model’s unrealistic theoretical foundations (as raised in Chapter 3) are overlooked to maintain clarity and coherence.

The Fund acknowledges the limitations given GEM's theoretical structure. The choice between using a representative-agent<sup>42</sup> framework and the inclusion of nominal and real rigidities was seen as a compromise between analysing short-term and long-term dynamics (Botman et al. 2007). The Global Integrated Monetary Fiscal Model (GIMF) was designed with these concerns in mind, as the IMF Research Department sought to build a multi-country macro model with overlapping-generations households<sup>43</sup> instead of a representative agent facing an infinite planning horizon. Similar to GEM, GIMF is also a DSGE model but it differs with its intertemporal stock-flow accounting. This allows the depiction of a global economy where private saving behaviour and fiscal policy shape both short- and long-run conditions, and countries can be long-run creditors or debtors. Spillover channels are clearly articulated and determined by bilateral trade linkages, uncovered interest parity, and long-term trends in the world real interest rate (D. Anderson et al. 2013). Simulations using GIMF feature prominently in WEO scenario analyses as well as other IMF risk assessment studies since 2008. The model is also being used outside the walls of the IMF, with the Hong Kong Monetary Authority taking the lead in East Asia. Other central banks in the region have also indicated interest<sup>44</sup> in using GIMF for their own policy simulations (Kumhof et al. 2010). Despite the GIMF's wide use, it is important to point out the political significance of choosing between short- and

---

<sup>42</sup> Representative agent models generate economic outcomes based on the optimising behaviour of a single individual assumed to have fixed and exogenous preferences. Possible variations between individual and aggregate behaviour are not accounted for (Janssen 2008).

<sup>43</sup> In an overlapping-generations framework, the economy is assumed to operate on an infinite horizon; choices made in the present-day hinge on expectations about future outcomes which are imposed exogenously (Janssen 2008). Models based on this framework are useful for capturing possible interactions between different generations, as well as for investigating changes in national debt.

<sup>44</sup> The reception of policy officials towards macroeconomic modelling in the IMF is varied. In general, those who collaborated with IMF staff to refine models to fit their respective countries' particular context are more positive. Others have noted that 'the models seemed to come out of a black box and they expressed concern that models have been used in ways that did not fit their own countries' circumstances' (IEO 2011b, 12).

long-term considerations, especially if the model is used by elected government officials to justify policy recommendations.

Due to the incorporation of full structural detail and the tracking of bilateral trade flows of multiple goods, the number of countries that can be included in both GEM and GIMF is significantly restricted. The Flexible System of Global Models (FSGM) addresses this problem as each of its three core modules can accommodate 24 countries/regions (compared to six in GEM and GIMF).<sup>45</sup> The creation of FSGM supports the G-20 Mutual Assessment Programme (Andrle et al. 2015), a framework for policy collaboration that seeks to assess whether the policies of G-20 countries are ‘collectively consistent with more sustainable and balanced trajectories for the global economy’ (G-20 2009). However, a wider country coverage also meant that FSGM has to sacrifice some of the structural details found in GEM and GIMF. Some of the microeconomic features (e.g., in terms of private consumption and investment) have been retained but other variables (e.g., trade, labour, and inflation) appear in the model as reduced-form components (Andrle et al. 2015). Whilst it is acknowledged that ‘giving up structure comes at cost in terms of economic tractability and coherence’ (Andrle et al. 2015, 4), IMF staff point out that this creates room to include more variety in the behaviour of each country than possible with the usual DSGE models. For purposes of G-20 objectives, allowing for wider country coverage and inclusion of country specificities were deemed as more important.

However, none of the models discussed thus far account for feedback effects and nonlinearities. Conventional linear DSGE models are also ill-equipped at analysing macroprudential policies. As seen during the global financial crisis, interactions and nonlinearities between bank lending, asset prices, and the real economy can amplify the effects of shocks. DSGE models generally do not capture these nonlinearities, and do not consider the role of banks in propagating these

---

<sup>45</sup> The G-20 module includes an individual block for each G-20 member and four more to cover the rest of the world. The euro area module consists of 11 euro area countries in addition to 13 other blocks. The emerging markets module contains more blocks to represent different emerging market regions and economies (Andrle et al. 2015).

vulnerabilities (Benes, Kumhof, and Laxton 2014a). Whilst linearisation can be useful in tracing the impact of shocks (and related economic policies that respond to such shocks) under normal circumstances, it is unreliable during crisis periods (Benes, Kumhof, and Laxton 2014b). With these limitations in mind, the IMF designed the MAPMOD model as a small open economy with a representative competitive bank constituting the financial sector. The specification of the role of banks and balance sheets are central to MAPMOD; the model's main feature (in contrast to conventional linear DSGE models) is its ability to integrate nonlinear and endogenous feedback mechanisms between borrower balance sheets, bank balance sheets, and the real economy. Spillovers from the financial to real sector as assumed to operate through credit expansions (Benes, Kumhof, and Laxton 2014a). As noted in Chapter 6, one important challenge in macroprudential policy is being able to differentiate between essentially sound and extreme asset price bubbles and credit expansions. MAPMOD was designed to address this issue, as well as explore alternative policy scenarios to both prevent and mitigate crises (Benes, Kumhof, and Laxton 2014a). Whilst MAPMOD represents a step forward in macroprudential modelling, depicting the financial sector as a representative bank with specific links to the real economy means that the model still maintains that the real economy and financial sector are self-contained spheres despite evidence (e.g., based on East Asia's experience) that this does not hold in reality.

Furthermore, although the design of MAPMOD enables it to incorporate nonlinear and endogenous feedback mechanisms between the real and financial sectors, it does not account for cross-border spillovers. IMF staff also use event study analysis to trace cross-border macrofinancial spillovers resulting from credit, liquidity, and sectoral macroprudential policy measures (Kang et al. 2017). Event study analysis was also used in the 2013 IMF Spillover Report, which focuses on tracing the spillover effects of policy uncertainty in the United States and Europe (IMF 2013a). IMF staff recognise the difficulties of trying to quantify policy uncertainty: one involves the need to verify the direction of



causality (i.e., policy uncertainty in the United States and Europe is not a reaction to events elsewhere) and the second relates to disentangling the effects of policy uncertainty from broader economic uncertainty (e.g., changes in consumer or business confidence). However, there is no acknowledgement of the contradictions in pre-determining the form and source of uncertainty for modelling purposes, an issue that was raised in Chapters 3 and 6.

IMF staff indicate that necessary tests and adjustments were undertaken to ensure that these issues are accounted for in the model. One such measure is the addition of control variables (e.g., volatility index). The impact of events was also studied in relation to changes in bond and equity flows in emerging markets and advanced economies. A Bayesian dynamic latent factor model was used to simultaneously estimate how 42 country factors, nine regional factors shared across aggregated groups, and a world factor common across all countries and regions (e.g., changes in global liquidity and risk conditions or specific crisis events) influence volatility in bond and equity flows (IMF 2013a). A different approach is taken in the 2015 IMF Spillover Report, which focuses on spillovers from monetary policies in systemic advanced economies.<sup>46</sup> In this case, the model seeks to measure the impact of good news of the growth prospects of systemic advanced economies on other countries. ‘Good news’ in this respect is estimated as ‘positive real shocks’,<sup>47</sup> reflected as an increase in both bond yields and stock prices (IMF 2015, 8). These recent attempts to quantify the impact of events and ‘news’ suggest a growing recognition within the Fund that the complexities of spillover effects cannot be captured by relying solely on traditional macroeconomic and financial variables, yet the challenge of ‘translating policy questions in meaningful ways’ usually means that these unconventional metrics still need to be represented in conventional ways.

---

<sup>46</sup> These include the euro area countries, Japan, United Kingdom, and United States.

<sup>47</sup> The other factors included in the model are money shocks (‘an unanticipated tightening of monetary conditions’) and risk shocks (‘changes in risk appetite’ linked to shifts in the volatility index) (IMF 2015, p. 8).

#### *7.2.1.2 ADB and AMRO models*

In East Asia, the modelling process puts less emphasis on theoretical coherence as compared to the IMF. Instead, the region's concerns are determined by past experiences and the impact of external factors. This links to a previously mentioned point of divergence between ASEAN+3 and the IMF, in that the former is preoccupied with regional resilience and the latter with global stability. Specifically, AMRO's mission is 'to contribute to securing the economic and financial stability of the region through conducting macroeconomic surveillance and supporting the implementation of CMIM' (AMRO 2017a, 2). Despite this difference, upholding the principle of external accountability in global economic governance means that these two goals intersect with each other. However, as mentioned previously, AMRO's motivations for upholding external accountability are driven by concerns regarding domestic legitimacy and international credibility.

ADB took the lead in the early years of regional surveillance so most of the models used to support surveillance were designed by ADB staff and consultants. With the establishment of the ASEAN Surveillance Process in 1998, ASEAN finance ministers tasked the Bank to provide training and capacity-building assistance to the ASEAN Secretariat and selected staff in the central banks and finance ministries of member countries. As mentioned in the previous chapter, regional surveillance in East Asia puts a heavy emphasis on model-based economic analysis as it 'allows an independent surveillance mechanism or unit to take a position on politically sensitive but critical issues and put them on the table for discussion' (ADB 2009, 56). ADB highlights the importance of model-based economic analysis in crisis situations as 'this is where an objective approach that allows for independent verification can be extremely useful' (ADB 2009, 56). The objectivity seen to be inherent in mathematical models provides 'both the right incentive and protection to encourage the staff of the independence surveillance unit to be candid in raising issues that authorities may find uncomfortable discussing openly' (ADB 2009, 57). Within the ADB, the

Regional Economic Monitoring Unit (REMU)<sup>48</sup> spearheaded the first attempt at developing a regional surveillance model. The VIEWS model is based on the work of Graciela Kaminsky and Carmen Reinhart<sup>49</sup> (1999) and adapted to suit the regional context.

ADB continues to support ASEAN+3 surveillance activities by assisting AMRO, particularly in terms of capacity building. The latest technical assistance project<sup>50</sup> aims to widen the scope of VIEWS' country and indicator coverage and upgrade the framework to VIEWS++. The upgrade was deemed necessary in light of the 'new sources of vulnerabilities emerging after the global financial crisis' (ADB 2016, 1). The project will 'use recent lessons learned and knowledge obtained about channels of contagion in East and Southeast Asia to assist policy makers...to gain a holistic understanding of the propagation mechanisms that amplify pro-cyclicality and vulnerability' (ADB 2016, 1). Whilst the project involves consultations with the BIS and the IMF, as well as an inception workshop to 'discuss global-regional best practices and techniques on financial vulnerability assessments' (ADB 2016, 3), relevance to the regional context is still emphasised as VIEWS++ is packaged as 'a new regional surveillance and vulnerability assessment tool that will be *better suited to the emerging economic and financial environment in Asia*' (ADB 2016, 4, italics added). Drawing on 'lessons learned and knowledge obtained about channels of contagion' and ensuring that they are based on objective model-based analysis depicts regional surveillance as an apolitical exercise. Yet, as discussed in Chapter 6, it should be noted that the lessons learned from the global financial crisis are still understood

---

<sup>48</sup> REMU was renamed the Office of Regional Economic Integration in 2005. It was subsequently subsumed under the former Economics Research Department, forming the Economic Research and Regional Cooperation Department in 2014. REMU was responsible for 'monitoring of economic and sector policies, conditions of financial markets, and macroeconomic performance in a regional/subregional context'. Its terms of reference also states that 'regional/subregional economic monitoring complements existing models of national and global economic surveillance' (ADB 2009, 60).

<sup>49</sup> Kaminsky and Reinhart are academic economists affiliated with George Washington University and the University of Maryland, respectively.

<sup>50</sup> In February 2016, ADB launched the project 'Enhancing Regional Capacity for Economic Surveillance and Financial Vulnerability Assessment' (ADB 2016).

in terms of the lessons learned from the Asian financial crisis. Against this backdrop, the continued reference to the 'IMF stigma' belies the portrayal of regional surveillance in purely technical and apolitical terms.

Nonetheless, East Asian surveillance remains wedded to model-based analysis, and the 2007 crisis spurred interest in spillover analysis within ADB and AMRO as it did in the IMF. One such study examines 'the threat of financial contagion' emanating from shock and volatility spillovers in bond markets in advanced economies to bond markets in emerging Asian economies (Azis et al. 2013). The analysis is based on a multivariate Generalised Autoregressive Conditional Heteroskedastic<sup>51</sup> model, chosen due to its ability to accommodate irregularities usually found in financial time series data. The model is used to estimate direct and indirect spillovers from advanced economies to emerging Asian economies, as well as cross-Asian-market spillovers from the Japanese government bond market. For direct spillovers, the main sources of shocks were the US Treasury and US corporate bond markets for the Lehman collapse period, and German Bunds, EU composite government bonds, and European corporate bonds for the Eurozone debt crisis period. The same applies in the analysis of indirect spillovers but instead of just looking at the impact on local bond markets in emerging Asian economies, it also considers the impact on domestic equity, domestic currency, and domestic money markets. The decision to include indirect spillovers in the study was borne out of the recognition of interactions and feedback mechanisms during crisis periods. However, the analysis disregards indirect cross-border transmission as it only looks at transmission across domestic asset markets. In this study, the focus on specific advanced economies as sources of shock and volatility reflects East Asia's concerns about securing regional growth and resilience against global risks, whilst dismissing

---

<sup>51</sup> A Generalised Autoregressive Conditional Heteroskedastic model is a popular tool for analysing and forecasting volatility in financial time series (Fryzlewicz 2007). This econometric model contains a more flexible structure that allows conditional variance to vary across time based on past errors (Bollerslev 1986).

the growing impact of emerging economies (especially China) on global conditions (Mwase et al. 2016).

Another ADB study approaches spillover analysis through the concept of ‘decoupling’. The decoupling debate that emerged after the global financial crisis offered different views as to whether emerging economies were still dependent on US markets for their own economic growth (The Economist 2009a). ADB staff examined the validity of the decoupling hypothesis by measuring macroeconomic interdependence between emerging East Asia <sup>52</sup> and G-3 economies (European Union, Japan, and the United States). Findings were used to inform two policy questions:

‘In a narrow setting, it is a question of whether or not the regional economy will maintain strong growth regardless of the US slowdown in particular. In a broader sense, it is about the emergence of regional economic dynamics in emerging East Asia that is independent of economic swings in major industrial countries’ (C.-Y. Park 2017, 1).

A combination of different quantitative methods are employed to address these questions, including export decomposition, bilateral business cycle correlations, VAR, Dynamic Conditional Correlation (DCC), and variance decomposition. Trade, investment, and financial linkages are analysed using a VAR model (see Chapter 3 for overview of VAR). This model estimates the impact of different structural shocks (e.g., global financial risk, US output, Chinese output [used to represent a regional shock], and global trade volume growth) on each country’s output. These shocks are assumed to be uncorrelated although no empirical justifications are offered; the ordering of the variables (i.e., the sequencing of the effects which are taken to be linear) are ‘regarded as a natural one’ (C.-Y. Park 2017, 24). Whilst these assumptions are clearly debatable—especially considering the impact changes in Chinese output have on the global economy (Mwase et al. 2016)—working within the constraints of VAR models

---

<sup>52</sup> The study defines emerging East Asia as China, Hong Kong, Indonesia, Malaysia, the Philippines, Singapore, Taiwan, and Thailand (Park 2017).

mean that such flawed assumptions are unavoidable due to the need to adhere to modelling restrictions.

Financial linkages are examined using the DCC model on equity and bond market returns, a new method that is capable of ‘simultaneous modelling of variances and conditional correlations of several series’ (C.-Y. Park 2017, 15). The results allow users to ‘infer how the region’s financial markets move in relation to financial fluctuations in these systemic countries’ (C.-Y. Park 2017, 15). Variance decomposition is used to determine the extent to which regional or global shocks can explain the variance in emerging East Asia’s equity and bond market returns. The model for this is constructed such that the returns of individual equity (bond) markets reflect an expected and unexpected component. The error terms from the former constitute the latter, which is then disaggregated into a local shock, a response to regional news, and a response to global news. The findings from this study formed the basis of the financial spillovers analysis of the ADB Asian Economic Integration Report 2017.<sup>53</sup> Whilst this model is sophisticated in its attempts to distinguish between local, regional, and global factors, the issue here is that there is no consideration of the possibility that there are links between these three categories.

The ability of VAR models to capture the evolution and transmission of shocks along multiple time series makes it a useful model for many of the policy issues tackled by the ADB (including productivity shocks and food and commodity prices). However, as with all other models, VAR has methodological limitations particularly in terms of analysing global interdependencies within a

---

<sup>53</sup> Whilst ADB reports served as the main output of regional surveillance since it began in East Asia, ADB is slowly making efforts to create more specialised reports, possibly to make room for AMRO’s own surveillance reports. Since 2015, the Bank has been publishing the Asian Economic Integration Report, which focuses on the ‘progress of Asian governments’ efforts to integrate their economies and improve cooperation on a variety of levels’ (ADB 2017). Aside from trade and financial integration, coverage includes trade policy and movement of people.

structural framework.<sup>54</sup> This can be seen as an acceptable shortcoming from the perspective of East Asian policymakers as their focus is not on global interdependencies but on the transmission of shocks to regional economies.

ADB staff now also use the global VAR (GVAR) in response to these constraints. One such study uses a GVAR model to forecast key macroeconomic variables (e.g., real GDP, inflation, and short-term interest rates) of the ASEAN-5<sup>55</sup> countries given the effects of three external shocks (proxied by changes in US real equity prices, US interest rates, and world commodity prices) (Han and Ng 2011). The purpose of this study was not to address a particular policy issue but to demonstrate the accuracy of GVAR forecasts compared to those generated by VAR models. The appeal of GVAR also reached AMRO as it used a similar model in the spillover analysis of its first regional surveillance report. This will be discussed in greater detail in the following section.

### *7.2.2 Different models, similar approach*

This survey of IMF and ADB/AMRO spillover models shows how the economists affiliated with these institutions deliberate over their methodological choices and choose between deleterious/innocuous falsehoods and relevant/irrelevant truths. As IMF and ADB/AMRO economists must comply with the requirements of mathematical formalism, their approach towards dealing with the ontological and technological constraints of modelling is driven by their respective policy objectives, which consequently determine ‘permissible’ falsehoods and ‘insignificant’ truths. In light of IMF’s mandate and the lessons East Asian policymakers have drawn from the region’s experience with financial crises, the points of divergence (e.g., focus on global interdependencies in the case of the Fund, concern regarding impact of external

---

<sup>54</sup> A structural VAR model is one that is constrained by specific economic structures, rendering it more sensitive to changes in theoretical assumptions and parameter estimates (Han and Ng 2011).

<sup>55</sup> These are the original ASEAN member countries, namely Indonesia, Malaysia, Singapore, Thailand, and the Philippines.

factors in the case of East Asia) that were outlined above are expected. However, it is important not to dismiss the areas of convergence.

As mentioned earlier, one of the objectives driving regional surveillance in East Asia is the need to develop surveillance tools that are 'better suited to the emerging economic and financial environment in Asia' (ADB 2016, 4). This suggests a departure from IMF surveillance tools; the different models outlined above appear to support this. However, a closer look reveals notable overlaps between the models used by IMF and ADB and AMRO staff. One of IMF's early warning system models is also based on the work of Kaminsky and Reinhart (Berg, Borensztein, and Pattillo 2004), the same economists who developed the model ADB's VIEWS is drawn from. A more recent example can be seen in the financial GVAR model used by AMRO as this model is based on an IMF working paper (Chen et al. 2010).

This should not come as a surprise given the discussion of the modelling process presented in Chapter 4. The commonalities in theoretical and academic influences show how IMF and ASEAN+3 economists all belong to the same closed community of experts, where the terms of dialogue and quality of work are determined by adherence to mathematical formalism. As a result, similarities can be observed not just in the choice of models but also in the underlying theoretical assumptions of these models; its treatment of linkages and interdependencies; its approach towards the trade-off between precision and accuracy; and its methods for quantifying surprises, volatility, and uncertainty.

On the underlying theoretical assumptions of the cited models, both IMF and ADB/AMRO models can be criticised on the grounds that their models fall significantly short of accurately representing reality. Whilst proponents of such models argue that incorporating microeconomic foundations gives the model structural coherence, basing macroeconomic models on microeconomic



foundations is also problematic<sup>56</sup> as the latter is biased towards individual interests instead of public welfare (Best and Widmaier 2006). Watson (2014) also criticises DSGE as it promotes a political narrative that supports a particular imaginary or interpretation of the economy—one that provides little or no role for the government. In the case of GEM, IMF staff recognise some of these issues as they note that the assumption of a representative agent constrains the model in terms of analysing income inequalities (Bayoumi 2004). The concern is this critical shortcoming is sacrificed as they put more weight on ‘the need for theoretical consistency’ (Bayoumi 2004, 9).

On the other hand, ADB and AMRO’s preference for VAR can also be criticised as these models are perceived as atheoretical, as previously mentioned in Chapter 3. VAR models emerged as a response to scepticism about the validity of a priori theoretical restrictions embedded in general equilibrium and rational expectations modelling. In certain applications, such models have been useful but in terms of impulse response (shock transmission) analysis and variance decomposition, identifying conditional correlations rely on causal ordering. This can be justified ‘under a predeterminedness assumption which is unstable in the absence of prior restrictions derived from theory’ (Cooley and Leroy 1985, 301). Even when making a distinction between structural or non-structural VAR models (where the ADB GVAR is purportedly somewhere in between):

‘...whether VAR models are interpreted as structural or non-structural, which given the looseness of exposition, is largely a matter of the personal preference of the reader. If the models are interpreted as structural... the restrictions on error distributions adopted in atheoretical macroeconometrics are not arbitrary renormalisations, but prior

---

<sup>56</sup> With respect to policy implications, there is also a lack of agreement on the relationship between microprudential and macroprudential policy. For example, there is no clear agreement on whether macroprudential policy should be considered as a separate policy strand in itself (FSB, IMF, and BIS 2011). There are those who believe that the variations are mostly semantic as long as prudential policy frameworks explicitly target systemic risk. Even Borio holds that ‘the term “macroprudential” does not refer so much to a new policy but to an intellectual orientation or lens through which the task of achieving financial stability is understood’ (Borio 2014, 31).

identifying restrictions. As such, they require justification from theory. Failing such justification (and it is seldom offered), the conclusions are equally without support' (Cooley and Leroy 1985, 307).

Despite ADB staff's claim that their understanding of the causal ordering of shock transmission should be 'regarded as a natural one' (C.-Y. Park 2017, 24), assuming a linear transmission of shocks from US output, global volatility, global trade volume, to Chinese output can be construed as a political view of the sources of risk in the global economy.

Theoretical assumptions are also important in relation to how models represent linkages and interdependencies—across sectoral (state vs. market, real vs. financial) and geographic (internal vs. external, local/regional vs. global) categories—as these have implications in terms of the conclusions drawn regarding causality. As outlined in Chapter 2, these technical categories are driven by political distinctions that have shaped how such categories are perceived in East Asia. At the same time, whilst nonlinear models are now being used and feedback effects incorporated in certain models, technological constraints such as modelling practicalities create restrictions in terms of how these complex mechanisms can be operationalised. Moreover, as raised in Chapter 6, these mechanisms are still poorly understood; the need to account for unintended consequences also suggests that completely capturing such mechanisms is just not possible despite the pretence that new models are capable of going so.

These issues have important consequences in terms of how the IMF and ADB/AMRO navigate the trade-offs between precision and accuracy. As repeatedly reiterated throughout this thesis, such compromises are a fundamental part of the modelling process. Nonetheless, the approach both sides have taken in constructing their respective models (e.g., prioritising 'theoretical consistency' whilst dismissing income inequality in the case of the IMF) and define certain variables (e.g., how 'regional' and 'global' shocks are defined by the ADB) are political as well. The trade-off between precision and accuracy is also

reflected in the methods employed to incorporate variables such as uncertainty, volatility, and surprises. Instead of accepting fundamental knowledge limitations, these spillover models give the impression that such nebulous indicators can be accurately accounted for. At the same time, the nature of modelling means that economists can also justify their portrayal of artificial realities as an inevitable outcome of complying with mathematical formalism.

That said, these are problems that plague model-based analysis in general. The issue in this context is not whether one side offers a better model over the other; the relative usefulness of these models is not being evaluated here. Rather, the main point of interest is how both the IMF and AMRO can use their respective model-based analyses to validate the ‘objectivity’ of their politically-laden policy recommendations, whilst using the same models to justify the limitations of their findings. The political dimensions of these issues are concealed as the sophistication and the technical details of these models are in the foreground. The spillover models are portrayed to be more effective at capturing complexities and uncertainties (relative to pre-crisis models) but this will always be incomplete given the nature and objectives of economic modelling, as well as the fundamental limitations of knowledge of the economy and financial markets.

### **7.3 Representing ‘the economy’ in IMF and AMRO surveillance reports**

The direct impact of financial and macroeconomic surveillance is mixed (IEO 2006, 2011b) and has yet to be verified (in the case of AMRO). Nonetheless, due to the endurance of the principle of external accountability, the relevance of surveillance continues as a platform for policy justification to the international community. As spillover analysis makes an implicit statement about the sources and recipients of risk, it can be interpreted as a strong message in this respect, especially when presented in official surveillance documents. When the AMRO reports are analysed against their IMF counterparts, we can also see echoes of the themes explored in Chapter 2. In particular, the spillover models featured in

these reports illustrate how the use and inaccurate portrayal of geographical and sectoral categories define acceptable accounts of economic processes and appropriate policy responses, whilst also validating the legitimacy of the authorities tasked to govern particular spaces. Hence, spillover models are a useful resource as they provide technical and purportedly apolitical support for policy justification. When overlapping spillover models emerge—as is currently the case with the expansion of regional and global surveillance frameworks—they facilitate the displacement of accountability in the maintenance of global economic and financial stability.

Whilst AMRO's operations started in 2011, it was only in 2017 when it started making its surveillance outputs public. As AMRO begins to assert itself as an independent regional surveillance unit, its work will inevitably overlap with the IMF's. Two documents—the 2017 ASEAN+3 Regional Economic Outlook and the working paper *High Corporate Debt in China: Macro and Sectoral Risk Assessments*—offer a glimpse into how AMRO complements and contradicts IMF surveillance. This section illustrates how IMF and AMRO's model-based spillover analyses can define and displace accountability in these two cases. The first case focuses on the implications of the debate between IMF and AMRO in terms of geographical categories and the attendant consequences for local/regional vs. global accountability. The second examines the repercussions of the debate in terms of sectoral categories and the concomitant ramifications for state accountability.

### *7.3.1 Geographical spillover analysis: global vs. regional surveillance reports*

IMF's area departments produce Regional Economic Outlook reports twice a year to provide a more detailed analysis of the state of the five major regional economies in the world.<sup>57</sup> A review of the highlights and policy recommendations and spillover analysis of the 2017 IMF Regional Economic Outlook for Asia and the Pacific and the 2017 ASEAN+3 Regional Economic

---

<sup>57</sup> The five regional groupings are Asia and the Pacific; Central, Eastern, and Southeastern Europe; Middle East and Central Asia; Sub-Saharan Africa; and the Western Hemisphere.

Outlook reveals some insights into how surveillance reports can define and displace accountability. Whilst the geographical coverage of these reports is not exactly the same, the significance of East Asian economies means that the IMF report devotes substantial analysis to the region and also includes a spillover model specifically for the ASEAN-5 countries.

The 2017 IMF Regional Economic Outlook for Asia and the Pacific gives the same level of consideration to the short- and medium-term challenges shaping the region's economic prospects. In terms of the former, the risks emanating from global uncertainty are recognised as the IMF warns:

'In the near term, tighter global financial conditions could trigger capital flow volatility, which could interact with and exacerbate balance sheet weaknesses in a number of economies. More inward-looking policies in advanced economies would significantly impact Asia, given the region's trade openness. A bumpier-than-expected transition in China would also have large spillovers' (IMF 2017d, xiii).

As for medium-term challenges, two chapters review the structural issues facing the region, specifically the aging population and slow productivity growth. Policy recommendations call for both demand support and structural reforms 'to help reduce external imbalances, mitigate domestic and external vulnerabilities, and promote faster and more inclusive growth' (IMF 2017d, xiv) such as labour market and pension system reforms. The IMF report also reiterates its position on exchange rate flexibility, arguing that it 'should generally remain the main shock absorber against a sudden tightening in global financial conditions or a shift toward protectionism in major trading partners' (IMF 2017d, xiv). This aligns with the general tone of the 2017 Global Financial Stability Report which calls for member countries 'to get the policy mix right...whilst avoiding politically expedient but ultimately inward-looking policies' (IMF 2017b, x). In particular, the IMF Regional Economic Outlook states that 'recent episodes of financial volatility have shown that even large reserve buffers can be insufficient to arrest such volatility' (IMF 2017d, 24). This is tantamount to saying that East Asia's

reliance on self-help mechanisms to preserve financial stability are misguided and will not suffice. The level of reserve buffers in the region remains a contentious issue as the Fund's ASEAN-5 Cluster Report states:

'The reserve buffers built up during the great moderation and UMP [unconventional monetary policies, specifically quantitative easing by the Federal Reserve] period were also drawn down in some cases close to the lower bound of the Fund's reserve adequacy metric range, albeit with a number of countries continuing to maintain reserves above the range, at significant quasi-fiscal costs' (IMF 2016a, 3).

The IMF's approach to spillover analysis supports this policy narrative of the importance of internal structural reform. The report uses a principal component model to determine the global variables that determine the variations in a set of domestic financial indicators and shows that, whilst 'domestic financial conditions in the ASEAN-5 economies are sensitive to global factors' (IMF 2017d, 29), domestic factors still play a significant role. Analysis of the determinants of sovereign bond yields in the ASEAN-5 before and after US UMP presents evidence that around 50-70% can be explained by domestic factors, with the exception of Singapore (40% both pre- and post-UMP) and Malaysia (40% but only pre-UMP).

The principal component model is based on a paper by Silvia Miranda-Agrippino and Hélène Rey<sup>58</sup>, which interestingly begins with the line '[w]e are not wedded to a model' (Miranda-Agrippino and Rey 2012, 3). The authors draw from several other models with different methodological approaches. Similar to the other IMF models discussed above, there are certain problematic features (e.g., assumption of procyclicality of leveraged financial intermediaries' balance sheets without accounting for emerging countercyclical measures and the

---

<sup>58</sup> Miranda-Agrippino and Rey were colleagues at the London Business School at the time their paper was released. Whilst Miranda-Agrippino has no affiliations with the IMF, Rey has a long history of working the Fund having worked as a Resident Scholar and participating in several lectures and conferences organised by the IMF (Rey 2018).

uncertainty regarding how banks will actually respond to these new regulations). In terms of accounting for common (regional or global) and idiosyncratic (local) factors, the two are estimated assuming that there is some degree of autocorrelation (i.e., the similarity between two variables are related to the time lag between them). It is beyond the scope of this thesis to determine whether this adequately captures feedback effects given the complex linkages and interdependencies between countries in the global economy. The more salient point is that these technicalities are obscured when policy findings highlight that ASEAN-5 economies are sensitive to global factors but domestic factors play a more significant role. Hence, IMF surveillance findings argue that the onus is on regional policymakers to enact politically-sensitive internal structural reforms, for both internal (to ensure continued growth and stability) and external reasons (to minimise external balances).<sup>59</sup>

This contrasts with the analysis presented in the ASEAN+3 Regional Economic Outlook. The foreword by AMRO Chief Economic Hoe Ee Khor is forthright about the report's focus on external shocks as he states:

‘[W]e have chosen to focus on how policymakers in the region have rebuilt buffers and policy foundations for economic growth after the AFC [Asian financial crisis] that enabled them to weather the ramifications of the subsequent GFC [global financial crisis]. These include developing more robust monetary policy frameworks against external shocks; undertaking financial, fiscal, and structural reforms; and the adoption of macroprudential measures to deal with financial vulnerabilities where appropriate...Mindful of the sharp increase in capital flow volatility and its destabilising effects, the ASEAN+3 members have come together to develop a regional safety net supported by enhanced macroeconomic surveillance

---

<sup>59</sup> It is worth noting that IMF's indication of both internal and external consequences differs from earlier reports. IEO commissioned a review of the IMF's Regional Economic Outlook reports between 2003 and 2009. In his assessment of the reports prepared by the Asia-Pacific Department, Montiel argues that the IMF failed to make a clear case to support the recommendations such that it addressed the self-interest of the Asian countries themselves, rather than merely highlighting the benefits in a global context (Montiel 2011).

which together with their own strengthened domestic policy frameworks and buffers, will improve resilience against shocks and allow their economies to sustain relatively strong growth’ (AMRO 2017b, 3).

The AMRO report recognises global policy uncertainties (with more direct references to the Trump administration and Brexit) similar to those mentioned in the IMF report; however, the focus is on the spillovers of these uncertainties to the ASEAN+3 economies through trade and financial channels. As befits the thematic focus on the 20th anniversary of the Asian financial crisis, the AMRO reports also underscores the relevance of the lessons from the 1997 crisis given the prevailing global uncertainties. One such lesson is ‘the need for a more flexible and responsive policy framework domestically, and also greater financial cooperation within the region to deal with external shocks’ (AMRO 2017b, 5). Structural reform is given relatively limited consideration; to the extent that it is analysed, its urgency is framed in the context of the external environment (i.e., the tapering growth of global trade) and the limitations of short-term demand management policies. On the subject of reserve buffers, whilst the report concedes that they:

‘are high by *conventional metrics*... these buffers should be maintained in the face of potential capital outflow pressures... exchange rate flexibility combined with judicious intervention to moderate the pace of adjustment would continue to be the appropriate response to risks of external shocks’ (AMRO 2017b, 5, italics added).

As for AMRO’s own spillover analysis, it uses a GVAR model to illustrate the impact of real and financial shocks from the United States, China, and Japan on emerging ASEAN+3 economies. The GVAR model for real shocks estimates the scale and transmission of unexpected shocks from these three countries in terms of short-term interest rates, imports, and industrial production growth rates. The GVAR model for financial shocks focuses on short-term interest rates, equity prices, and bank/corporate distress from the same countries plus the United Kingdom, but the coverage of the recipient countries excludes Brunei, Laos, and



Myanmar because of data unavailability. As ‘foreign’ variables are derived based on the other country’s domestic variables, the AMRO GVAR model ‘can describe the interactions of variables not only within a country but also between countries’ (AMRO 2017b, 63). Whilst the results show that real and financial shocks from all three countries have significant repercussions for regional economies (with real shocks from Japan being less significant), it does not make any specific reference to the role of domestic conditions—a sensitive topic given ASEAN’s norm of non-interference—as done by the IMF. The concern here is similar to the one raised earlier in reference to the IMF. The AMRO GVAR model assumes a certain ordering of causality when estimating these interactions between variables. Furthermore, it is also not clear that the wide network of not just financial and economic but also regulatory, technical, and political feedback loops can be captured (if ever) in the model.

Separately, IMF and AMRO spillover models *define* accountability as they perpetuate the domestic vs. global/internal vs. external divide in tracing sources of systemic risk, and consequently also drawing lines for causality and accountability. However, once the IMF and AMRO surveillance reports are interpreted as parallel accounts, their respective analyses *displace* accountability. This is because both the IMF and AMRO do not give explicit consideration to the possibility of feedback effects not captured in their respective spillover models in their discussion of policy recommendations. Despite indications of greater reflexivity amongst economists about the complexities and uncertainties in the global economy, the IMF’s status as the foremost technical authority on economic policy also means that reservations need to be moderated lest they compromise perceptions of IMF expertise. It is likely that the same concerns apply on the AMRO side, as East Asia is keen to assert its own technical expertise in matters of global economic governance. This is further aggravated by the need to package spillover analyses in mathematical models, as the rules for reasoning and representation in such models do not allow for the full incorporation of feedback effects as well.

### *7.3.2 Sectoral spillover analysis: IMF Article IV report vs. AMRO thematic study*

The preoccupation of post-crisis surveillance on interdependencies and feedback effects is not confined to spillovers across territorial boundaries; as stressed in the previous discussion on MAPMOD (and in greater detail in Chapter 5), spillover analysis is also increasingly concerned with incorporating the financial sector in models to better understand and monitor transmission mechanisms between the real and financial sectors.

One important link is a country's capacity to fund its policy objectives and manage any resulting debt, without resorting to disruptive and damaging adjustments that could jeopardise the country's stability. IMF and AMRO surveillance also covers such issues through their respective debt sustainability analyses. In this context, state boundaries and jurisdiction are still points of contention (similar to the first case) although the focus shifts from geographical to sectoral boundaries. Setting aside the theoretical and methodological implications of approaching the real/financial sectors and state/market divide as separate spheres, recall the discussion in Chapter 2 regarding the distinct and crucial role played by various East Asian states in mobilising funds into particular industries viewed as critical to economic growth. In the case of China, the symbiotic relationship between China's real and financial sectors is manifested in the way the Chinese government maintains tight control over the financial sector to use it as a tool for industrial development and macroeconomic policy (Gruin 2013).

The following discussion uses the case of debt sustainability in China to assess how sectoral spillovers are also being debated by the IMF and AMRO. The dichotomies being challenged in this case relate to real vs. financial sector and state vs. market categories. Granted, this is not the first time China and the IMF disagreed on surveillance methodology (see Chapter 6)—what is new in this instance is the involvement of AMRO in the discussion. Any conflict between the Chinese government and the IMF can be easily seen as an overt political matter. As AMRO is being touted as an independent regional surveillance unit, its views

in this matter can be presented as technical justification for the official Chinese position. It has already been argued that there are convincing reasons to doubt this independence, as pointed out in Chapter 6. Yet as AMRO's analysis both converges and diverges from the IMF's, such interpretations need to be further examined.

The 2017 Article IV Consultation report for China notes the country's strong growth momentum but warns that 'this comes at the cost of further large and continuous increases in private and public debt, and thus increasing downside risks in the medium term' (IMF 2017c, 1). This finding is based on the IMF's Debt Sustainability Analysis, which argues for the need to create an indicator called 'augmented debt' due to 'uncertainty about the perimeter of general government' (IMF 2017c, 51). The narrow definition of public debt in China covers central government debt and 'on-budget' local government debt as defined by officials. IMF staff calculate augmented debt using a broader definition that also includes other types of local government funds, 'including off-budget liabilities (explicit or contingent) borrowed by Local Government Financing Vehicles (LGFVs) via bank loans, bonds, trust loans, and other funding sources... debt of government-guided funds and special construction funds, whose activities are considered quasi-fiscal and are new additions to this Article IV' (IMF 2017c, 51). If assessed based on the narrow definition, Chinese government debt is gradually increasing but still moderate (at 37% of GDP in 2016). However, the IMF argues that augmented debt (significantly higher at 62% of GDP in 2016) 'provides a more accurate estimate of the fiscal impulse and potential debt burden on public finances' (IMF 2017c, 22–23) as LGFVs 'financed spending that appeared to be mostly non-market based with uncertain returns and by entities that are largely government-controlled' (IMF 2017c, 23). On this basis, China's public debt is growing rapidly and poses significant risks if not consolidated soon.

Unsurprisingly, these findings were met with strong opposition from China. The response from relevant IMF directors contend that:

‘The concept and estimation of “augmented” debt and deficit may be a prudent approach from staff’s perspective, but is highly debatable under China’s circumstance... We have a different view on the “augmented” concept in the staff report, which prefers to define government debt on the purpose of the borrowing and presumed government backup, rather than on actual and legal repayment liabilities. Staff’s approach to debt analysis is useful in keeping us vigilant to potential risks associated with “augmented debt”. But ignoring country-specific institutional setup could cause exaggerated fiscal vulnerabilities and underestimated long-term growth’ (Zhongxia, Sun, and Chen 2017, 2–3).

The main point of contention here is not the level of augmented debt itself as the extent of these off-budget liabilities is not a secret. However, the IMF’s insistence on including contingent debt (or what the Chinese side has referred to above as ‘presumed government backup’) means that the government should be held responsible for implicit government guarantees (The Economist 2016). These guarantees are soft budget constraints faced by LGFVs, SOEs, and selected private firms considered local champions, allowing them credit access regardless of the state of their finances (X. Wang 2017). Hence, this case demonstrates how the usual analytical categories of real vs. financial sectors and state vs. market are problematic. As the IMF insists on including off-budget liabilities in its model for augmented debt and uses this as the basis for its unfavourable assessment of debt sustainability in China, it puts pressure on the state for allowing implicit government guarantees to reach such risky levels. The Chinese authorities disagreed with the 2017 Article IV report, stating that:

‘... domestic concerns, such as high financial sector leverage [are] manageable considering ongoing reforms and Chinese-specific strengths, such as high domestic savings. They saw the external environment as facing many uncertainties, such as unexpected fall in global demand or a retreat from globalisation’ (IMF 2017c, 12–13).

The point on ‘Chinese-specific strengths’ is also echoed in an AMRO working paper (Poonpatpibul et al. 2017) published a few months after the release of the 2017 Article IV consultation report. The paper begins by stressing that the rapid rise in corporate debt in China is driven by factors ‘understandably linked to China’s current stage of economic and financial development and are country-specific’ (Poonpatpibul et al. 2017, i). However, it would be a mistake to assume that the AMRO paper is just a straightforward rebuttal of the IMF report—both publications frame their assessment and policy recommendations as a modelling issue of which indicators should be used and what should or should not be included in the analysis. The areas where AMRO and IMF analyses converge and diverge demonstrate how the increase in surveillance outputs may not explicitly reflect conflicting political agendas, yet this is precisely why it can be a more effective tool for displacing accountability.

To start with, the AMRO paper differs from the official Chinese position as it does not directly engage with modelling issues concerning the incorporation of augmented debt. Instead, AMRO staff modelling choices focused on corporate debt. They agree that corporate debt in China is indeed rapidly increasing with their own calculations showing that it reached as high as 155% of GDP in 2016. The paper concedes that estimates vary significantly depending on the institution carrying out the study and whether or not it includes LGFVs. In 2015, the estimates range from 122% (Standard Chartered, excluding LGFV) and 183% (Morgan Stanley, including LGFV). It should be noted that AMRO and IMF figures for 2015 are actually the same at 144% and both measures include LGFV debt.<sup>60</sup> Yet the definition of LGFVs clearly departs from the IMF position as it only includes those ‘explicitly guaranteed by the government’ (Poonpatpibul et al. 2017, 4).

---

<sup>60</sup> Unfortunately, the accompanying methodological appendix does not provide a clear comparison of the AMRO and IMF computations for LGFV debt. The IMF figure for total LGFV debt is provided (18% of GDP in 2016); AMRO uses this whilst calculating its own figure for LGFV debt under the local government (10% of GDP) to arrive at an estimate for LGFV liabilities under corporate debt. Level figures are not provided (Poonpatpibul et al. 2017).

Despite coming up with the same figure for corporate debt-to-GDP ratio in China and conceding that such high levels pose important risks to the country's financial system, the main policy findings drawn by the AMRO is fundamentally different from those presented by the IMF. The AMRO study justified this by using firm-level data to analyse the level and distribution of corporate debt across different sectors. Focusing on the sectoral level allows AMRO to cohere with its position on rising corporate debt whilst also arguing that it is not the systemic issue the IMF is portraying it to be. Instead, AMRO's sectoral analysis is used to claim that there are 'pockets of vulnerabilities associated with declining profits and debt repayment capacities... surfacing within the mining, real estate, construction, and steel sectors' (Poonpatpibul et al. 2017, i).

As highlighted in the accompanying press release:

'Based on various financial indicators and non-performing loan ratios, the bulk of corporate debt is not risky. However, vulnerabilities are concentrated in several sectors under the investment-led growth model with declining profitability and debt repayment capacities, such as SOEs in steel, mining, utilities, transport, and manufacturing as well as some private firms in real estate and construction... Whilst high corporate debt is unlikely to lead to a systemic crisis in the short-term, the authorities should take targeted and concerted efforts to reduce debt in the vulnerable sectors and financial institutions' (AMRO 2017c).

Whilst the first case highlights how the domestic vs. global/internal vs. external divide is perpetuated, the case of debt sustainability in China brings the real vs. financial sectors and state vs. market dichotomies to the fore. This is reflected in how IMF and AMRO surveillance analyses frame the Chinese state's involvement in debt (e.g., 'government-guided funds' in the IMF report in contrast to debt 'explicitly guaranteed by the government' in the AMRO paper). Moreover, in AMRO's firm-level model for debt analysis, the authors clearly indicate that the troubled sectors involve both SOEs and private firms.

To a certain extent, both sides can be lauded for their recognition of the nuances in applying sectoral categories in the case of China. The IMF and AMRO also agree that corporate debt in China is high; however, they offer different assessments as to whether the risk is immediate and systemic, and whether the Chinese government should be held accountable for its unmanageable levels. By depicting the risks associated with rising corporate debt as a contained sectoral issue rather than a systemic one, AMRO effectively exonerates the Chinese government from taking the blame should a debt crisis ensue. Yet as AMRO does not directly address the debate between the IMF and Chinese officials given its choice of indicators and modelling methodology, AMRO can present its findings as a technical matter whilst downplaying the politics inherent in its model.

Hence, debt sustainability analyses as conducted by the IMF and AMRO *define* accountability as their respective models are used to implicate (or exonerate in the case of the latter) the Chinese government in their involvement in the country's rising debt. At the same time, the IMF and AMRO's overlapping models *displace* accountability as their technical analyses converge in one area (i.e., share of corporate debt) and diverge in others. The points of divergence may appear to be a result of technical decisions concerning what should be considered harmful/harmless falsehoods and relevant/irrelevant truths in the debt sustainability analysis. However, as the IMF and AMRO documents are also statements about the Chinese state's role in the event of a debt crisis, the debate is clearly also political. Moreover, as the IMF is increasingly vocal about its concerns regarding spillovers from the Chinese to the global economy, these surveillance reports carry significant implications as instruments of policy justification in global economic governance.

## **7.4 Conclusion**

By examining the spillover models used by the IMF, ADB, and AMRO, this chapter demonstrated how the use of these models in surveillance analysis can

simultaneously define and displace accountability in global economic governance. The first part focused on the reasoning behind the modelling process. The differences in the surveillance objectives between the IMF (with its focus on global stability) and ADB/AMRO on the regional side (with their emphasis on regional resilience against external shocks) influence the methodological choices made by their respective staff as they build spillover models. Whilst these choices result in different modelling priorities, the IMF and ADB/AMRO staff's shared penchant for mathematical formalism generate important similarities, especially in terms of how they account for linkages and interdependencies and rationalise the trade-off between precision and accuracy.

The second part of the chapter unpacked two sets of IMF and AMRO surveillance reports to analyse the representation of 'the economy' in their respective spillover models. The first case focused on the construction of spatial categories in IMF and AMRO spillover models. It underscored the tendency of both sides to disregard or minimise the extent of feedback loops and interdependencies in their respective reports' discussion of internal vs. external or local/regional vs. global factors in the transmission of systemic risk. The second case tackled the analysis of debt sustainability in China as the discussion compared the assessment of IMF staff in contrast to the findings of AMRO staff. Here the attention shifts to the depiction of the state vs. the market and the real vs. financial sectors in the IMF and AMRO models for debt sustainability analysis. The technical differences in the IMF and AMRO analyses effectively result in diverging claims about the accountability of the Chinese government for the rising debt levels. Variations in modelling choices also result in different assessments on whether the rising debt levels is an immediate concern that the state needs to address, or whether it is a sector-specific concern that does not require state action. Whilst these divergences may appear to be a simple result of methodological choices, the two cases demonstrate the inherent politics involved in the modelling process.



As this thesis laid out the building blocks of its argument from Chapters 2 through 6, Chapter 7 presented the final piece as it illustrated how a particular technical intervention that became prominent in post-crisis global economic governance can serve as a useful tool for policy justification. Spillover models are an important component of both IMF and AMRO surveillance toolkits. In the context of the principle of external accountability, these models are especially relevant as they seek to trace the transmission of systemic risk—in its various dimensions and definitions—across borders and across sectors. Hence, spillover models generate political statements about the sources and impact of systemic risk. In this sense, spillover models *define* accountability in global economic governance. However, overlapping surveillance frameworks *displace* accountability as they present different assessments of systemic risk.

# CHAPTER 8

## *Conclusion*

---



*Figure 2 – IMF Managing Director Michel Camdessus with Indonesian President Suharto (15 January 1998, Jakarta). Photographer: Agus Lolong/AFP via Getty Images. Source: Bloomberg.*

The passing of time and emergence of hindsight should normally caution us against making sweeping and deterministic proclamations, yet crises are states of exception; both the Asian and global financial crises are testament to this. The photo above shows Suharto signing a bailout agreement resulting in drastic spending cuts and damaging reforms in Indonesia as Camdessus looks down with folded arms. This is an image that remains ingrained in the minds of

policymakers in the region over two decades later.<sup>61</sup> The phrase ‘never again’ was prominent in the minds of Indonesian policymakers (Moss 2017) who had front-row seats to the painful process wrought by IMF intervention and the subsequent downfall of Suharto.

In 2008, a similar mantra spurred the IMF into action. This time around, John Lipsky, who served as First Deputy Managing Director of the Fund at the peak of the global financial crisis, declared:

“‘Never again can we let ourselves be caught unprepared by an economic and financial crisis of such global magnitude.’ This was the spirit in which G-20 Finance Ministers in late 2008 tasked the IMF and the newly-formed Financial Stability Board to jointly develop an Early Warning Exercise [an important part of the Fund’s expanding surveillance toolkit]’ (Lipsky 2010).

Although the discussions that followed took a more qualified tone, the rallying cry of ‘never again’ is an effective way of consolidating political support in difficult situations; in the case of the aforementioned financial crises, appeals to technical expertise and authority were also useful. Yet, as this thesis shows in the case of mathematical modelling in surveillance, perceptions of change in technical expertise and its role in global economic governance after the 2007 crisis need to be re-examined through a lens that can accommodate both coherence and contradictions in the use of modelling in economic policy, that is, the politics of economic methodology.

By arguing for the importance of bringing in the politics of economic methodology, this thesis investigated the expansion of regional (East Asia

---

<sup>61</sup> Despite the implied symbolism of the photo depicting a compliant debtor from a Third World country succumbing to the demands of the powerful lender from the West, IMF historian James Boughton explains that the scene is much more mundane than it appears. Apparently, it was just a matter of not having enough chairs so Camdessus had no choice as Suharto took the available one. Nonetheless, the photo is part of the region’s memory of the IMF stigma as it supported the narrative of ‘the Fund... being the bad boss, and they jetted in from a long way off and started issuing orders’ (Boughton, quoted by Curran 2017).

through ASEAN+3) and global (IMF) surveillance frameworks after the global financial crisis to address the following question:

*How can the persistence and expansion of technical interventions in post-crisis global economic governance be used as a political resource?*

This chapter will recap the main findings of this thesis and outline its key contributions. As with most research endeavours, this study began as an attempt to address a specific question and will now end by raising a few more. As such, this chapter closes by noting the limitations of the thesis and identifying prospects for future research.

## **8.1 Main findings**

Despite the widespread critique of modelling after the global financial crisis, this has not weakened the dominance of mathematical models in surveillance analysis. This remains to be the case even with the emergence of alternative surveillance platforms, as seen with the rise of AMRO in recent years. Drawing on the analytical framework presented in Chapter 4, this thesis sought to demystify these developments by foregrounding the importance of the politics of economic methodology in global economic governance. Given its focus on unpacking the economic and political logics driving the form of reasoning and representation in mathematical models, the framework was used to analyse IMF and AMRO surveillance with respect to three specific questions:

(i) *In what ways are mathematical surveillance models political representations of economic growth?*

The arguments developed in this thesis are based on an understanding of surveillance that departs from existing analyses. Whilst it agrees that the endurance and widespread conduct of surveillance across countries is driven by a sense of normative solidarity, this is not derived from a consensus about the IMF's legitimacy and 'an underlying and broadly shared sense of the rightness of its prescriptions' (Pauly 2008, 190). Rather, this thesis (as raised in Chapter 1

and discussed in greater depth in Chapter 6) emphasised the centrality of the principle of external accountability, in that countries need to justify the external impact of their internal policy choices. Surveillance thus can be viewed as a platform for policy justification. As such, the rise of regional surveillance institutions such as AMRO should not be seen as a threat to the normative solidarity underlying global economic governance. If analysed as a manifestation of commitment to the principle of external accountability, AMRO should instead be seen as the emergence of another avenue for policy justification.

Building on the notion that surveillance can be used as a tool for policy justification, the thesis illustrated how the use of mathematical models in surveillance analysis provides technical justifications for political claims of economic growth. Chapter 2 showed how variations in the conceptualisation of sources of risks to economic growth were framed using artificially-distinct spatial (e.g., regional vs. global, internal vs. external) and sectoral (e.g., state vs. market, real vs. financial sectors) dichotomies. Analysis of different discursive strands on economic growth in East Asia from the early 1990s to 2018 revealed how the inaccurate construction of such categories can be used for policy justification. As policymakers and academics use and highlight particular categories over others, this allows them to establish the variables, actors, and institutions that determine the economic growth (or collapse) of countries in the region. This subsequently feeds into how ‘the economy’ is depicted in mathematical models and in surveillance analyses that make use of such models.

Thus, with the expansion of regional surveillance, policymakers in East Asia can tap AMRO as an alternative platform for policy justification whilst maintaining their support for external accountability. Given the prominence of concerns regarding domestic legitimacy and international credibility in the region, ASEAN-affiliated institutions such as AMRO allow their member countries to use such mechanisms to consolidate state authority whilst asserting their place in the international community. AMRO surveillance provides policymakers in East Asia with the stage to present their own assessment of

economic growth; however, they do so whilst complying with the internationally-accepted technical standards for economic analysis. The use of mathematical models in surveillance allows the IMF and AMRO to foreground their technical expertise and authority in global economic governance.

At the same time, the thesis argued that the use of mathematical models and its tendency to privilege precision over accuracy has crucial political significance, especially after the global financial crisis. Chapters 3 and 4 demonstrated how the methodological choices embedded in mathematical formalism mean that models can simultaneously strengthen perceptions of expert authority and provide a rationale for its limitations. Due to the compromises made to comply with mathematical formalism, model-based surveillance is both precise (e.g., in terms of how specific dimensions of risk are quantified as model variables) and inaccurate (e.g., in terms of offering a realistic representation of systemic risk). As repeated throughout this thesis, the analysis of surveillance models is predicated on Mitchell's (1998) claim that 'the economy' as depicted in models is a representation of the nation-state and this creates important implications with regard to the depiction of the extent of state jurisdiction. With the post-crisis focus on spillover analysis, the use of surveillance models to identify causality in managing economic stability within and across countries can potentially become more contentious, as tracing the external impact of domestic policies becomes more problematic.

*(ii) To the extent that post-crisis surveillance reform focuses on systemic risk and macroprudential policy, how has this changed efforts to exert technical control over regional and global economic growth and stability?*

Monitoring systemic risk is a fundamental component of spillover analysis; macroprudential policy is a crucial tool for mitigating systemic risk. As discussed in Chapter 5, the very nature of systemic risk means that it is entrenched in a dense network of economic and political processes characterised by feedback loops and amplification mechanisms. Certain channels such as balance sheet contagion can be specified; others remain elusive and are identified after the fact

as ‘unintended consequences’. The dimensions of systemic risk (Renn et al 2011)—namely, complexity, uncertainty, and ambiguity—thus create problems for model-based analysis of systemic risk. The process of modelling involves minimising these very features; at the same time, the importance of tracing interdependencies mean that the discrete categories (as per Chapter 2) or variables normally used in mathematical models (due to the ontological and technical constraints imposed by mathematical formalism, as per Chapter 4) can be misleading representations of systemic risk.

Chapter 6 showed that similar concerns plague macroprudential policy as the validity of its technical analysis is burdened with methodological complexities, uncertainties, and ambiguities. These issues have been acknowledged by policymakers and academics alike, yet instead of spurring a fundamental questioning of the use and effectiveness of mathematical models in macroprudential policy, methodological problems have led to the proliferation of spillover models and the expansion of efforts to assert technical control over the global financial and macroeconomic system. Akin to the arguments put forward in Chapters 3 and 4, the technical appeal of macroprudential policy continues as the use of mathematical models can serve a dual function. On the one hand, it strengthens impressions of technical authority; on the other, the capacity of models to incorporate the aforementioned methodological issues in precise yet inaccurate ways provides a built-in excuse for its limitations. With this reading, complexities, uncertainties, and ambiguities in systemic risk and macroprudential policies are co-opted to justify a broader scope for technical intervention in post-crisis global economic governance; however, these limitations are also emphasised to underscore the constraints faced by policymakers in ensuring global financial and macroeconomic stability.

These concerns are compounded by the rise and expansion of overlapping regional and global surveillance frameworks. As raised in Chapter 5, defining systemic risk is both a technical and political exercise. The representation of systemic risk in mathematical models involves resolving conflicts over the

geographical boundaries of risk and the policy mechanisms that stem from such representations. Hence, AMRO is not just an alternative platform for surveillance; it also acts as a site for political manoeuvring given East Asia's ambivalent relationship with the IMF. As outlined in Chapters 2 and 6, the fallout from the IMF's intervention during the 1997 Asian financial crisis continues to shape the region's policy agenda even though over two decades have passed. Since the 2007 global financial crisis, AMRO surveillance has been driven by the region's preoccupation with maintaining domestic growth and strengthening internal (regional) resilience amidst external (global) risks. However, the region is also increasingly keen to assert itself as a responsible member of the global community. Given the perceptions of objectivity and evenhandedness that are attributed to the use of mathematical models, IMF and AMRO spillover models thus become crucial tools for policy justification and can be used to demonstrate commitment to the principle of external accountability.

*(iii) How does the recent proliferation of regional and global surveillance models define and displace accountability in global economic governance?*

Whilst Chapter 6 offered a broad analysis of how the overlapping domains of IMF and AMRO surveillance and the methodological issues surrounding macroprudential policy exacerbate the difficulties of upholding the principle of external accountability after the global financial crisis, Chapter 7 analysed various IMF, ADB, and AMRO spillover models to investigate how these serve to simultaneously define and displace accountability in global economic governance. Whereas the first part delved into the reasoning behind the methodological choices made by these institutions and the subsequent implications for the design of spillover models, the second part unpacked two sets of IMF and AMRO surveillance documents to illustrate how spatial and sectoral representations in spillover models simultaneously define and displace accountability.

The first case used the 2017 IMF Regional Economic Outlook for Asia and the Pacific and the 2017 ASEAN+3 Regional Economic Outlook to analyse the



implications of spatial representations. If these IMF and AMRO reports are analysed separately, their respective spillover models *define* accountability as they draw clear lines for causality and accountability by establishing distinct domestic vs. global and internal vs. external spheres in their analysis of the sources of systemic risk. However, the IMF and AMRO spillover models *displace* accountability if they are read as parallel assessments of systemic risk. The policy recommendations provided by both institutions in the aforementioned reports do not give explicit consideration to the impact of feedback effects that are not accounted for by their respective spillover models. Furthermore, this omission can be justified on the basis of the ontological and technical constraints imposed by mathematical formalism, as precision needs to be prioritised over accuracy.

Whereas the first case focused on the domestic vs. global/internal vs. external divide, the second looked at the case of debt sustainability in China to examine the construction of sectoral dichotomies, specifically the real vs. financial sectors and state vs. market. The second case examined the 2017 IMF Article IV Consultation report for China and the AMRO working paper *High Corporate Debt in China: Macro and Sectoral Risk Assessments*. Close inspection of these documents revealed that the IMF and AMRO analyses effectively *define* accountability as their respective models associate (or absolve in the case of AMRO) the Chinese government with the country's rising debt levels. However, the IMF and AMRO models also serve to *displace* accountability as their findings cohere in certain aspects (i.e., that corporate debt in China is high) but contradict each other in other aspects. In particular, the IMF and AMRO present different judgements in terms of whether the risk is widespread and whether the Chinese government is responsible for its unwieldy levels.

As outlined above, the main findings of this thesis offer novel insights into the development and use of technical interventions such as surveillance models in post-crisis global economic governance. The analysis provided here emphasised that the methodological and political are inextricably linked—it focused on the politics inherent in methodological choices rather than the

political consequences that follow from the application of surveillance models. As such, this thesis makes unique contributions to relevant debates in IPE literature, which are outlined in the following section.

## 8.2 Contributions

The broad themes informing this thesis—specifically the politics of expertise, surveillance, and the interplay between regional and global institutions—have been covered by a wide range of IPE scholars. Whilst these studies have yielded valuable insights, existing literature tend to overlook the role of methodological choices in fostering the coherence and resilience of the dominant structures for global economic governance, even after the 2007 crisis. Martijn Konings comments on this topic are helpful:

‘The endogenous nature of financial policymaking is something of a double-edged sword. On the one hand, it means that the governance of finance always falls short of an imagined version that works through external observation and intervention and delivers a neutral financial structure. *Financial governance is forever plagued by its embeddedness: the impossibility of cleanly extricating itself from the processes that it seeks to regulate.* On the other hand, the fact that financial authority is not an external imposition, but organically connected to lower-level financial practices, means that at times of intense uncertainty, it can operate with tremendous immediacy, activating embedded chains of connections’ (Konings 2016, 275–76, italics added).

This thesis is motivated by similar observations and also aligns with Konings’ point that assessments of post-crisis developments generally give insufficient emphasis to the endurance of neoliberal reason as ‘a degree of cohesion at the level of practice and the imaginaries that orient it’ (Konings 2016, 270). IPE approaches also tend to take for granted that these ‘lower-level financial practices’ are not just determined by certain forms of expertise but are

also fundamentally grounded in particular processes of knowledge production. Hence, this thesis makes a case for foregrounding the importance of economic methodology in the study of global economic governance. It calls for a deeper examination of specific mechanisms for knowledge production, particularly those rooted in the practice of mathematical formalism as it continues to be a prominent feature of mainstream economics. IPE scholars have yet to study methodological choices in economic policy in such a manner. Given the heavy reliance of global economic governance on perceptions of technical expertise and authority, this is a crucial oversight that this thesis sought to address.

As useful as IPE literature has been, dissecting the politics of economic methodology requires disrupting disciplinary boundaries and bringing perspectives from economic sociology and philosophy of science into the conversation. By doing so, this thesis contributed to ongoing debates on post-crisis global economic governance in three ways.

First, the politics of economic methodology offers an alternative explanation for the persistence of mathematical modelling after the 2007 crisis. Prevailing accounts analyse the continued dominance of mathematical models in terms of the institutional factors that facilitate the legitimation of certain forms of expertise over others. Whilst such claims are valid, they are inclined to treat models themselves as empty vessels for knowledge production. These discussions neglect to consider that the methodological choices that underpin the process of modelling ultimately determine how we produce knowledge and which variables and mechanisms get included or excluded, minimised or amplified in knowledge production. This is key to a better understanding of the endurance of mathematical modelling. In the case of surveillance, this thesis showed that the use of surveillance models can bolster claims of technical authority and provide a defence for its limitations at the same time. The framework developed for analysing the politics of economic methodology thus allows us to appreciate the conflicting ways in which models can be a useful political resource in and of themselves. Moreover, it does so by going beyond

narratives of disciplinary and institutional embeddedness. Whilst such factors do play an important role in preserving the coherence and resilience of the global financial and macroeconomic architecture, highlighting the politics of economic methodology brings the analysis to a deeper level as it traces the mutually constitutive logics behind knowledge production and the attendant repercussions given the tendency to privilege precision over accuracy. To link it back to the quote above from Konings, the politics of economic methodology sheds light on certain dimensions of the endogenous nature of financial policymaking, but also suggests that its entrenchment (at least as far as surveillance models are concerned) can be traced through specific mechanisms (as done in the analytical framework). In this regard, this thesis aspires to contribute to other IPE projects which are interested in understanding the different links tying financial governance to the processes that it seeks to regulate.

The second contribution of this thesis is to the study of surveillance as it makes a case for reconsidering the normative basis for its continued relevance, despite evidence that surveillance has fallen short in terms of making a consistent impact in global economic governance (see Chapter 6). Whilst Pauly underscores the centrality of the principle of external accountability, this thesis pushed Pauly's claim further by providing an in-depth investigation into how shared commitment to this principle drives not just the post-crisis expansion of IMF surveillance (particularly the 2012 Integrated Surveillance Decision) but the rise of AMRO surveillance as well. Furthermore, this thesis grounded the support for external accountability in strategic terms as it examined surveillance as an exercise in policy justification. Such a reading allows us to understand developments in regional surveillance as yet another manifestation of the embeddedness of global economic governance, and not as a threat to normative solidarity as feared by Pauly.

On a related note, the third contribution of this thesis is in the area of multi-layered governance in the aftermath of the 2007 crisis. As mentioned in Chapter

1, studies on the impact of the global financial crisis on East Asian regionalism vary in their assessments, but are inclined to focus either on claims of stronger regional cooperation in the pursuit of resilience and stability, or observations of a shift from regional to national and global mechanisms. The findings in this thesis suggest that national, regional, and global dynamics should not be analysed as isolated processes. This is especially true in the case of ASEAN-led initiatives such as AMRO. Whilst the overarching agenda of ASEAN has changed since its inception during the Cold War, the consolidation of state authority remains at the core of the institution, even as the region plays a bigger role in the international community.

Whilst these contributions are significant, it is hoped that other curious researchers will appreciate the broader implications of this thesis' findings. The next section intends to get the conversation started as it suggests some avenues for future research.

### **8.3 Limitations and prospects for future research**

The latest developments in regional and global surveillance provide fertile ground for research on the intricacies of post-crisis global economic governance. However, given the early stages of the implementation of the 2012 Integrated Surveillance Decision and ongoing changes in AMRO operations (particularly their recent move to improve transparency), this thesis had to work with limited documentary resources to support its analyses. Nonetheless, the analytical framework enabled an in-depth analysis of the available material, producing important insights that can serve as the groundwork for further study of IMF and AMRO surveillance.

As useful as the analytical framework was, it should also be noted that this was created specifically with surveillance models in mind. Be that as it may, the core thrust the framework advances—that methodological practices should be examined as a process wherein the illusion of distance between the technical and

political is constructed and maintained—holds relevance in other areas of economic policy aside from surveillance, especially in light of these policies' heavy reliance on claims of technical and apolitical authority and expertise. Future studies interested in the implications of methodological choices in economic policy may find some of the components included in the framework useful in their own research, or may tweak it as they deem appropriate for their own purposes.

Whilst laying out the specifics of a possible agenda for the politics of economic methodology is beyond the scope of this thesis, the insights gleaned from this project generated some preliminary ideas. The rest of this section lists three possible research trajectories that could build on the results of this thesis:

- (i) *How does the interplay between international organisations influence the production of metrics and models in other areas of global governance? Conversely, how does this process reconfigure the interdependencies between international organisations as members of a broader knowledge network?*

Whereas this thesis was interested in analysing international organisations that are clearly located in different rungs in the hierarchical structure of global governance, the dynamics of cooperation and competition also operate between international organisations which are of similar stature and background, such as the World Bank and UNICEF. For example, this thesis' analytical framework could be modified to better fit the case of global poverty indicators. The recent collaboration between the World Bank and UNICEF on the development of global indicators for child poverty (UNICEF and World Bank 2016) suggests subtle shifts in knowledge and expertise in the making of global poverty policies. UNICEF is generally seen as the authority on matters relating to child welfare whilst World Bank is known for its technical expertise in poverty indicators. During the 1990s and the height of the implementation of structural adjustment programmes, UNICEF published a report (Cornia, Jolly, and Stewart 1987) which was widely seen as a direct attack on World Bank practices and triggered a hybridisation of previously disparate policy narratives. With the recent shift

from Millennium Development Goals to Sustainable Development Goals, there have been signs of areas of convergence and divergence between World Bank and UNICEF research as both institutions strive to play the leading role in the framing and measurement of child poverty and how it gets translated into policy recommendations. It would be interesting to investigate how international organisations both compete and derive authority from working with each other as they stake their claim as leaders in various areas of global governance. An approach inspired by the politics of economic methodology could be applied in future studies in this area.

*(ii) How can the politics of economic methodology inform other discussions on the role of international organisations in depoliticisation strategies?*

This thesis has obvious parallels with work on depoliticisation (Burnham 2001), and international organisations are important sites for investigation of this topic. Indeed, the IMF has already been the subject of related studies. One such example is Chris Rogers' (2012) examination of the role of the Fund in managing financial crises that hit developed countries in Europe. As Rogers adopts a domestic statecraft framework in his analysis, there are also clear overlaps with this thesis' focus on surveillance as policy justification. The findings of this thesis can complement such literature by presenting a case for external rather than internal policy justification. In response to Jim Buller and Matthew Flinders' (2006) comment about the conceptual and methodological challenges surrounding depoliticisation research, this thesis' analytical framework for the politics of economic methodology can also be further developed by other scholars working on this topic.

*(iii) What is the significance of methodological choices in studies on the politics and sociology of ignorance and non-knowledge?*

The issue of knowledge limitations is a central component of this thesis, specifically in relation to how the complexities and uncertainties of systemic risk are dismissed, minimised, or co-opted in mathematical models. When such knowledge limitations are acknowledged in model-based policy justification,

mathematical models can be used to lend credibility to policy analysis whilst defending its narrow applicability. In this regard, there are important parallels with Davies and McGoey's argument that the global financial crisis led to the further rise of rational economic knowledge to prevent the recurrence of what was construed as ignorance about the origins and extent of financial sector instabilities. At the same time, there were stronger calls for a softer rationalism which accommodates complexities and uncertainties. This highlights how ignorance can be manipulated by experts in such a way that it can be framed as a gap that can be filled with their technical expertise, or an inevitability in the financial system that can be used to exonerate experts from any failures in their analysis (Davies and McGoey 2012).

Davies and McGoey's overarching point on rational economic knowledge is instructive and this thesis' analytical approach complements their argument on the contradictory yet strategic effects of the simultaneous demands for the expansion of rational economic knowledge and softer rationalism after the crisis. However, the approach presented in this thesis suggests that ignorance is not simply a political tool that can be manoeuvred as a separate object. In the same way that mathematical models have co-opted complexities and uncertainties in the economy, ignorance can be constructed and maintained through specific methodological practices that are reinforced by political logics as well. As such, the insights developed in this thesis can be expanded so that they can contribute to the emerging dialogue on the politics and sociology of ignorance and non-knowledge (McGoey 2012; A. H. Kelly and McGoey 2018)

\*\*\*

As noted at the beginning of this chapter, the passing of time and emergence of hindsight should normally caution us against making sweeping and deterministic proclamations. Crises are states of exception; however, the same cannot be said about PhD theses. This thesis in particular was built on complexities, uncertainties, and ambiguities. As such, it seems fitting to end with this quote from John Law:



‘Perhaps we will need to rethink our ideas about clarity and rigour, and find ways of knowing the indistinct and the slippery without trying to grasp and hold them tight. Here knowing would become possible through techniques of deliberate imprecision’ (Law 2004, 3).

Whilst this thesis supports Law’s call for studying social science through techniques of deliberate imprecision, it is acknowledged that the authority of institutions such as the IMF and AMRO will collapse if they adopt such an outlook. This thesis refrains from providing sweeping and deterministic claims on the sustainability of the IMF’s and AMRO’s current approach, nor will it comment on the broader implications of global economic governance’s general preference for the illusion of precision over the pursuit of elusive accuracy. Nonetheless, by raising the importance of such issues, this thesis offers a provocation that may stimulate greater interest amongst IPE scholars in the politics of economic methodology.

## Bibliography

- ADB. 2007. 'Enhancing the Capacity of Selected ASEAN+3 Countries for Assessing Financial Vulnerabilities'. Technical Assistance Report. Manila, Philippines: Asian Development Bank.  
<https://www.adb.org/sites/default/files/project-document/66340/40565-reg-tar.pdf>.
- . 2009. 'Asia Economic Monitor December 2009'. Manila, Philippines: Asian Development Bank.  
[https://aric.adb.org/pdf/aem/dec09/Dec\\_AEM\\_complete.pdf](https://aric.adb.org/pdf/aem/dec09/Dec_AEM_complete.pdf).
- . 2011. 'Supporting and Enhancing Regional Surveillance for ASEAN+3 and the Chiang Mai Initiative Multilateralization'. Technical Assistance Report. Manila, Philippines: Asian Development Bank.
- . 2016. 'Enhancing Regional Capacity for Economic Surveillance and Financial Vulnerability Assessment'. Technical Assistance Report. Manila, Philippines: Asian Development Bank.  
<https://www.adb.org/sites/default/files/project-document/180548/49130-001-tar.pdf>.
- . 2017. 'Asian Economic Integration Report 2017'. Manila, Philippines: Asian Development Bank.  
<https://www.adb.org/sites/default/files/publication/375196/aeir-2017.pdf>.
- . 2018. 'Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA)'. Text. Asian Development Bank. 22 January 2018. <https://www.adb.org/countries/subregional-programs/bimp-eaga>.
- Agnew, John. 2010. 'Emerging China and Critical Geopolitics: Between World Politics and Chinese Particularity'. *Eurasian Geography and Economics* 51 (5): 569–82. <https://doi.org/10.2747/1539-7216.51.5.569>.

- Amariglio, Jack. 1990. 'Economics as a Postmodern Discourse'. In *Economics as Discourse: An Analysis of the Language of Economists*, 15–46. Recent Economic Thought Series. Massachusetts: Kluwer Academic Publishers.
- AMRO. 2017a. 'ASEAN+3 Macroeconomic Research Office Annual Report 2016'. Singapore: ASEAN+3 Macroeconomic Research Office.
- . 2017b. 'ASEAN+3 Regional Economic Outlook 2017: ASEAN+3 Region 20 Years after the Asian Financial Crisis'. Singapore: ASEAN+3 Macroeconomic Research Office.
- . 2017c. 'Deleveraging Elevated Corporate Debt in China Should Focus on Vulnerable Sectors and Financial Institutions'. *AMRO* (blog). 2017. <http://www.amro-asia.org/deleveraging-elevated-corporate-debt-in-china-should-focus-on-vulnerable-sectors-and-financial-institutions/>.
- . 2018a. 'ASEAN+3 Macroeconomic Research Office Annual Report 2017'. Singapore: ASEAN+3 Macroeconomic Research Office. <http://www.amro-asia.org/wp-content/uploads/2018/04/AMRO-Annual-Report-2017-Full.pdf>.
- . 2018b. 'ASEAN+3 Regional Economic Outlook 2018: Resilience and Growth in a Changing World'. Singapore: ASEAN+3 Macroeconomic Research Office. [http://www.amro-asia.org/wp-content/uploads/2018/05/AMRO-AREO-Report-2018\\_Full-Report.pdf](http://www.amro-asia.org/wp-content/uploads/2018/05/AMRO-AREO-Report-2018_Full-Report.pdf).
- . 2018c. 'Organization Chart'. AMRO. 2018. <http://www.amro-asia.org/about-amro/organization-chart/>.
- Amyx, Jennifer. 2008. 'Regional Financial Cooperation in East Asia since the Asian Financial Crisis'. In *Crisis as Catalyst: Asia's Dynamic Political Economy*, edited by Andrew J. MacIntyre, T. J. Pempel, and John Ravenhill, 117–37. Cornell Studies in Political Economy. Ithaca: Cornell University Press.

- Anas, Titik, and Raymond Atje. 2005. 'Economic Surveillance and Policy Dialogue in East Asia: Making the ASEAN Surveillance Process Anew'. Jakarta: ASEAN Secretariat.
- Anderson, Ben, Matthew Kearnes, Colin McFarlane, and Dan Swanton. 2012. 'On Assemblages and Geography'. *Dialogues in Human Geography* 2 (2): 171–89. <https://doi.org/10.1177/2043820612449261>.
- Anderson, Derek, Benjamin Hunt, Mika Kortelainen, Michael Kumhof, Douglas Laxton, Dirk Muir, Susanna Mursula, and Stephen Snudden. 2013. 'Getting to Know GIMF: The Simulation Properties of the Global Integrated Monetary and Fiscal Model'. 13/55. IMF Working Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2013/wp1355.pdf>.
- Andrle, Michal, Patrick Blagrove, Pedro Espallat, Keiko Honjo, Benjamin Hunt, Mika Kortelainen, René Lalonde, et al. 2015. 'The Flexible System of Global Models – FSGM'. 15/64. IMF Working Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2015/wp1564.pdf>.
- Arner, Douglas W., and Cyn-Young Park. 2010. 'Global Financial Regulatory Reforms: Implications for Developing Asia'. Working Paper 57. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/28535/wp57-global-financial-regulatory-reforms.pdf>.
- Arrighi, Giovanni, Takeshi Hamashita, and Mark Selden. 2003. 'Introduction: The Rise of East Asia in Regional and World Historical Perspective'. In *The Resurgence of East Asia: 500, 150 and 50 Year Perspectives*, edited by Giovanni Arrighi, Takeshi Hamashita, and Mark Selden, 1–16. Asia's Transformations. London ; New York: Routledge.

ASEAN+3. 2012. 'Joint Statement of the 15th ASEAN+3 Finance Ministers and Central Bank Governors' Meeting'. Meeting document presented at the ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting, Manila, Philippines, May 3. [https://www.mof.go.jp/english/international\\_policy/convention/asean\\_plus\\_3/20120503.pdf](https://www.mof.go.jp/english/international_policy/convention/asean_plus_3/20120503.pdf).

———. 2015. 'Joint Statement of the 18th ASEAN+3 Finance Ministers' Meeting'. Meeting document presented at the ASEAN+3 Finance Ministers' Meeting, Baku, May 3.

———. 2017. 'Joint Statement of the 20th ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting'. Meeting document presented at the ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting, Yokohama, May 5. [https://www.mof.go.jp/english/international\\_policy/convention/asean\\_plus\\_3/20170505.pdf](https://www.mof.go.jp/english/international_policy/convention/asean_plus_3/20170505.pdf).

———. 2018. 'Joint Statement of the 21st ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting'. Meeting document presented at the ASEAN+3 Finance Ministers' and Central Bank Governors' Meeting, Manila, Philippines, May 4. <http://asean.org/storage/2018/05/Final-Draft-Joint-Statement-of-the-21st-AFMGM-3-00000002.pdf>.

ASEAN. 1977. 'Memorandum of Understanding on the ASEAN Swap Agreements'. [http://www.asean.org/wp-content/uploads/images/2012/Economic/AFMM/Agreement\\_on\\_Finance/Memorandum%20of%20Understanding%20on%20the%20ASEAN%20Swap%20Arrangement%20%281978%29.pdf](http://www.asean.org/wp-content/uploads/images/2012/Economic/AFMM/Agreement_on_Finance/Memorandum%20of%20Understanding%20on%20the%20ASEAN%20Swap%20Arrangement%20%281978%29.pdf).

———. 1978. 'The Supplementary Agreement to the Memorandum of Understanding on the ASEAN Swap Arrangement'. [http://www.asean.org/wp-content/uploads/images/2012/Economic/AFMM/Agreement\\_on\\_Finance](http://www.asean.org/wp-content/uploads/images/2012/Economic/AFMM/Agreement_on_Finance)

/Supplementary%20Agreement%20to%20the%20Memorandum%20of  
%20Understanding%20on%20the%20ASEAN%20Swap%20Arrangemen  
t%20%281978%29.pdf.

———. 2008. 'ASEAN Economic Community Blueprint'. Jakarta: ASEAN Secretariat. <http://asean.org/wp-content/uploads/archive/5187-10.pdf>.

———. 2011. 'Bali Declaration on ASEAN Community in a Global Community of Nations - Bali Concord III'. Meeting document, Bali, Indonesia, November 17.

<http://www.asean.org/storage/archive/documents/19th%20summit/Bali%20Concord%20III.pdf>.

———. 2015. 'ASEAN Economic Community 2025 Blueprint'. Jakarta: ASEAN Secretariat.

<http://www.asean.org/storage/images/2015/November/aec-page/AEC-Blueprint-2025-FINAL.pdf>.

———. 2017. 'ASEAN Economic Community 2025 Consolidated Strategic Action Plan'. Jakarta: ASEAN Secretariat.

<http://asean.org/storage/2017/02/Consolidated-Strategic-Action-Plan.pdf>.

———. 2018. 'ASEAN Leaders' Vision for A Resilient and Innovative ASEAN'. Meeting document, Singapore, April 27. <http://asean.org/wp-content/uploads/2018/04/ASEAN-Leaders-Vision-for-a-Resilient-and-Innovative-ASEAN.pdf>.

Ashbee, Edward. 2013. 'The United States: Institutional Continuities, Reform, and "Critical Junctures"'. In *Moments of Truth: The Politics of Financial Crises in Comparative Perspective*, edited by Francisco Panizza and George Philip. London: Routledge. <http://ebookcentral.proquest.com/lib/warw/detail.action?docID=1546775>.

- AsiaOne. 2011. 'Muse of the Asian Century'. 2 December 2011.  
<http://www.asiaone.com/News/AsiaOne%2BNews/Singapore/Story/A1Story20111202-314051.html>.
- Auslin, Michael R. 2017. *The End of the Asian Century: War, Stagnation, and the Risks to the World's Most Dynamic Region*. New Haven: Yale University Press.
- Australian Government. 2012. 'Australia in the Asian Century'. White Paper. Canberra, Australia: Commonwealth of Australia.  
[http://www.defence.gov.au/whitepaper/2013/docs/australia\\_in\\_the\\_asian\\_century\\_white\\_paper.pdf](http://www.defence.gov.au/whitepaper/2013/docs/australia_in_the_asian_century_white_paper.pdf).
- Azis, Iwan J., Sabyasachi Mitra, Anthony Baluga, and Roselle Dime. 2013. 'The Threat of Financial Contagion to Emerging Asia's Local Bond Markets: Spillovers from Global Crises'. 106. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank.  
<https://www.adb.org/sites/default/files/publication/30135/threat-financial-contagion-bond-markets.pdf>.
- Bache, Ian, and Matthew V. Flinders. 2004. 'Introduction'. In *Multi-Level Governance*, edited by Ian Bache and Matthew V. Flinders, 1–11. Oxford ; New York: Oxford University Press.
- Backhouse, Roger. 2010. *The Puzzle of Modern Economics: Science or Ideology*. Cambridge: Cambridge University Press.
- Baker, Andrew. 2013. 'The Gradual Transformation? The Incremental Dynamics of Macroprudential Regulation'. *Regulation & Governance* 7 (4): 417–34.  
<https://doi.org/10.1111/reg.12022>.
- . 2015. 'The Bankers' Paradox: The Political Economy of Macroprudential Regulation'. SRC Discussion Paper No. 37. London School of Economics Systemic Risk Centre, London.

- . 2018. 'Macroprudential Regimes and the Politics of Social Purpose'. *Review of International Political Economy* 25 (3): 293–316. <https://doi.org/10.1080/09692290.2018.1459780>.
- Baker, Andrew, and Geoffrey R. D. Underhill. 2015. 'Economic Ideas and the Political Construction of the Financial Crash of 2008'. *The British Journal of Politics & International Relations* 17 (3): 381–90. <https://doi.org/10.1111/1467-856X.12072>.
- Baker, Andrew, and Wesley Widmaier. 2014. 'The Institutionalist Roots of Macroprudential Ideas: Veblen and Galbraith on Regulation, Policy Success and Overconfidence'. *New Political Economy* 19 (4): 487–506. <https://doi.org/10.1080/13563467.2013.796447>.
- Baker, Scott R., Nicholas Bloom, and Steven J. Davis. 2016. 'Measuring Economic Policy Uncertainty'. *The Quarterly Journal of Economics* 131 (4): 1593–1636. <https://doi.org/10.1093/qje/qjw024>.
- Ban, Cornel. 2016. *Ruling Ideas: How Global Neoliberalism Goes Local*. Oxford, New York: Oxford University Press.
- Ban, Cornel, and Mark Blyth. 2013. 'The BRICs and the Washington Consensus: An Introduction'. *Review of International Political Economy* 20 (2): 241–55. <https://doi.org/10.1080/09692290.2013.779374>.
- Barnett, Michael, and Martha Finnemore. 2004. *Rules for the World: International Organizations in Global Politics*. Ithaca, NY: Cornell University Press.
- Bayoumi, Tamim. 2004. 'GEM: A New International Macroeconomic Model'. 239. Occasional Paper. Washington, D.C.: International Monetary Fund.
- Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. Theory, Culture and Society. London ; Thousand Oaks, Calif: Sage.
- . 1997. 'Global Risk Politics'. *The Political Quarterly* 68 (B): 18–33. <https://doi.org/10.1111/1467-923X.00113>.
- . 2009. *World at Risk*. Cambridge: Polity Press.



- Beeson, Mark. 2003. 'Sovereignty under Siege: Globalisation and the State in Southeast Asia'. *Third World Quarterly* 24 (2): 357–74. <https://doi.org/10.1080/0143659032000074637>.
- Beeson, Mark, and Iyanatul Islam. 2005. 'Neo-Liberalism and East Asia: Resisting the Washington Consensus'. *The Journal of Development Studies* 41 (2): 197–219. <https://doi.org/10.1080/0022038042000309214>.
- Bell, Daniel. 1980. 'Models and Reality in Economic Discourse'. *The Public Interest*, no. Economic Theory and Policy in Disarray: IV: 46–80.
- Benes, Jaromir, Michael Kumhof, and Douglas Laxton. 2014a. 'Financial Crises in DSGE Models: A Prototype Model'. 14/57. IMF Working Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2014/wp1457.pdf>.
- . 2014b. 'Financial Crises in DSGE Models: Selected Applications of MAPMOD'. 14/56. IMF Working Paper. Washington, D.C.: International Monetary Fund. [https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2014/\\_wp1456.ashx](https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2014/_wp1456.ashx).
- Berg, Andrew, Eduardo Borensztein, and Catherine Pattillo. 2004. 'Assessing Early Warning Systems: How Have They Worked in Practice?' 04/52. IMF Working Paper. Washington, D.C.: International Monetary Fund. [https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2004/\\_wp0452.ashx](https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2004/_wp0452.ashx).
- Best, Jacqueline. 2005. *The Limits of Transparency: Ambiguity and the History of International Finance*. Ithaca: Cornell University Press.
- . 2012. 'Bureaucratic Ambiguity'. *Economy and Society* 41 (1): 84–106. <https://doi.org/10.1080/03085147.2011.637333>.
- . 2014. *Governing Failure: Provisional Expertise and the Transformation of Global Development Finance*. Cambridge, United Kingdom: Cambridge University Press.

- . 2016. 'When Crises Are Failures: Contested Metrics in International Finance and Development'. *International Political Sociology* 10 (1): 39–55. <https://doi.org/10.1093/ips/olv003>.
- Best, Jacqueline, and Wesley Widmaier. 2006. 'Micro- or Macro-Moralities? Economic Discourses and Policy Possibilities'. *Review of International Political Economy* 13 (4): 609–31. <https://doi.org/10.1080/09692290600839881>.
- Bigo, Vinca, and Ioana Negru. 2014. 'Mathematical Modelling in the Wake of the Crisis: A Blessing or a Curse? What Does the Economics Profession Say?' *Cambridge Journal of Economics* 38 (2): 329–47. <https://doi.org/10.1093/cje/bet063>.
- Bisias, Dimitrios, Mark Flood, Andrew W. Lo, and Stavros Valavanis. 2012. 'A Survey of Systemic Risk Analytics'. *Annual Review of Financial Economics* 4 (1): 255–96. <https://doi.org/10.1146/annurev-financial-110311-101754>.
- Blanchard, Olivier. 2017. 'Distortions in Macroeconomics'. Speech presented at the 32nd NBER Annual Conference on Macroeconomics, Cambridge, MA, April 7.
- . 2018. 'On the Future of Macroeconomic Models'. *Oxford Review of Economic Policy* 34 (1–2): 43–54. <https://doi.org/10.1093/oxrep/grx045>.
- Blyth, Mark. 2003. 'The Political Power of Financial Ideas: Transparency, Risk, and Distribution in Global Finance'. In *Monetary Orders: Ambiguous Economics, Ubiquitous Politics*, edited by Jonathan Kirshner, 239–59. Ithaca: Cornell University Press.
- . 2013. 'Paradigms and Paradox: The Politics of Economic Ideas in Two Moments of Crisis'. *Governance* 26 (2): 197–215. <https://doi.org/10.1111/gove.12010>.

- Bonefeld, Werner. 2012. 'Freedom and the Strong State: On German Ordoliberalism'. *New Political Economy* 17 (5): 633–56. <https://doi.org/10.1080/13563467.2012.656082>.
- Borio, Claudio. 2010. 'Implementing a Macroprudential Framework: Blending Boldness and Realism'. Speech presented at the HKIMR-BIS Conference 'Financial Stability: Towards a Macroprudential Approach', Hong Kong, July 5.
- . 2014. 'Macroprudential Frameworks: (Too) Great Expectations?' In *Macroprudentialism*, edited by Dirk Schoenmaker, 29–45. London: CEPR Press.
- Borio, Claudio, and Mathias Drehmann. 2009. 'Towards an Operational Framework for Financial Stability: "Fuzzy" Measurement and Its Consequences'. Central Bank of Chile Working Paper No. 544. Central Bank of Chile, Santiago.
- Bossone, Biagio, and Roberta Marra. 2013. 'The "Good Global Citizen" Remit for the International Community: A Novel Responsibility for the IMF'. *VoxEU.Org* (blog). 16 March 2013. <https://voxeu.org/article/good-global-citizen-remit-international-community-novel-responsibility-imf>.
- Botman, Dennis, Philippe Karam, Douglas Laxton, and David Rose. 2007. 'DSGE Modeling at the Fund: Applications and Further Developments'. 07/200. IMF Working Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/wp/2007/wp07200.pdf>.
- Brassett, James, and Christopher Holmes. 2016. 'Building Resilient Finance? Uncertainty, Complexity, and Resistance'. *The British Journal of Politics and International Relations* 18 (2): 370–88. <https://doi.org/10.1177/1369148115615028>.
- Braun, Benjamin. 2014. 'Central Bank Agency and Monetary Governability in the Euro Area: Governing through Money, Trust, and Expectations'. Coventry: University of Warwick.

- Breslin, Shaun. 2011a. 'East Asia and the Global/Transatlantic/Western Crisis'. *Contemporary Politics* 17 (2): 109–17. <https://doi.org/10.1080/13569775.2011.565977>.
- . 2011b. 'The "China Model" and the Global Crisis: From Friedrich List to a Chinese Mode of Governance?' *International Affairs* 87 (6): 1323–43. <https://doi.org/10.1111/j.1468-2346.2011.01039.x>.
- Breslin, Shaun, and Richard Higgott. 2000. 'Studying Regions: Learning from the Old, Constructing the New'. *New Political Economy* 5 (3): 333–52. <https://doi.org/10.1080/713687784>.
- Broome, André. 2008. 'The Importance of Being Earnest: The IMF as a Reputational Intermediary'. *New Political Economy* 13 (2): 125–51. <https://doi.org/10.1080/13563460802018216>.
- Broome, André, and Joel Quirk. 2015. 'Governing the World at a Distance: The Practice of Global Benchmarking'. *Review of International Studies* 41 (5): 819–41. <https://doi.org/10.1017/S0260210515000340>.
- Bryan, Dick, Randy Martin, Johnna Montgomerie, and Karel Williams. 2012. 'An Important Failure: Knowledge Limits and the Financial Crisis'. *Economy and Society* 41 (3): 299–315. <https://doi.org/10.1080/03085147.2012.661632>.
- Bryman, Alan. 2016. *Social Research Methods*. Fifth edition. Oxford: Oxford University Press.
- Burnham, Peter. 2001. 'New Labour and the Politics of Depoliticisation'. *The British Journal of Politics & International Relations* 3 (2): 127–49. <https://doi.org/10.1111/1467-856X.00054>.
- Busuioc, Madalina, and Martin Lodge. 2016. 'Reputation and Accountability Relationships: Managing Accountability Expectations through Reputation'. *Public Administration Review* 77 (1): 91–100. <https://doi.org/10.1111/puar.12612>.

- Caballero, Ricardo J. 2010. 'Macroeconomics after the Crisis: Time to Deal with the Pretense-of-Knowledge Syndrome'. *Journal of Economic Perspectives* 24 (4): 85–102. <https://doi.org/10.1257/jep.24.4.85>.
- Callahan, William A. 2004. 'National Insecurities: Humiliation, Salvation, and Chinese Nationalism'. *Alternatives* 29: 119–218.
- Campbell, John L. 2004. *Institutional Change and Globalization*. Princeton, N.J: Princeton University Press.
- Camroux, David. 2007. "“Asia, Whose Asia?” Evolving Conceptions of an Asian Community from the 1920s till Today'. In *The Evolution of Regionalism in Asia: Economic and Security Issues*, edited by Heribert Dieter, 11–33. Routledge/Warwick Studies in Globalisation 16. Milton Park, Abingdon, Oxon ; New York: Routledge.
- . 2012. 'Regionalism in Asia as Disguised Multilateralism: A Critical Analysis of the East Asia Summit and the Trans-Pacific Partnership'. *The International Spectator* 47 (1): 97–115. <https://doi.org/10.1080/03932729.2012.655010>.
- Carroll, Toby, and D. S. L. Jarvis, eds. 2017. *Asia after the Developmental State: Disembedding Autonomy*. Cambridge Studies in Comparative Public Policy. Cambridge: Cambridge University Press.
- Caruana, Jaime. 2015. 'Beyond Zero Rates and Unconventional Monetary Policy'. Panel remarks presented at the conference on Monetary and Financial Shifts: Challenges and Possible Outcomes, Lima, October 6.
- Caverzasi, Eugenio, and Alberto Russo. 2018. 'Toward a New Microfounded Macroeconomics in the Wake of the Crisis'. Working Paper 1807. Post-Keynesian Economics Society Working Paper. Post-Keynesian Economics Society.
- Chandrasekhar, C.P., and Jayatri Ghosh. 1998. 'Hubris, Hysteria, Hope: The Political Economy of Crisis and Response in Southeast Asia'. In *Tigers in*

*Trouble: Financial Governance, Liberalization and the Crises in East Asia*, edited by Jomo K.S., 63–84. London: Zed.

Chang, Junhong. 2016. 'Keynote Speech'. Speech presented at the 6th Asia Research Forum 'CMIM: Asian Multilateralism and Cooperation', January 7.

———. 2017. 'Resilience and Vigilance: AMRO's Perspectives on Regional Financial Cooperation'. Speech presented at the Twenty Years after the Asian Financial Crisis: Achievements and Ways Forward, Yokohama, May 4.

Chen, Qianying, Dale Gray, Papa N'Diaye, Hiroko Oura, and Natalia Tamirisa. 2010. 'International Transmission of Bank and Corporate Distress'. 10/124. IMF Working Paper. Washington, D.C.: International Monetary Fund.

<https://www.imf.org/en/Publications/WP/Issues/2016/12/31/International-Transmission-of-Bank-and-Corporate-Distress-23843>.

Cheng, Gong, Dominika Miernik, Yisr Barnieh, Beomhee Han, Ika Mustika Sari, Faith Qiyang Pang, Tigran Kostanyan, et al. 2018. 'IMF-RFA Collaboration: Motives, State of Play, and Way Forward'. Discussion Paper 4. Luxembourg: European Stability Mechanism.

Chick, Victoria. 1998. 'On Knowing One's Place: The Role of Formalism in Economics'. *The Economic Journal* 108 (451): 1859–69. <https://doi.org/10.1111/1468-0297.00381>.

Chin, Gregory T. 2010. 'Remaking the Architecture: The Emerging Powers, Self-Insuring and Regional Insulation'. *International Affairs* 86 (3): 693–715. <https://doi.org/10.1111/j.1468-2346.2010.00906.x>.

Christophers, Brett. 2009. 'Complexity, Finance, and Progress in Human Geography'. *Progress in Human Geography* 33 (6): 807–24. <https://doi.org/10.1177/0309132509336508>.

- . 2017. 'Seeing Financialization? Stylized Facts and the Economy Multiple'. *Geoforum* 85 (October): 259–68. <https://doi.org/10.1016/j.geoforum.2017.06.024>.
- Chwieroth, Jeffrey M. 2010. *Capital Ideas: The IMF and the Rise of Financial Liberalization*. Princeton, N.J: Princeton University Press.
- Clapton, William. 2014. 'Risk and International Society'. In *Risk and Hierarchy in International Society: Liberal Interventionism in the Post-Cold War Era*, 27–41. Basingstoke: Palgrave Macmillan.
- Clement, Piet. 2010. 'The Term "Macroprudential": Origins and Evolution'. BIS Quarterly Review. Bank for International Settlements, Basel.
- Clift, Ben. 2018. *The IMF and the Politics of Austerity in the Wake of the Global Financial Crisis*. First edition. Oxford, United Kingdom: Oxford University Press.
- Clift, Ben, Peter Marcus Kristensen, and Ben Rosamond. 2018. 'Remembering and Forgetting IPE: Disciplinary History as Boundary Work'. Conference paper. Department of Political Science, University of Copenhagen.
- Clift, Ben, and Ben Rosamond. 2009. 'Lineages of a British International Political Economy'. In *Routledge Handbook of International Political Economy: IPE as a Global Conversation*, edited by Mark Blyth, 95–111. Oxford: Routledge.
- Colander, David C. 2001. *The Lost Art of Economics: Essays on Economics and the Economics Profession*. Cheltenham, UK ; Northampton, MA, USA: Edward Elgar Publishing.
- Colander, David, Michael Goldberg, Armin Haas, Katarina Juselius, Alan Kirman, Thomas Lux, and Brigitte Sloth. 2009. 'The Financial Crisis and the Systemic Failure of the Economics Profession'. *Critical Review* 21 (2–3): 249–67. <https://doi.org/10.1080/08913810902934109>.

- Committee on the Global Financial System. 2010. 'Macroprudential Instruments and Frameworks: A Stocktaking of Issues and Experiences'. CGFS Papers No. 38. Bank for International Settlements, Basel.
- Connell, Raewyn, and Nour Dados. 2014. 'Where in the World Does Neoliberalism Come From?' *Theory and Society* 43 (2): 117–38. <https://doi.org/10.1007/s11186-014-9212-9>.
- Cooley, Thomas F., and Stephen F. Leroy. 1985. 'Atheoretical Macroeconometrics: A Critique'. *Journal of Monetary Economics* 16 (3): 283–308. [https://doi.org/10.1016/0304-3932\(85\)90038-8](https://doi.org/10.1016/0304-3932(85)90038-8).
- Cooper, Melinda. 2011. 'Complexity Theory After the Financial Crisis'. *Journal of Cultural Economy* 4 (4): 371–85. <https://doi.org/10.1080/17530350.2011.609692>.
- Corbett, Jenny, and Christopher Findlay. 2010. 'Linkages between Real and Financial Aspects of Economic Integration in Asia: Overview Report'. In *Linkages between Real and Financial Aspects of Economic Integration in East Asia*, edited by Christopher Findlay, Friska Parulian, and Jenny Corbett, 1–19. ERIA Research Project Report 2009 1. Jakarta: ERIA.
- Corbett, Jenny, and Ying Xu. 2010. 'Macroeconomic Rebalancing and Financial Integration in East Asia: Overview'. In *Achieving Sustainable Growth in East Asia*, edited by Jenny Corbett and Ying Xu, 1–16. ERIA Research Project Report 2010 28. Jakarta: ERIA.
- Cornia, Giovanni Andrea, Richard Jolly, and Frances Stewart, eds. 1987. *Adjustment with a Human Face: Volume I: Protecting the Vulnerable and Promoting Growth*. Oxford, New York: Oxford University Press.
- Crouch, Colin. 2011. *The Strange Non-Death of Neoliberalism*. Cambridge, UK; Malden, MA: Polity Press.
- Crow, John, Ricardo Arriazu, and Niels Thygesen. 1999. 'External Evaluation of IMF Surveillance'. Washington, D.C.: International Monetary Fund.



- Curran, Enda. 2017. 'IMF Struggles to Shake Off Stigma 20 Years After Crisis'. *Bloomberg.Com*, 6 July 2017. <https://www.bloomberg.com/news/articles/2017-07-06/imf-struggles-to-shake-off-stigma-20-years-after-asia-crisis>.
- Daly, Glyn. 1991. 'The Discursive Construction of Economic Space: Logics of Organization and Disorganization'. *Economy and Society* 20 (1): 79–102. <https://doi.org/10.1080/030851491000000003>.
- Danielsson, Jon, Kevin R. James, Marcela Valenzuela, and Ilknur Zer. 2016. 'Model Risk of Risk Models'. *Journal of Financial Stability* 23 (April): 79–91. <https://doi.org/10.1016/j.jfs.2016.02.002>.
- Danielsson, Jon, Marcela Valenzuela, and Ilknur Zer. 2015. 'Volatility, Financial Crises and Minsky's Hypothesis'. *VoxEU.Org* (blog). 2 October 2015. <http://voxeu.org/article/volatility-financial-crises-and-minskys-hypothesis>.
- Datz, Giselle. 2013. 'The Narrative of Complexity in the Crisis of Finance: Epistemological Challenge and Macroprudential Policy Response'. *New Political Economy* 18 (4): 459–79. <https://doi.org/10.1080/13563467.2012.710601>.
- Davies, William. 2011. 'Economic Advice as a Vocation: Symbioses of Scientific and Political Authority'. *The British Journal of Sociology* 62 (2): 304–23. <https://doi.org/10.1111/j.1468-4446.2011.01366.x>.
- . 2017. *The Limits of Neoliberalism: Authority, Sovereignty and the Logic of Competition*. Revised edition. Theory, Culture & Society. Los Angeles ; London: SAGE.
- Davies, William, and Linsey McGoey. 2012. 'Rationalities of Ignorance: On Financial Crisis and the Ambivalence of Neo-Liberal Epistemology'. *Economy and Society* 41 (1): 64–83. <https://doi.org/10.1080/03085147.2011.637331>.

- D'Costa, Anthony P. 2012. 'Capitalism and Economic Nationalism: Asian State Activism in the World Economy'. In *Globalization and Economic Nationalism in Asia*, edited by Anthony P. D'Costa, 1–32. Oxford, New York: Oxford University Press.
- De Goede, Marieke. 2004. 'Repoliticizing Financial Risk'. *Economy and Society* 33 (2): 197–217. <https://doi.org/10.1080/03085140410001677120>.
- . 2005. *Virtue, Fortune, and Faith: A Genealogy of Finance*. Borderlines, v. 24. Minneapolis: University of Minnesota Press.
- Deans, Phil. 1996. 'The Capitalist Developmental State in East Asia'. In *State Strategies in the Global Political Economy*, 78–102. London: Pinter.
- Dent, Christopher M. 2010. 'Organizing the Wider East Asia Region'. Working Paper 62. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank. [https://aric.adb.org/pdf/workingpaper/WP62\\_Dent\\_Organizing\\_the\\_Wider\\_East\\_Asia\\_Region.pdf](https://aric.adb.org/pdf/workingpaper/WP62_Dent_Organizing_the_Wider_East_Asia_Region.pdf).
- Dirlik, Arif. 1996. 'Chinese History and the Question of Orientalism'. *History and Theory* 35 (4): 96–118. <https://doi.org/10.2307/2505446>.
- Dow, Sheila. 2008. 'Plurality in Orthodox and Heterodox Economics'. *The Journal of Philosophical Economics* I (2): 73–96.
- . 2013. 'Endogenising Uncertainty'. Conference paper presented at Annual Plenary Conference of INET. Hong Kong. April 4–7.
- Dower, John W. 1990. 'The Useful War'. *Daedalus* 119 (3): 49–70.
- Drazen, Allan, and William Easterly. 2001. 'Do Crises Induce Reform? Simple Empirical Tests of Conventional Wisdom'. *Economics & Politics* 13 (2): 129–57. <https://doi.org/10.1111/1468-0343.00087>.
- Drazen, Allan, and Vittorio Grilli. 1990. 'The Benefits of Crises for Economic Reforms'. Working Paper 3527. National Bureau of Economic Research. <https://doi.org/10.3386/w3527>.

- Drezner, Daniel W., and Kathleen R. McNamara. 2013. 'International Political Economy, Global Financial Orders and the 2008 Financial Crisis'. *Perspectives on Politics* 11 (1): 155–66. <https://doi.org/10.1017/S1537592712003660>.
- Duara, Prasenjit. 2010. 'Asia Redux: Conceptualizing a Region for Our Times'. *The Journal of Asian Studies* 69 (4): 963–83. <https://doi.org/10.1017/S0021911810002858>.
- Elias, Juanita, and Lena Rethel. 2016. 'Southeast Asia and Everyday Political Economy'. In *The Everyday Political Economy of Southeast Asia*, edited by Juanita Elias and Lena Rethel, 3–24. Cambridge: Cambridge University Press.
- Emmers, Ralf, and John Ravenhill. 2011. 'The Asian and Global Financial Crises: Consequences for East Asian Regionalism'. *Contemporary Politics* 17 (2): 133–49. <https://doi.org/10.1080/13569775.2011.565982>.
- Engelen, Ewald, Ismail Ertürk, Julie Froud, Sukhdev Johal, Adam Leaver, Michael Moran, and Karel Williams. 2012. 'Misrule of Experts? The Financial Crisis as Elite Debacle'. *Economy and Society* 41 (3): 360–82. <https://doi.org/10.1080/03085147.2012.661634>.
- ERIA. n.d. 'History - About Us: ERIA'. Accessed 18 September 2018. <http://www.eria.org/about-us/history/>.
- Erturk, Ismail, Julie Froud, Adam Leaver, Michael Moran, and Karel Williams. 2011. 'Haldane's Gambit'. *Journal of Cultural Economy* 4 (4): 387–404. <https://doi.org/10.1080/17530350.2011.609696>.
- European Commission. 2017. 'Economic Resilience in EMU: Thematic Discussions on Growth and Jobs'. Brussels: European Commission. <https://www.consilium.europa.eu/media/23535/eurogroup-15-september-item1-com-note-economic-resilience-in-emu.pdf>.

- Ferchen, Matt. 2013. 'Whose China Model Is It Anyway? The Contentious Search for Consensus'. *Review of International Political Economy* 20 (2): 390–420. <https://doi.org/10.1080/09692290.2012.660184>.
- Fine, Ben. 2001. 'Neither the Washington nor the Post-Washington Consensus'. In *Development Policy in the Twenty-First Century: Beyond the Post-Washington Consensus*, edited by Ben Fine, Costas Lapavistas, and Jonathan Pincus, 1–27. London: Routledge.
- . 2006. 'Critical Realism and Heterodoxy'. Unpublished mimeo. <https://eprints.soas.ac.uk/7024/>.
- . 2016. 'The Endemic and Systemic Malaise of Mainstream Economics'. Working Paper 190. FFESSUD Working Paper. Leeds: Leeds University Business School. [https://eprints.soas.ac.uk/23417/1/FESSUD\\_WP190\\_The-EndemicSystemic-Malaise-of-Mainstream-Economics.pdf](https://eprints.soas.ac.uk/23417/1/FESSUD_WP190_The-EndemicSystemic-Malaise-of-Mainstream-Economics.pdf).
- Flinders, Matthew, and Jim Buller. 2006. 'Depoliticisation: Principles, Tactics and Tools'. *British Politics* 1 (3): 293–318. <https://doi.org/10.1057/palgrave.bp.4200016>.
- Foot, Rosemary, and Andrew Walter. 2011. 'Macroeconomic Policy Surveillance'. In *China, the United States, and Global Order*, edited by Rosemary Foot and Andrew Walter, 79–132. New York: Cambridge University Press.
- Fourcade, Marion. 2009. *Economists and Societies: Discipline and Profession in the United States, Britain, and France, 1890s to 1990s*. Princeton Studies in Cultural Sociology. Princeton: Princeton University Press.
- . 2018. 'Economics: The View from Below'. *Swiss Journal of Economics and Statistics* 154 (1): 5. <https://doi.org/10.1186/s41937-017-0019-2>.
- Fourcade, Marion, Etienne Ollion, and Yann Algan. 2015. 'The Superiority of Economists'. *Journal of Economic Perspectives* 29 (1): 89–114. <https://doi.org/10.1257/jep.29.1.89>.

- Freixas, Xavier, Luc Laeven, and José-Luis Peydró. 2015. *Systemic Risk, Crises, and Macroprudential Regulation*. Cambridge, Massachusetts: MIT Press.
- French, Shaun, Andrew Leyshon, and Nigel Thrift. 2009. 'A Very Geographical Crisis: The Making and Breaking of the 2007–2008 Financial Crisis'. *Cambridge Journal of Regions, Economy and Society* 2 (2): 287–302. <https://doi.org/10.1093/cjres/rsp013>.
- Frydman, Roman, and Michael Goldberg. 2013. 'The Contingent Expectations Hypothesis: Rationality and Contingent Knowledge in Macroeconomics and Finance Theory'. Conference paper presented at Annual Plenary Conference of INET. Hong Kong. April 4–7.
- FSB. 2012. 'Identifying the Effects of Regulatory Reforms on Emerging Market and Developing Economies: A Review of Potential Unintended Consequences'. Basel: Financial Stability Board. [http://www.fsb.org/wp-content/uploads/r\\_120619e.pdf](http://www.fsb.org/wp-content/uploads/r_120619e.pdf).
- FSB, IMF, and BIS. 2011. 'Macroprudential Policy Tools and Frameworks: Progress Report to G20'. Basel: Financial Stability Board. [http://www.fsb.org/wp-content/uploads/r\\_1103.pdf](http://www.fsb.org/wp-content/uploads/r_1103.pdf).
- G-20. 2008. 'Declaration of the Summit on Financial Markets and the World Economy'. Meeting document, Washington, D.C., November 15. <https://www.oecd.org/g20/summits/washington-dc/declarationofthesummitonfinancialmarketsandtheworldeconomy.htm>.
- . 2009. 'G-20 Leaders' Statement: The Pittsburgh Summit'. Meeting document, Pittsburgh, September 24. <http://www.g20.utoronto.ca/2009/2009communique0925.html>.
- Galati, Gabriele, and Richhild Moessner. 2013. 'Macroprudential Policy – a Literature Review'. *Journal of Economic Surveys* 27 (5): 846–78. <https://doi.org/10.1111/j.1467-6419.2012.00729.x>.

- Gang, Yi. 2009. 'Global Cooperation, China's Economy, and the IMF'. Speech presented at the Twentieth Meeting of the International Monetary and Financial Committee, Washington, D.C., October 4. <http://www.bis.org/review/r091020e.pdf>.
- Genito, Lorenzo. 2017. 'Mandatory Clearing After the Crisis: The Infrastructural Authority of Clearing Houses in Global Finance'. Conference paper presented at the 89<sup>th</sup> Annual Conference of the Canadian Political Science Association. Ryerson University, Ontario.
- Gerring, John. 2007. *Case Study Research: Principles and Practices*. New York: Cambridge University Press.
- Goldin, Ian, and Mike Mariathasan. 2014. *The Butterfly Defect: How Globalisation Creates Systemic Risks, and What to Do about It*. Princeton: Princeton University Press.
- Goldin, Ian, and Tiffany Vogel. 2010. 'Global Governance and Systemic Risk in the 21st Century: Lessons from the Financial Crisis'. *Global Policy* 1 (1): 4–15. <https://doi.org/10.1111/j.1758-5899.2009.00011.x>.
- Goodhart, Lucy M. 2015. 'Brave New World? Macro-Prudential Policy and the New Political Economy of the Federal Reserve'. *Review of International Political Economy* 22 (2): 280–310. <https://doi.org/10.1080/09692290.2014.915578>.
- Grabel, Ilene, and Dani Rodrik. 2018. 'The Changing Institutional Landscape of Financial Governance and Developmental Finance in Emerging Market and Developing Economies'. In *When Things Don't Fall Apart: Global Financial Governance and Developmental Finance in an Age of Productive Incoherence*, 137–91. Cambridge, UNITED STATES: MIT Press. <http://ebookcentral.proquest.com/lib/warw/detail.action?docID=5216604>.
- Grimes, William. 2006. 'East Asian Financial Regionalism in Support of the Global Financial Architecture? The Political Economy of Regional Nesting'. *Journal*

- of East Asian Studies* 6 (3): 353–80.  
<https://doi.org/10.1017/S1598240800004628>.
- . 2011. ‘The Future of Regional Liquidity Arrangements in East Asia: Lessons from the Global Financial Crisis’. *The Pacific Review* 24 (3): 291–310. <https://doi.org/10.1080/09512748.2011.577233>.
- . 2012. ‘Financial Regionalism after the Global Financial Crisis: Regionalist Impulses and Nationalist Strategies’. In *The Consequences of the Global Financial Crisis: The Rhetoric of Reform and Regulation*, edited by Wyn Grant and Graham K. Wilson, 88–108. Oxford, UK: Oxford University Press.
- Gruin, Julian. 2013. ‘Asset or Liability? The Role of the Financial System in the Political Economy of China’s Rebalancing’. *Journal of Current Chinese Affairs* 42 (4): 73–104.
- Grunberg, Emile. 1978. “‘Complexity’ and ‘Open Systems’ in Economic Discourse”. *Journal of Economic Issues* 12 (3): 541–60. <https://doi.org/10.1080/00213624.1978.11503553>.
- Ha, Hoang Thi. 2018. “‘ASEAN Resilience: Continuity and Change’ by Hoang Thi Ha - ISEAS-Yusof Ishak Institute”. 2018. <https://www.iseas.edu.sg/medias/commentaries/item/7416-asean-resilience-continuity-and-change-by-hoang-thi-ha>.
- Haldane, Andrew. 2013. ‘Macroprudential Policies: When and How to Use Them’ presented at the Rethinking Macro Policu II: First Steps and Early Lessons, Washington, D.C., April 16.
- Haldane, Andrew G., and Robert M. May. 2011. ‘Systemic Risk in Banking Ecosystems’. *Nature* 469 (7330): 351–55. <https://doi.org/10.1038/nature09659>.
- Hale, Thomas, David Held, and Kevin Young. 2013. ‘Gridlock: From Self-Reinforcing Interdependence to Second-Order Cooperation Problems’. *Global Policy* 4 (3): 223–35. <https://doi.org/10.1111/1758-5899.12068>.

- Hall, Peter A. 1993. 'Policy Paradigms, Social Learning, and the State: The Case of Economic Policymaking in Britain'. *Comparative Politics* 25 (3): 275–96. <https://doi.org/10.2307/422246>.
- Hall, Rodney Bruce. 2003. 'The Discursive Demolition of the Asian Development Model'. *International Studies Quarterly* 47 (1): 71–99. <https://doi.org/10.1111/1468-2478.4701004>.
- Hameiri, Shahar. 2011. 'State Transformation, Territorial Politics and the Management of Transnational Risk'. *International Relations* 25 (3): 381–97. <https://doi.org/10.1177/0047117811416290>.
- Han, Fei, and Thiam Hee Ng. 2011. 'ASEAN-5 Macroeconomic Forecasting Using a GVAR Model'. 76. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/28567/wp76-han-asean-5-macroeconomic-forecasting.pdf>.
- Harberger, Arnold C. 1993. 'Secrets of Success: A Handful of Heroes'. *The American Economic Review* 83 (2): 343–50.
- Heath, Robert L., and Katherine McComas. 2015. 'Interest, Interest, Whose Interest Is at Risk? Risk Governance, Issues Management, and the Fully Functioning Society'. In *Risk Governance: The Articulation of Hazard, Politics, and Ecology*, edited by Urbano Fra.Paleo, 117–33. Dordrecht: Springer.
- Held, David, and Mathias Koenig-Archibugi. 2004. 'Introduction'. *Government and Opposition* 39 (2): 125–31. <https://doi.org/10.1111/j.1477-7053.2004.00117.x>.
- Helleiner, Eric. 2014. *The Status Quo Crisis: Global Financial Governance after the 2007-08 Financial Meltdown*. Oxford ; New York: Oxford University Press.
- Helleiner, Eric, and Stefano Pagliari. 2011. 'The End of an Era in International Financial Regulation? A Postcrisis Research Agenda'. *International*



*Organization* 65 (1): 169–200.  
<https://doi.org/10.1017/S0020818310000305>.

Hendry, David F., and John N. J. Muellbauer. 2018. 'The Future of Macroeconomics: Macro Theory and Models at the Bank of England'. *Oxford Review of Economic Policy* 34 (1–2): 287–328.  
<https://doi.org/10.1093/oxrep/grx055>.

Henning, C. Randall. 2004. *East Asian Financial Cooperation*. Washington, D.C.: Institute for International Economics.

———. 2011. 'Coordinating Regional and Multilateral Financial Institutions'. Working Paper 11–9. PIIE Working Paper. Peterson Institute for International Economics, Washington, D.C.

Henriksen, Lasse F. 2013. 'Economic Models as Devices of Policy Change: Policy Paradigms, Paradigm Shift, and Performativity'. *Regulation & Governance* 7 (4): 481–95. <https://doi.org/10.1111/reg0.12031>.

Higgott, Richard. 2012. 'Economic Multilateralism: A Search for Legitimacy and Coherence in the Early Twenty-First Century'. In *State, Globalization and Multilateralism: The Challenges of Institutionalizing Regionalism*, edited by Mario Telò, 61–78. United Nations University Series on Regionalism, v. 5. Dordrecht ; New York: Springer.

Hill, Hal, and Jayant Menon. 2012. 'Financial Safety Nets in Asia: Genesis, Evolution, Adequacy, and Way Forward'. ADBI Working Paper No. 395. Asian Development Bank Institute, Tokyo.

Holden, Ken. 1995. 'Vector Auto Regression Modeling and Forecasting'. *Journal of Forecasting* 14 (3): 159–66. <https://doi.org/10.1002/for.3980140302>.

Howitt, Peter, Alan Kirman, Axel Leijonhufvud, Perry Mehrling, and David Colander. 2008. 'Beyond DSGE Models: Toward an Empirically Based Macroeconomics'. Working Paper 08–08. Middlebury College Economics

Discussion Paper. Middlebury, Vermont: Middlebury College Department of Economics.

Hur, Seok-Kyun, Shikha Jha, Donghyun Park, and Pilipinas F. Quising. 2010. 'Did Fiscal Stimulus Lift Developing Asia out of the Global Crisis? A Preliminary Empirical Investigation'. 215. ADB Economics Working Paper Series. Manila, Philippines: Asian Development Bank. <https://www.adb.org/publications/did-fiscal-stimulus-lift-developing-asia-out-global-crisis-preliminary-empirical>.

Hutchcroft, Paul D. 1998. *Booty Capitalism: The Politics of Banking in the Philippines*. Ithaca, N.Y. ; London: Cornell University Press.

IEO. 2006. 'Multilateral Surveillance'. Evaluation Report. Washington, D.C.: International Monetary Fund.

———. 2009. 'IMF Interactions with Member Countries'. Evaluation Report. Washington, D.C.: International Monetary Fund. <http://www.ieo-imf.org/ieo/files/completedevaluations/A.%20%20Full%20Text%20of%20Main%20Report.pdf>.

———. 2011a. 'IMF Performance in the Run-Up to the Financial and Economic Crisis Annex 7: How Did Country Authorities View the IMF's Performance?' International Monetary Fund. [http://www.ieo-imf.org/ieo/files/completedevaluations/01102011Crisis\\_VI\\_Annex\\_7\\_How\\_Did\\_Country\\_Authorities\\_View\\_the\\_IMF\\_Performance.pdf](http://www.ieo-imf.org/ieo/files/completedevaluations/01102011Crisis_VI_Annex_7_How_Did_Country_Authorities_View_the_IMF_Performance.pdf).

———. 2011b. 'IMF Performance in the Run-up to the Financial and Economic Crisis: IMF Surveillance in 2004-07'. Evaluation Report. Washington, D.C.: International Monetary Fund.

———. 2013. 'The Role of the IMF as Trusted Advisor'. Evaluation Report. Washington, D.C.: International Monetary Fund. [https://www.imf.org/ieo/files/completedevaluations/RITA\\_-\\_Main\\_Report.pdf](https://www.imf.org/ieo/files/completedevaluations/RITA_-_Main_Report.pdf).

- . 2016. 'Behind the Scenes with Data at the IMF'. Evaluation Report. Washington, D.C.: International Monetary Fund. <https://www.imf.org/ieo/files/completedevaluations/Statistics%20-%20Full%20Report.pdf>.
- . 2017. 'IMF Exchange Rate Policy Advice Evaluation Update 2017'. Washington, D.C.: International Monetary Fund. [http://www.ieo-imf.org/ieo/files/updates/IEO\\_EvalUpdate2017\\_web.pdf](http://www.ieo-imf.org/ieo/files/updates/IEO_EvalUpdate2017_web.pdf).
- IMF. 2007a. 'IMF Survey: Landmark Framework for IMF Surveillance'. IMF. 2007. <https://www.imf.org/en/News/Articles/2015/09/28/04/53/sopol0621b>.
- . 2007b. 'Review of the 1977 Decision—Proposal for a New Decision Companion Paper'. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/np/pp/2007/eng/nd.pdf>.
- . 2009. 'Responding to the Financial Crisis and Measuring Systemic Risks'. Global Financial Stability Report. Washington, D.C.: International Monetary Fund.
- . 2013a. '2013 Spillover Report - Analytical Underpinnings and Other Background'. IMF Multilateral Policy Issues Report. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/np/pp/eng/2013/070313a.pdf>.
- . 2013b. 'Integrated Surveillance Decision Factsheet'. International Monetary Fund. [www.imf.org/external/np/exr/facts/pdf/isd.pdf](http://www.imf.org/external/np/exr/facts/pdf/isd.pdf).
- . 2013c. 'Key Aspects of Macroprudential Policy'. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/np/pp/eng/2013/061013b.pdf>.
- . 2013d. 'People's Republic of China 2013 Article IV Consultation'. 13/211. IMF Country Report. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/scr/2013/cr13211.pdf>.

- . 2014a. ‘2014 Triennial Surveillance Review - Overview Paper’. Washington, D.C.: International Monetary Fund. <https://www.imf.org/en/Publications/Policy-Papers/Issues/2016/12/31/2014-Triennial-Surveillance-Review-Overview-Paper-PP4897>.
- . 2014b. ‘2014 Triennial Surveillance Review Staff Background Studies’. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/np/pp/eng/2014/073014i.pdf>.
- . 2014c. ‘Press Release: IMF Executive Board Reviews Surveillance: Supporting Sustainable Growth in a Post-Crisis Interconnected World’. IMF. 2014. <https://www.imf.org/en/News/Articles/2015/09/14/01/49/pr14454>.
- . 2015. ‘2015 Spillover Report’. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/np/pp/eng/2015/060815.pdf>.
- . 2016a. ‘ASEAN-5 Cluster Report: Evolution of Monetary Policy Frameworks’. IMF Country Report 16/176. Washington, D.C.: International Monetary Fund.
- . 2016b. ‘Strengthening Surveillance—Lessons from the Financial Crisis’. International Monetary Fund. <https://www.imf.org/external/np/exr/facts/pdf/refsurv.pdf>.
- . 2017a. ‘Approaches to Macrofinancial Surveillance in Article IV Reports’. IMF Policy Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/~media/Files/Publications/PP/pp020217approaches-to-macrofinancial-surveillance-in-article-iv-reports.ashx>.
- . 2017b. ‘Global Financial Stability Report: Getting the Policy Mix Right’. Washington, D.C.: International Monetary Fund.
- . 2017c. ‘People’s Republic of China 2017 Article IV Consultation’. 17/247. IMF Country Report. Washington, D.C.: International Monetary Fund.

- <https://www.imf.org/~media/Files/Publications/CR/2017/cr17247.aspx>.
- . 2017d. 'Regional Economic Outlook for Asia and the Pacific: Preparing for Choppy Seas'. Washington, D.C.: International Monetary Fund.
- . 2018a. 'About the IMF: Work: Lending'. 2018. <https://www.imf.org/external/about/lending.htm>.
- . 2018b. 'How the IMF Promotes Global Economic Stability'. IMF. 2018. <https://www.imf.org/en/About/Factsheets/Sheets/2016/07/27/15/22/How-the-IMF-Promotes-Global-Economic-Stability>.
- . 2018c. 'IMF Surveillance Factsheet'. IMF. 2018. <https://www.imf.org/en/About/Factsheets/IMF-Surveillance>.
- IMF, BIS, and FSB. 2009. 'Guidance to Assess the Systemic Importance of Financial Institutions, Markets, and Instruments: Initial Considerations'. International Monetary Fund, Bank for International Settlements, and Financial Stability Board.
- IMF, FSB, and BIS. 2016. 'Elements of Effective Macroprudential Policies: Lessons from International Experience'. International Monetary Fund, Bank for International Settlements, and Financial Stability Board. <http://www.imf.org/external/np/g20/pdf/083116.pdf>.
- Isard, Peter. 2000. 'The Role of MULTIMOD in the IMF's Policy Analysis'. 00/5. IMF Policy Discussion Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/pdp/2000/pdp05.pdf>.
- Jackson, Patrick Thaddeus. 2016. *The Conduct of Inquiry in International Relations: Philosophy of Science and Its Implications for the Study of World Politics*. Second edition. The New International Relations. London ; New York: Routledge, Taylor & Francis Group.

- James, Harold. 1995. 'The Historical Development of the Principle of Surveillance'. *Staff Papers* 42 (4): 762–91.  
<https://doi.org/10.2307/3867598>.
- . 1996. *International Monetary Cooperation Since Bretton Woods*. International Monetary Fund.
- Janssen, Maarten C.W. 2008. 'The New Palgrave Dictionary of Economics Online'. Edited by Steven N. Durlauf and Lawrence Blume. Basingstoke, Hampshire ; New York: Palgrave Macmillan.
- Jayasuriya, Kanishka. 2003. 'Embedded Mercantilism and Open Regionalism: The Crisis of a Regional Political Project'. *Third World Quarterly* 24 (2): 339–55.  
<https://doi.org/10.1080/0143659032000074628>.
- Jiang, Yang. 2010. 'Response and Responsibility: China in East Asian Financial Cooperation'. *The Pacific Review* 23 (5): 603–23.  
<https://doi.org/10.1080/09512748.2010.521850>.
- Johnson, Chalmers. 1982. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975*. Stanford, Calif: Stanford University Press.
- Jung, Heon Joo. 2009. 'Financial Regionalism in East Asia: Regional Surveillance Cooperation and Enforcement Problem'. *Pacific Focus* 24 (3): 379–401.  
<https://doi.org/10.1111/j.1976-5118.2009.01031.x>.
- Kageyama, Hidenobu. 2000. 'Japan to Phase Out "Miyazawa" Plan Of Assistance for Its Asian Neighbors'. *WSJ*. 2000.  
<http://www.wsj.com/articles/SB954869139837476350>.
- Kaminsky, Graciela L., and Carmen M. Reinhart. 1999. 'The Twin Crises: The Causes of Banking and Balance-Of-Payments Problems'. *The American Economic Review* 89 (3): 473–500.
- Kang, Heedon, Francis Vitek, Rina Bhattacharya, Phakawa Jeasakul, Sònia Muñoz, Naixi Wang, and Rasool Zandvakil. 2017. 'Macroprudential Policy Spillovers : A Quantitative Analysis'. 17/170. IMF Working Paper.

- Washington, D.C.: International Monetary Fund.  
<https://www.imf.org/en/Publications/WP/Issues/2017/07/24/Macprudential-Policy-Spillovers-A-Quantitative-Analysis-45062>.
- Katada, Saori N. 2011. 'Seeking a Place for East Asian Regionalism: Challenges and Opportunities under the Global Financial Crisis'. *The Pacific Review* 24 (3): 273–90. <https://doi.org/10.1080/09512748.2011.577235>.
- Kawai, Masahiro. 2015. 'From the Chiang Mai Initiative to an Asian Monetary Fund'. Working Paper 527. ADBI Working Paper. Tokyo: Asian Development Bank Institute.
- Kawai, Masahiro, and Cindy Houser. 2007. 'Evolving ASEAN+3 ERPD: Towards Peer Reviews or Due Diligence?' Working Paper 79. ADBI Discussion Paper. Tokyo: Asian Development Bank Institute.  
<https://www.adb.org/sites/default/files/publication/156718/adbi-dp79.pdf>.
- Kaya, Ayse. 2012. 'Conflicted Principals, Uncertain Agency: The International Monetary Fund and the Great Recession'. *Global Policy* 3 (1): 24–34. <https://doi.org/10.1111/j.1758-5899.2011.00096.x>.
- Kelly, Ann H., and Linsey McGoey. 2018. 'Facts, Power and Global Evidence: A New Empire of Truth'. *Economy and Society* 47 (1): 1–26. <https://doi.org/10.1080/03085147.2018.1457261>.
- Kelly, Philip F. 2001. 'Metaphors of Meltdown: Political Representations of Economic Space in the Asian Financial Crisis'. *Environment and Planning D: Society and Space* 19 (6): 719–42. <https://doi.org/10.1068/d277>.
- Kelly, Philip F., Kris Olds, and Henry Wai-chung Yeung. 2001. 'Geographical Perspectives on the Asian Economic Crisis'. *Geoforum* 1 (32): vii–xiii.
- Kenen, Peter B. 2001. 'The Architecture Exercise: What's New?' In *The International Financial Architecture: What's New? What's Missing?*, 87–123. Washington, D.C.: Peterson Institute for International Economics.

- Kennedy, Scott. 2010. 'The Myth of the Beijing Consensus'. *Journal of Contemporary China* 19 (65): 461–77.  
<https://doi.org/10.1080/10670561003666087>.
- Klamer, Arjo. 2007. *Speaking of Economics: How to Get in the Conversation*. Economics as Social Theory. London ; New York: Routledge.
- Knight, Malcolm D. 2014. 'Reforming the Global Architecture of Financial Regulation: The G20, the IMF and the FSB'. Working Paper 42. CIGI Papers. Ontario, Canada: Centre for International Governance Innovation.  
<https://www.cigionline.org/publications/reforming-global-architecture-financial-regulation-g20-imf-and-fsb-0>.
- Kohli, Harinder, Ashok Sharma, and Anil Sood, eds. 2011. *Asia 2050: Realizing the Asian Century*. New Delhi: Sage Publications.  
<https://doi.org/10.4135/9781446270349>.
- Konings, Martijn. 2016. 'Governing the System: Risk, Finance, and Neoliberal Reason'. *European Journal of International Relations* 22 (2): 268–88.  
<https://doi.org/10.1177/1354066115593393>.
- Krugman, Paul. 2009. 'How Did Economists Get It So Wrong?' *The New York Times*, 2 September 2009, sec. Magazine.  
<https://www.nytimes.com/2009/09/06/magazine/06Economic-t.html>.
- Kumhof, Michael, Douglas Laxton, Dirk Muir, and Susanna Mursula. 2010. 'The Global Integrated Monetary and Fiscal Model (GIMF) – Theoretical Structure'. 10/34. IMF Working Paper. Washington, D.C.: International Monetary Fund. [https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2010/\\_wp1034.ashx](https://www.imf.org/~media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/wp/2010/_wp1034.ashx).
- Kuroda, Haruhiko, and Masahiro Kawai. 2002. 'Strengthening Regional Financial Cooperation in East Asia'. Working Paper 332. Pacific Economic Papers. Canberra, Australia: Australian National University. <https://openresearch-repository.anu.edu.au/bitstream/1885/40640/3/pep-332.pdf>.



- Lagarde, Christine. 2016. 'The Role of Emerging Markets in a New Global Partnership for Growth'. Speech, University of Maryland, February 4.
- Langguth, Gerd. 2003. 'Asian Values Revisited'. *Asia Europe Journal* 1 (1): 25–42. <https://doi.org/10.1007/s103080200005>.
- Lavoie, Marc. 2016. 'Rethinking Macroeconomic Theory Before the Next Crisis'. *Institute for New Economic Thinking* (blog). 23 September 2016. <https://www.ineteconomics.org/perspectives/blog/rethinking-macro-theory>.
- Law, John. 2004. *After Method: Mess in Social Science Research*. International Library of Sociology. London ; New York: Routledge.
- Lawson, Tony. 1997. *Economics and Reality*. Economics as Social Theory. London: Routledge.
- . 2003. *Reorienting Economics*. Economics as Social Theory. London: Routledge.
- . 2015a. 'Continuing Myths and Fallacies of Modern Economics'. In *Essays on the Nature and State of Modern Economics*, 1–12. London: Routledge.
- . 2015b. 'Mathematical Modelling and Ideology in the Economics Academy: Competing Explanations of the Failings of the Modern Discipline'. In *Essays on the Nature and State of Modern Economics*, 142–68. London: Routledge.
- Lazear, Edward P. 2000. 'Economic Imperialism'. *The Quarterly Journal of Economics* 115 (1): 99–146. <https://doi.org/10.1162/003355300554683>.
- Lee, Catherine H. 2003. 'To Thine Ownself Be True: IMF Conditionality and Erosion of Economic Sovereignty in the Asian Financial Crisis'. *University of Pennsylvania Journal of International Economic Law* 24: 875.
- Lidskog, Rolf, Linda Soneryd, and Ylva Ugglå. 2010. *Transboundary Risk Governance*. Earthscan.

- Lim, Joseph Y. 1999. 'The Macroeconomics of the East Asian Crisis and the Implications of the Crisis for Macroeconomic Theory'. *The Manchester School* 67 (5): 428–59. <https://doi.org/10.1111/1467-9957.00168>.
- Lim, Se Hee, and Noel G. Reyes. 2014. 'Financial Monitoring in the New ASEAN-5 Countries'. Working Paper 134. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/42490/reiwp-134-financial-monitoring-new-asean5-countries.pdf>.
- Lindé, Jesper. 2018. 'DSGE Models: Still Useful in Policy Analysis?' *Oxford Review of Economic Policy* 34 (1–2): 269–86. <https://doi.org/10.1093/oxrep/grx058>.
- Lipsky, John. 2010. 'Forewarned Is Forearmed: How the Early Warning Exercise Expands the IMF's Surveillance Toolkit'. *IMF Blog* (blog). 23 September 2010. <https://blogs.imf.org/2010/09/23/forewarned-is-forearmed-how-the-early-warning-exercise-expands-the-imfs-surveillance-toolkit/>.
- Lombardi, Domenico, and Ngaire Woods. 2008. 'The Politics of Influence: An Analysis of IMF Surveillance'. *Review of International Political Economy* 15 (5): 711–39. <https://doi.org/10.1080/09692290802418724>.
- Lupo-Pasini, Federico. 2017. 'Financial Stability in International Law'. *Melbourne Journal of International Law* 18: 45.
- Maas, Harro, and Liz Waters. 2014. *Economic Methodology: A Historical Introduction*. Economics as Social Theory 36. London: Routledge, Taylor & Francis Group.
- MacKenzie, Donald A. 2008. *An Engine, Not a Camera: How Financial Models Shape Markets*. 1st MIT Press pbk. ed. Inside Technology. Cambridge, MA ; London: MIT Press.

- MacLeod, Gordon, and Mark Goodwin. 1999. 'Space, Scale and State Strategy: Rethinking Urban and Regional Governance'. *Progress in Human Geography* 23 (4): 503–27. <https://doi.org/10.1191/030913299669861026>.
- Madra, Yahya M., and Fikret Adaman. 2014. 'Neoliberal Reason and Its Forms: De-Politicisation Through Economisation'. *Antipode* 46 (3): 691–716. <https://doi.org/10.1111/anti.12065>.
- Mahbubani, Kishore. 2009. 'Lessons for the West from Asian Capitalism'. *Financial Times*, 18 March 2009. <https://www.ft.com/content/a9c335e4-13f8-11de-9e32-0000779fd2ac>.
- . 2011. 'Asia Has Had Enough of Excusing the West'. *Financial Times*, 25 January 2011. <http://www.ft.com/cms/s/0/44616bb0-28c0-11e0-aa18-00144feab49a.html>.
- . 2018. *Has the West Lost It?: A Provocation*. Penguin UK.
- Mahoney, James, and Kathleen Thelen. 2010. 'A Theory of Gradual Institutional Change'. In *Explaining Institutional Change: Ambiguity, Agency, and Power*, edited by James Mahoney and Kathleen Thelen, 1–37. Cambridge: Cambridge University Press.
- Majuca, Ruperto, and Jesson Pagaduan. 2015. 'Transmission Channels of Economic Shocks in ASEAN'. 2015–1. ERIA Policy Brief. Jakarta: Economic Research Institute for ASEAN and East Asia.
- Mäki, Uskali. 2001a. 'Economic Ontology: What? Why? How?' In *The Economic World View: Studies in the Ontology of Economics*, 3–14. Cambridge: Cambridge University Press.
- . 2001b. 'The Way the World Works (Www): Towards an Ontology of Theory Choice'. In *The Economic World View: Studies in the Ontology of Economics*, 369–89. Cambridge: Cambridge University Press.

- . 2002. 'The Dismal Queen of the Social Sciences'. In *Fact and Fiction in Economics: Models, Realism, and Social Construction*, edited by Uskali Mäki, 3–34. Cambridge: Cambridge University Press.
- Mance, Henry. 2016. 'Britain Has Had Enough of Experts, Says Gove'. *Financial Times*. 3 June 2016. <https://www.ft.com/content/3be49734-29cb-11e6-83e4-abc22d5d108c>.
- Manupipatpong, Worapot. 2002. 'The ASEAN Surveillance Process and the East Asian Monetary Fund'. *ASEAN Economic Bulletin* 19 (1): 111–22.
- Manzano, George. 2001. 'Is There Any Value-Added in the ASEAN Surveillance Process?' *ASEAN Economic Bulletin* 18 (1): 94–102.
- May, Robert M., Simon A. Levin, and George Sugihara. 2008. 'Complex Systems: Ecology for Bankers'. *Nature* 451 (7181): 893–95. <https://doi.org/10.1038/451893a>.
- McGoey, Linsey. 2012. 'Strategic Unknowns: Towards a Sociology of Ignorance'. *Economy and Society* 41 (1): 1–16. <https://doi.org/10.1080/03085147.2011.637330>.
- Menon, Ravi. 2012. 'Regional Safety Nets to Complement Global Safety Nets'. Speech presented at the Opening Ceremony of the ASEAN+3 Macroeconomic Research Office, Singapore, January 31.
- Miller, John. 2004. 'The Roots and Implications of East Asian Regionalism'. Asia-Pacific Center for Security Studies Occasional Paper Series. Honolulu: Asia-Pacific Center for Security Studies. <http://www.dtic.mil/docs/citations/ADA446098>.
- Miranda-Agrippino, Silvia, and Hélène Rey. 2012. 'World Asset Markets and Global Liquidity'. [http://helenerey.eu/AjaxRequestHandler.ashx?Function=GetSecuredDOC&DOCUrl=App\\_Data/helenerey\\_eu/Working-Papers\\_en-](http://helenerey.eu/AjaxRequestHandler.ashx?Function=GetSecuredDOC&DOCUrl=App_Data/helenerey_eu/Working-Papers_en-)

GB/\_Documents\_2012-  
13/72802451958\_67186463733\_MAIN\_Nov26.pdf.

Mirowski, Philip. 1991. 'The When, the How and the Why of Mathematical Expression in the History of Economic Analysis'. *Journal of Economic Perspectives* 5 (1): 145–57. <https://doi.org/10.1257/jep.5.1.145>.

———. 2002. *Machine Dreams: Economics Becomes a Cyborg Science*. Cambridge ; New York: Cambridge University Press.

Mirowski, Philip, and Edward Nik-Khah. 2017a. *Artificial Ignorance*. Oxford University Press. <http://0-www.oxfordscholarship.com.pugwash.lib.warwick.ac.uk/view/10.1093/acprof:oso/9780190270056.001.0001/acprof-9780190270056-chapter-17>.

———. 2017b. *It's Not Rational*. Oxford University Press. <http://0-www.oxfordscholarship.com.pugwash.lib.warwick.ac.uk/view/10.1093/acprof:oso/9780190270056.001.0001/acprof-9780190270056-chapter-1>.

Mitchell, Timothy. 1998. 'Fixing the Economy'. *Cultural Studies* 12 (1): 82–101. <https://doi.org/10.1080/095023898335627>.

———. 2005. 'The Work of Economics: How a Discipline Makes Its World'. *European Journal of Sociology / Archives Européennes de Sociologie* 46 (2): 297–320. <https://doi.org/10.1017/S000397560500010X>.

Momani, Bessma, and Kevin A. English. 2014. 'In Lieu of an Anchor: The Fund and Its Surveillance Function'. In *Handbook of the International Political Economy of Monetary Relations*, edited by Thomas Oatley and W. Kindred Winecoff, 428–49. Handbooks of Research on International Political Economy. Cheltenham, UK: Edward Elgar Publishing.

Montes, Manuel F. 1998. *The Currency Crisis in Southeast Asia*. Singapore: Institute of Southeast Asian Studies.

- Montiel, Peter J. 2011. 'Review of the IMF's Regional Economic Outlook Reports, 2003-09'. Working Paper 11/06. IEO Background Paper: International Monetary Fund.
- Morgan, Mary S. 2012. *The World in the Model: How Economists Work and Think*. Cambridge: Cambridge University Press.
- Moschella, Manuela. 2010. *Governing Risk: The IMF and Global Financial Crises*. International Political Economy Series. Basingstoke [England] ; New York: Palgrave Macmillan.
- . 2012. 'IMF Surveillance in Crisis: The Past, Present and Future of the Reform Process'. *Global Society* 26 (1): 43–60. <https://doi.org/10.1080/13600826.2011.629987>.
- Moss, Daniel. 2017. 'Indonesia's Balancing Act'. *Bloomberg.Com*, 24 July 2017. <https://www.bloomberg.com/view/articles/2017-07-24/crisis-memories-make-indonesia-s-balancing-act-harder>.
- Mügge, Daniel. 2016. 'Studying Macroeconomic Indicators as Powerful Ideas'. *Journal of European Public Policy* 23 (3): 410–27. <https://doi.org/10.1080/13501763.2015.1115537>.
- Murase, Tetsuji. 2007. 'Economic Surveillance in East Asia and Prospective Issues'. *The Kyoto Economic Review* 76 (1): 67–101. <https://doi.org/10.11179/ker.76.67>.
- Mwase, Nkunde, Papa N'Diaye, Hiroko Oura, Frantisek Ricka, Katsiaryna Svirydzenka, and Yuanyan Zhang. 2016. 'Spillovers from China: Financial Channels'. 5. Spillover Notes. Washington, D.C.: International Monetary Fund. file:///C:/Users/u1461490/Downloads/SpilloverNote5.pdf.
- Nesadurai, Helen E. S. 2004. 'Introduction: Economic Security, Globalization and Governance'. *The Pacific Review* 17 (4): 459–84. <https://doi.org/10.1080/0951274042000326023>.

- . 2009. 'Economic Surveillance as a New Mode of Regional Governance: Contested Knowledge and the Politics of Risk Management in East Asia'. *Australian Journal of International Affairs* 63 (3): 361–75. <https://doi.org/10.1080/10357710903104836>.
- Newman, Janet. 2017. 'The Politics of Expertise: Neoliberalism, Governance and the Practice of Politics'. In *Assembling Neoliberalism*, 87–105. Palgrave Macmillan, New York. [https://doi.org/10.1057/978-1-137-58204-1\\_5](https://doi.org/10.1057/978-1-137-58204-1_5).
- Nichols, Tom. 2017. *The Death of Expertise: The Campaign Against Established Knowledge and Why It Matters*. Oxford, New York: Oxford University Press.
- Nye, Joseph. 2018. 'Has the West Lost It? A Provocation, by Kishore Mahbubani'. *Financial Times*. 4 June 2018. <https://www.ft.com/content/930a8e9e-64be-11e8-a39d-4df188287fff>.
- Ocampo, Jose Antonio, and Daniel Titelman. 2012. 'Regional Monetary Cooperation in Latin America'. Working Paper 373. ADBI Working Paper. Tokyo: Asian Development Bank Institute. <https://www.adb.org/sites/default/files/publication/156228/adbi-wp373.pdf>.
- Palumbo, Antonella. 2017. 'Can "It" Happen Again? Defining the Battlefield for a Theoretical Revolution in Economics'. *Institute for New Economic Thinking* (blog). 27 February 2017. <https://www.ineteconomics.org/perspectives/blog/can-it-happen-again-defining-the-battlefield-for-a-theoretical-revolution-in-economics>.
- Park, Cyn-Young. 2017. 'Decoupling Asia Revisited'. 506. ADB Economics Working Paper Series. Manila, Philippines: Asian Development Bank. <https://www.adb.org/sites/default/files/publication/221156/ewp-506.pdf>.
- Park, Susan, and Antje Vetterlein, eds. 2010. *Owning Development: Creating Policy Norms in the IMF and the World Bank*. Cambridge ; New York: Cambridge University Press.

- Park, Yung Chul, and Shinji Takagi. 2012. 'Managing Capital Flows in an Economic Community: The Case of ASEAN Capital Account Liberalization'. Working Paper 378. ADBI Working Paper. Tokyo: Asian Development Bank Institute. <https://www.adb.org/sites/default/files/publication/156233/adbi-wp378.pdf>.
- Pauly, Louis W. 1997. *Who Elected the Bankers?* Ithaca: Cornell University Press.
- . 2008. 'The Institutional Legacy of Bretton Woods: IMF Surveillance, 1973-2007'. In *Orderly Change: International Monetary Relations since Bretton Woods*, edited by David M. Andrews, 189–210. Ithaca: Cornell University Press. <http://ebookcentral.proquest.com/lib/warw/detail.action?docID=3137953>.
- Pirie, Iain. 2016. 'Korea and the Global Economic Crisis'. *The Pacific Review* 29 (5): 671–92. <https://doi.org/10.1080/09512748.2015.1032337>.
- Poonpatpibul, Chaipat, Li Wenlong, Choi Jinho, Simon Liu Xinyi, and Tang Xinke. 2017. 'High Corporate Debt in China: Macro and Sectoral Risk Assessments'. 01/2017. ASEAN+3 Macroeconomic Research Office Staff Working Paper. Singapore: ASEAN+3 Macroeconomic Research Office. <http://www.amro-asia.org/wp-content/uploads/2017/12/High-Corporate-Debt-in-China-Macro-and-Sectoral-Risk-Assessments-re-submit.pdf>.
- Popke, E. Jeffrey. 1994. 'Recasting Geopolitics: The Discursive Scripting of the International Monetary Fund'. *Political Geography* 13 (3): 255–69. [https://doi.org/10.1016/0962-6298\(94\)90030-2](https://doi.org/10.1016/0962-6298(94)90030-2).
- Prasad, Eswar S. 2010. 'Financial Sector Regulation and Reforms in Emerging Markets: An Overview'. Working Paper 16428. National Bureau of Economic Research. <https://doi.org/10.3386/w16428>.
- Prince, Russell. 2017. 'Assuming Everything, Except Responsibility: On Blaming Economists for Neoliberalism'. In *Assembling Neoliberalism: Expertise,*



- Practices, Subjects*, edited by Vaughan Higgins and Wendy Larnier, 45–65. New York, NY: Palgrave Macmillan.
- Quiggin, John. 2012. *Zombie Economics: How Dead Ideas Still Walk among Us*. Pbk. ed. Princeton: Princeton University Press.
- Rapley, Tim. 2007. *Doing Conversation, Discourse and Document Analysis*. Sage Qualitative Research Kit 7. London ; Thousand Oaks, Calif: Sage.
- Ravenhill, John. 2002. 'A Three Bloc World? The New East Asian Regionalism'. *International Relations of the Asia-Pacific* 2 (2): 167–95. <https://doi.org/10.1093/irap/2.2.167>.
- Reis, Ricardo. 2018. 'Is Something Really Wrong with Macroeconomics?' *Oxford Review of Economic Policy* 34 (1–2): 132–55. <https://doi.org/10.1093/oxrep/grx053>.
- Reiss, Julian. 2013. *Philosophy of Economics: A Contemporary Introduction*. Routledge Contemporary Introductions to Philosophy. New York, NY: Routledge.
- Renn, Ortwin, Andreas Klinke, and Marjolein van Asselt. 2011. 'Coping with Complexity, Uncertainty and Ambiguity in Risk Governance: A Synthesis'. *AMBIO* 40 (2): 231–46. <https://doi.org/10.1007/s13280-010-0134-0>.
- Rethel, Lena. 2010. 'The New Financial Development Paradigm and Asian Bond Markets'. *New Political Economy* 15 (4): 493–517. <https://doi.org/10.1080/13563460903302667>.
- Riggirozzi, Pia. 2010. 'Region, Regionness, and Regionalism in Latin America: Towards a New Synthesis'. Working Paper 130. Latin American Trade Network Working Paper. Buenos Aires: FLASCO Argentina.
- Robison, Richard, and Kevin Hewison, eds. 2006. *East Asia and the Trials of Neo-Liberalism*. London: Routledge.

- Rodan, Garry. 1996. 'The Internationalization of Ideological Conflict: Asia's New Significance'. *The Pacific Review* 9 (3): 328–51. <https://doi.org/10.1080/09512749608719190>.
- Rodrik, Dani. 2009. 'A Plan B for Global Finance'. *The Economist*, 12 March 2009. <https://www.economist.com/finance-and-economics/2009/03/12/a-plan-b-for-global-finance>.
- Rogers, Chris. 2012. *The IMF and European Economies: Crisis and Conditionality*. International Political Economy Series. Basingstoke: Palgrave Macmillan. <https://0-link-springer-com.pugwash.lib.warwick.ac.uk/10.1057/9781137271273>.
- Roger, Scott, and Jan Vlcek. 2012. 'Macrofinancial Modeling At Central Banks : Recent Developments and Future Directions'. Working Paper 12/21. IMF Working Paper. Washington, D.C.: International Monetary Fund. <https://www.imf.org/en/Publications/WP/Issues/2016/12/31/Macrofinancial-Modeling-At-Central-Banks-Recent-Developments-and-Future-Directions-25663>.
- Rosenau, James N. 2004. 'Strong Demand, Huge Supply: Governance in an Emerging Epoch'. In *Multi-Level Governance*, edited by Ian Bache and Matthew V. Flinders, 31–48. Oxford ; New York: Oxford University Press.
- RSIS, and ISEAS. 2013. 'Vision Paper on the ASEAN Economic Community beyond 2015'. Singapore: S. Rajaratnam School of International Studies and Institute of Southeast Asian Studies.
- Sbordone, Argia M., Andrea Tambalotti, Krishna Rao, and Kieran Walsh. 2010. 'Policy Analysis Using DSGE Models: An Introduction'. *Federal Reserve Bank of New York Economic Policy Review* 16 (2): 23.
- Schmidt, Vivien A. 2010. *Reconciling Ideas and Institutions through Discursive Institutionalism*. Oxford University Press. <http://0-www.oxfordscholarship.com.pugwash.lib.warwick.ac.uk/view/10.1093/acprof:oso/9780199736430.001.0001/acprof-9780199736430-chapter-3>.

- Scotti, Chiara. 2013. 'Surprise and Uncertainty Indexes: Real-Time Aggregation of Real-Activity Macro Surprises'. Working Paper 1093. International Finance Discussion Papers. Washington, D.C.: Board of Governors of the Federal Reserve System.
- Seabrooke, Leonard. 2010. 'Bitter Pills to Swallow: Legitimacy Gaps and Social Recognition of the IMF Tax Policy Norm in East Asia'. In *Owning Development: Creating Policy Norms in the IMF and the World Bank*, edited by Susan Park and Antje Vetterlein, 137–60. New York: Cambridge University Press.
- Seabrooke, Leonard, and Duncan Wigan. 2016. 'Powering Ideas through Expertise: Professionals in Global Tax Battles'. *Journal of European Public Policy* 23 (3): 357–74. <https://doi.org/10.1080/13501763.2015.1115536>.
- Selden, Mark. 2012. 'Economic Nationalism and Regionalism in Contemporary East Asia'. In *Globalization and Economic Nationalism in Asia*, edited by Anthony P. D'Costa, 33–58. Oxford, New York: Oxford University Press.
- Sent, Esther-Mirjam. 2001. 'Sargent's Symmetry Saga: Ontological versus Technical Constraints'. In *The Economic World View: Studies in the Ontology of Economics*, edited by Uskali Mäki, 335–58. Cambridge: Cambridge University Press.
- Sheng. 2011. 'Transforming Finance'. In *Asia 2050: Realizing the Asian Century*, edited by Harinder Kohli, Ashok Sharma, and Anil Sood. New Delhi: Sage Publications. <https://doi.org/10.4135/9781446270349>.
- Singh, Ajit. 1995. "'Close" vs. "Strategic" Integration with the World Economy and the "Market Friendly Approach to Development" vs. an "Industrial Policy"'. MPRA Paper 53562. Munich: Munich University Library. <https://mpra.ub.uni-muenchen.de/53562/>.
- . 1998. "'Asian Capitalism" and the Financial Crisis'. MPRA Paper 24937. Munich: Munich University Library. <https://mpra.ub.uni-muenchen.de/24937/>.

- Siregar, Reza, and Akkharaphol Chabchitrchaidol. 2013. 'Enhancing the Effectiveness of CMIM and AMRO: Selected Immediate Challenges and Tasks'. Working Paper 403. ADBI Working Paper. Tokyo: Asian Development Bank Institute.  
<https://www.adb.org/publications/enhancing-effectiveness-cmim-and-amro-selected-immediate-challenges-and-tasks>.
- Sohn, Injoo. 2007. 'East Asia's Counterweight Strategy: Asian Financial Cooperation and Evolving International Monetary Order'. 44. G-24 Discussion Paper. Geneva, Switzerland: United Nations Conference on Trade and Development.
- . 2012. 'Toward Normative Fragmentation: An East Asian Financial Architecture in the Post-Global Crisis World'. *Review of International Political Economy* 19 (4): 586–608.  
<https://doi.org/10.1080/09692290.2011.613350>.
- Solow, Robert. 2010. 'Building a Science of Economics for the Real World'. Meeting document presented at the Hearing - House Committee on Science and Technology, Subcommittee on Investigations and Oversight, Washington, D.C., July 20.
- Stiglitz, Joseph E. 2017. 'Where Modern Macroeconomics Went Wrong'. Working Paper 23795. NBER Working Paper. Cambridge, MA: National Bureau of Economic Research.
- Stubbs, Richard. 2012. 'The East Asian Developmental State and the Great Recession: Evolving Contesting Coalitions'. In *East Asia and the Global Crisis*, edited by Shaun Breslin, 43–58. London ; New York: Routledge.
- Sugihara, Kaoru. 2003. 'Introduction: The Rise of East Asia in Regional and World Historical Perspective'. In *The Resurgence of East Asia: 500, 150 and 50 Year Perspectives*, edited by Giovanni Arrighi, Takeshi Hamashita, and Mark Selden, 1–16. Asia's Transformations. London ; New York: Routledge.

- Sutherland, Claire. 2009. 'Reconciling Nation and Region: Vietnamese Nation Building and Asean Regionalism'. *Political Studies* 57 (2): 316–36. <https://doi.org/10.1111/j.1467-9248.2008.00736.x>.
- Systemic Risk Centre. 2013a. 'Amplification Mechanisms | LSE Systemic Risk Centre'. 2013. <http://www.systemicrisk.ac.uk/amplification-mechanisms-0>.
- . 2013b. 'Policy Responses | LSE Systemic Risk Centre'. 2013. <http://www.systemicrisk.ac.uk/policy-responses>.
- . 2015. 'Systemic Risk: What Research Tells Us and What We Need to Find Out'. London: Systemic Risk Centre. [http://www.systemicrisk.ac.uk/sites/default/files/images/SRC\\_final%20July%202015.pdf](http://www.systemicrisk.ac.uk/sites/default/files/images/SRC_final%20July%202015.pdf).
- Takagi, Shinji. 2010. 'Regional Surveillance for East Asia: How Can It Be Designed to Complement Global Surveillance?' Working Paper 50. ADB Working Paper Series on Regional Economic Integration. Manila, Philippines: Asian Development Bank.
- Telò, Mario. 2012. 'Introduction'. In *State, Globalization and Multilateralism: The Challenges of Institutionalizing Regionalism*, edited by Mario Telò, 1–3. United Nations University Series on Regionalism, v. 5. Dordrecht; New York: Springer.
- Titelman, Daniel, Cecilia Vera, Pablo Carvallo, and Esteban Perez Caldentey. 2014. 'A Regional Reserve Fund for Latin America'. 112. CEPAL Review. Santiago de Chile: Economic Commission for Latin America and the Caribbean.
- The Economist. 2009a. 'Decoupling 2.0'. *The Economist*, 21 May 2009. <https://www.economist.com/leaders/2009/05/21/decoupling-20>.
- . 2009b. 'What Went Wrong with Economics'. *The Economist*, 16 July 2009. <https://www.economist.com/node/14031376>.

- . 2013. 'New Model Army'. *The Economist*, 19 January 2013.  
<https://www.economist.com/finance-and-economics/2013/01/19/new-model-army>.
- . 2016. 'Augmented Reality'. *The Economist*, 18 August 2016.  
<https://www.economist.com/finance-and-economics/2016/08/18/augmented-reality>.
- Turner, Stephen P. 2015. *The Politics of Expertise*. London: Routledge.
- Tyfield, David. 2014. 'Complexity, Knowledge Politics and the Remaking of Class: Response to Levins'. *International Critical Thought* 4 (2): 241–54.  
<https://doi.org/10.1080/21598282.2014.906813>.
- UNICEF, and World Bank. 2016. 'Ending Extreme Poverty: A Focus on Children'.  
[https://www.unicef.org/publications/index\\_92826.html](https://www.unicef.org/publications/index_92826.html).
- Viñals, José. 2013. 'Making Macroprudential Policy Work'. Speech presented at the Brookings Event, Washington, D.C., September 16.  
<https://www.imf.org/en/News/Articles/2015/09/28/04/53/sp091613>.
- Vines, David, and Samuel Wills. 2018. 'The Rebuilding Macroeconomic Theory Project: An Analytical Assessment'. *Oxford Review of Economic Policy* 34 (1–2): 1–42. <https://doi.org/10.1093/oxrep/grx062>.
- Vos, Ellen, and Michelle Everson, eds. 2009. *Uncertain Risks Regulated: Edited by Michelle Everson and Ellen Vos*. Law, Science and Society. London ; New York: Routledge-Cavendish.
- Wade, Robert. 1996. 'Japan, the World Bank, and the Art of Paradigm Maintenance: The East Asian Miracle in Political Perspective'. *New Left Review* I/217: 3–36.
- . 2004. *Governing the Market: Economic Theory and the Role of Government in East Asian Industrialization*. Princeton, N.J: Princeton University Press.

- Wade, Robert, and Frank Veneroso. 1998. 'The Asian Crisis: The High Debt Model versus the Wall Street-Treasury-IMF Complex'. *New Left Review* 1/228: 3–23.
- Wang, Xinling. 2017. 'Can China Fix Its Debt Woes?' *The Diplomat* (blog). 26 October 2017. <https://thediplomat.com/2017/10/can-china-fix-its-debt-woes/>.
- Wang, Zheng. 2012. 'Introduction'. In *Never Forget National Humiliation: Historical Memory in Chinese Politics and Foreign Relations*, i–vi. New York: Columbia University Press. <http://ebookcentral.proquest.com/lib/warw/detail.action?docID=909460>.
- Watanagase, Tarisa. 2012. 'Impact of Changes in the Global Financial Regulatory Landscape on Asian Emerging Markets'. Working Paper 391. ADBI Working Paper. Tokyo: Asian Development Bank Institute. <https://www.adb.org/sites/default/files/publication/156246/adbi-wp391.pdf>.
- Watson, Matthew. 2014. *Uneconomic Economics and the Crisis of the Model World / M. Watson / Palgrave Macmillan*. Basingstoke, Hampshire: Palgrave Macmillan. [//www.palgrave.com/gb/book/9781137385482](http://www.palgrave.com/gb/book/9781137385482).
- Weingart, Peter. 1999. 'Scientific Expertise and Political Accountability: Paradoxes of Science in Politics'. *Science and Public Policy* 26 (3): 151–61. <https://doi.org/10.3152/147154399781782437>.
- West, John. 2018. *Asian Century... on a Knife-Edge - A 360 Degree Analysis of Asia's Recent Economic Development*. Singapore: Palgrave Macmillan. [//www.palgrave.com/gp/book/9789811071812](http://www.palgrave.com/gp/book/9789811071812).
- Woo-Cumings, Meredith, ed. 1999. *The Developmental State*. Cornell Studies in Political Economy. Ithaca, N.Y. ; London: Cornell University Press.

- . 2005. 'Back to Basics : Ideology, Nationalism, and Asian Values in East Asia'. In *Economic Nationalism in a Globalizing World*, edited by Eric Helleiner and Andreas Pickel, 91–117. Cornell Studies in Political Economy. Ithaca, N.Y: Cornell University Press.
- World Bank. 1991. 'World Development Report 1991 : The Challenge of Development'. New York: Oxford University Press for the World Bank. <https://openknowledge.worldbank.org/handle/10986/5974>.
- . 1993. 'The East Asian Miracle: Economic Growth and Public Policy'. Washington, D.C.: World Bank.
- Zhang, Longmei, and Edda Zoli. 2014. 'Leaning against the Wind: Macprudential Policy in Asia'. IMF Working Paper No. 14/22. International Monetary Fund, Washington, D.C.
- Zhang, Tao. 2013. 'Statement by Mr. Tao Zhang, IMF Executive Director, at the Conclusion of the 2013 Article IV Consultation with People's Republic of China'. Washington, D.C.: International Monetary Fund. <https://www.imf.org/external/pubs/ft/scr/2013/cr13211.pdf>.
- Zhongxia, Jin, Ping Sun, and Jing Chen. 2017. 'Statement by Jin Zhongxia, Executive Director for China, Ping Sun, Alternate Executive Director for China, and Jing Chen, Senior Advisor to Executive Director'. 17/247. IMF Country Report. Washington, D.C.: International Monetary Fund. <https://www.imf.org/~media/Files/Publications/CR/2017/cr17247.aspx>.