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Globalization and the (Mis)Governance of Nations

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Abstract

We analyze whether or not the globalization of capital, 'disciplines' governments and improves governance. We demonstrate that globalization affects governance, by increasing a country's vulnerability to sudden capital flight. This increased threat of capital flight can discipline governments and improve governance and welfare by placing countries in a 'golden straitjacket'. However, globalization may also 'overdiscipline' governments – resulting in a perverse impact on governmental incentives that catalyzes (mis)governance. Accordingly, the paper suggests a novel (and qualified) role for capital controls. Finally, we provide some suggestive evidence consistent with the predictions from our theoretical framework.

1 Introduction

The last several decades have witnessed dramatic reductions in the cost of moving capital across countries. Moreover, the resulting globalization of capital has been accompanied by a transformation in the practice of policymaking and governance (Rodrik, 2011). In this paper we analyze the impact of this globalization of capital on the quality of a country's governance. We ask, does the threat of capital flight constrain and 'discipline' governments and improve governance? Or is the exacerbated threat of capital flight that accompanies globalization, a stick that goes too far resulting in (mis)governance? In analyzing this relationship between governance, institutional quality and globalization, our paper throws further light on aspects of the design of international financial architecture. In particular, should countries encourage the free flow of capital and information? Or do capital controls have a place in the policymaker's toolbox?

The relationship between the forces of globalization and governance has received considerable attention in recent years. On the one hand we have the view exemplified by Summers (2000), Obstfeld (1998) who argue that in a globalizing world where information is freely available and capital is mobile, governments are forced to get disciplined and governance is improved.[1] Indeed recent work by Kose, Prasad, Rogoff and Wei (2009) and Mishkin (2007) suggests that the main benefits from the globalization of capital flows are 'collateral' such as improved market discipline and good governance. In contrast, a much more skeptical view about globalization's impact on governance is held by Rodrik and Subramaniam (2009), Stiglitz (2010) and Krugman (1999). Indeed they argue that the globalization of capital flows may provide the wrong incentives to government and result in indiscipline and (mis)governance. These two sharply differing views on the incentive effects of globalization have been hard to reconcile. In part this is because the relationship between globalization and good governance is a complex one and the empirical evidence on this issue (such as there is) is mixed.[2] In this paper we provide both a conceptual framework that helps us think systematically about these diverging viewpoints and empirical evidence in support of the mechanism through which globalization affects governance.

The theoretical framework has two key features. First, we allow for a country's institutions of gover-

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[1]Obstfeld (1998) argues that "the main potential positive role of international capital markets is to discipline policymakers.". This view is exemplified in Thomas Friedman's (2000) book on globalization where he argues the international capital market puts countries in a "golden straitjacket" and constrains the worst excesses of governments and enacts policies that are socially optimal, in turn rewarding them with capital inflows.

[2]For instance, Tytell and Wei (2004) argue that despite its theoretical plausibility it is difficult to 'find robust and strong causal evidence'.

nance to be imperfect. A state's capacity to precommit and implement efficient policies may be incomplete (Besley and Persson, 2011). In particular, we build on Tirole (1994) and Dewatripont and Maskin (1995) to identify an inefficiency that we argue, lies at the heart of all decision making *within* government - an inability for governmental actors to precommit to enacting efficient policies. However, our framework also allows for another commitment problem - this time with respect to investors. In particular, we assume that investors are unable to precommit to retaining investment in the host country. In other words, in light of new information, investors may either keep their investment or engage in capital flight. We analyze the impact on governance of the globalization of capital in the context of these twin commitment problems.

Our framework demonstrates that decision making within government is often characterized by a *soft budget constraint*. The government-policymaker persists in backing projects (or businesses) that are often characterized by low effort, budget overruns and low productivity. In this context, the globalization of capital (driven by the lower costs of international capital mobility) can exacerbate the threat of capital flight. The paper demonstrates that the key relationship to be analyzed is how this increased threat of capital flight affects the incentive problem that plagues much of governmental decision making. On the one hand, we show that the exacerbated *threat* of capital flight may constrain the set of actions taken by the government. Indeed, in doing so, the globalization of capital may shackle governments in a 'golden straitjacket', and have a positive "incentive" effect on decision making within government. This may suggest that the standard view about the disciplining role of globalization is indeed correct. However, our analysis suggests a more nuanced view is in order. It is not merely the increased threat of capital flight that accompanies the globalization of capital that is of relevance. Rather we argue, that the impact of globalization on incentives within government, depends on the structure of the country's economy. If the country has strong economic fundamentals (for e.g. due to a structurally diversified export sector) and is less sensitive to random shocks in the global economy, then globalization is likely to have a positive incentive effect. The globalization of capital works as a 'discipline' device so long as capital flight is mainly triggered off by actions within government and not due to the volatility of the global economy. In contrast, if random changes in the external environment have the potential to trigger capital flight, then this may have perverse effects. In this case, the threat of capital flight *overdisciplines* governments, resulting in a negative "incentive" effect and mis-governance. This is a striking implication since it suggests that the impact of globalization on governance can go either way.

We further analyze the impact on national welfare of this globalization of capital. We begin by characterizing the second-best welfare benchmark where there is no inefficiency in government decision making. Globalization lowers the cost of capital mobility, making capital flight relatively easy. Therefore, this globalization makes a country vulnerable to capital flight, especially when the economy is not doing well. We show that this inability to "capture" foreign investment at high levels of global integration, always adversely affects national welfare. We then go on to describe the welfare impact of globalization, relative to this second-best welfare benchmark. We show that the impact of globalization on welfare is through the "incentive" effect of good governance. However, this incentive effect depends on the structure of the country's economy. Globalization is likely to improve welfare if a country is less vulnerable to random shocks either because it is relatively developed, or has a diversified export sector. In other words, if this globalization makes the country vulnerable to the threat of capital flight mainly when there is inefficiency in government, then the incentive effect improves welfare. In contrast, this incentive effect has a negative impact on welfare, if the country has weak fundamentals - (for e.g., specializes in exporting mining or primary goods that suffer from volatility) or faces a weak and volatile global economy. In these situations, globalization lowers welfare by having a negative incentive effect on governance - due to the country being made vulnerable to the threat of unwarranted capital flight - i.e. independent of the actions of policymakers within government.

In a globalized world, governments are vulnerable to exogenous and sudden shifts in investor sentiment. A crisis in another country can make a country directly increase uncertainty in financial markets. Such an increase in global uncertainty has an unambiguously negative impact on the quality of bureaucratic governance. We further show that this adverse impact on governance is much higher in countries with low bureaucratic state-capacity (see Besley and Persson, 2011). Furthermore, countries with high state capacity are much less likely to use capital controls as a tool to mitigate the adverse impact on bureaucratic incentives. We use these theoretical predictions to guide our empirical analysis. In particular, we use the Mexican currency crisis of 1994 as a natural experiment which results in an increase in uncertainty in international financial markets. A prediction of our theoretical framework is that the impact of this greater uncertainty on governance should be highest for those countries that are perceived to be 'similar' to Mexico *and* have relatively weak institutional 'state capacity'. Indeed, we find suggestive evidence consistent with this prediction.

The issue of the appropriateness of capital controls has been central to the debate on the design

of international financial architecture. The position of the IMF for most of the past two decades has been quite clear - a country would only be able to reap the gains of financial globalization, if capital controls were reduced or eliminated.[3] This view has been echoed by economists such as Edwards (1999), Dornbusch (1998) among others. In contrast, Rodrik (1998), Bhagwati (1998), Eichengreen (1999) are much more sympathetic to the idea of imposing restrictions on capital mobility. Indeed recently, the IMF Staff Position Paper (2010) also suggests a turnaround in that it argues that under some conditions capital controls can well be part of a policymaker's toolkit. This picture is further muddied by the fact that the empirical evidence does not provide us with a clean answer. We argue that the absence of consensus (both at a theoretical and empirical level) on the usefulness of capital controls is understandable as arguments made by both the proponents as well as critics of the use of capital controls may be of relevance. Two factors are important - the quality of a country's institutional state capacity as well as the overall uncertainty in the external economic environment. Arguments for controls are strongest perhaps when the country's institutional state capacity are relatively weak and the country is vulnerable to capital flight arising from an uncertain and volatile global economic environment. We should also emphasize that our paper has identified a very distinct argument for the qualified use (and abolition) of capital controls - namely how the threat of capital flight may adversely effect (or improve) the incentives for good governance.

Related Literature: There is a small but growing literature that examines the link between governance and the globalization of capital. In the context of fiscal federalism, Qian and Roland (1996) use an incomplete contractual structure to show that governments have a tendency to bail out failing state enterprises. In this context they show that federalism by encouraging competition may discipline regional governments by punishing corrupt governments with capital flight. Cai and Treisman (2005) examine how the increased competition to attract international capital that globalization entails, may discipline governments. However, they argue that this 'disciplining' effect is driven by the assumption of countries having different resource endowments, be it capital, human capital or infrastructure. In contrast, we

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[3]As late as 1997, the IMF Interim Committee argued that "the liberalization of capital flows is an essential element of an efficient international monetary system in this age of globalization". This is quoted from Rodrik (2011) who has a fascinating discussion about the debate within the IMF and the larger historical context in which it takes place. Indeed Rodrik (1999) quotes the IMF's World Economic Outlook from October 98 to argue that "[T]he introduction by Malaysia in early September of exchange and capital controls may also turn out to be an important setback not only to that country's recovery and potentially to its future development, but also to other emerging market economies that have suffered from heightened investor fears of similar actions elsewhere".

argue that the threat of capital flight may have a very different impact on governance even if countries have the same resource endowments, productivity and state capacity. We show that small differences in the nature of the uncertainty in a country's economic environment alone can result in lower costs of international capital mobility.

Ju and Wei (2011) emphasize the two way relationship between international capital flows and the strength of domestic institutions. However, their main focus is on the implications of globalization on a complementary set of institutions - corporate governance and the financial system rather than inefficiencies to decision making within government and the bureaucracy. Tressel and Verdier (2007) argue that the liberalization of capital is often an endogenous decision that has been carried out with the collusion of foreign banks and investors - often to the detriment of the governance of the domestic financial system. Both the scope and notion of globalization and governance is quite different from what we have in this paper. Besley and Smart (2002) show that the impact of greater competition for mobile capital depends on the 'type' of politician-policymaker in office. Chang (2011) examines how the globalization of short run capital mobility often interacts with elections and magnifies the impact of exogenous shocks. While our paper is more about decision making within government, we should note that political economy considerations can exacerbate the magnitude of inefficiency in decision making within government. Mukand (2006) uses a signaling model, where a policymaker's choice of policy to show that governments have an incentive to play the 'confidence game' and enact inefficient policies in order to attract mobile capital. Similarly, Bartolini and Drazen (1997) also use a signaling model to explore the implications of capital account liberalization as an indicator of future policies.

The rest of the paper is organized as follows. We describe the model in Section 2 and analyze the equilibrium in Section 3. Welfare analysis and other implications of the model are discussed in Section 4. Section 5 outlines empirical evidence supporting the model and Section 6 concludes.

2   Description of the Model

Before we describe the model in detail, we begin by describing the key features of our framework.

(i) There exists a symbiotic relationship between the government and foreign investors. The government supplies a public good that augments the returns to foreign investment. In turn, foreign capital by employing domestic factors, enhances national welfare.

(ii) We distinguish between the policymaker-government and the bureaucrat or public sector (or banking

sector) manager, with the manager-bureaucrat being in charge of actual implementation of the public project. An incomplete contractual structure ensures that the government cannot commit the bureaucrat to choose the efficient action. The productivity of this public project determines the private returns to the export sector.

(iii) We consider a small open economy, where the export sector produces a good that is sold on the world market. We are interested in capturing the resilience of the country's economy to global shocks in a parsimonious way. Accordingly, we focus on the volatility of earnings of the export sector. For instance, if the economy specializes in exporting mining or primary products, then its export revenue is likely to be vulnerable to volatility. In contrast, if the economy is strong and well-diversified, then shocks to good prices in the world economy have much smaller impacts on the volatility of the revenue of this export sector. Therefore, countries with strong fundamentals are assumed to have well diversified export sectors and are less sensitive to random shocks to the global economy. We should emphasize that we choose this particular interpretation merely for the expositional convenience of our formal model.

(iv) A representative foreign investor invests capital in a private project in the export sector of the host country which require two stages to set up. At the second stage, the investor has to decide whether to withdraw capital or whether to rollover the initial investment made. The investor observes the return from its investment in the export sector prior to the rollover decision. The observed return depends on both bureaucrat effort and global shocks. Globalization decreases the cost of withdrawing capital at the rollover stage to the foreign investor.

GOVERNANCE: THE GOVERNMENT AND THE BUREAUCRAT - The policymaker-government maximizes the return to domestic factors. Therefore, it attempts to attract foreign investment in the export sector, which through its employment of domestic factors, boosts national income.[4] The government can choose to initiate a public infrastructure project that affects the returns to foreign investment. The infrastructure can be of varying quality - high or low. Completion of the public project requires investment at two points in time. There is an initial startup cost C_1 and a project completion cost C_c. Therefore the government's welfare is a function of total output net of all project completion costs i.e. $W_Y = \alpha Y - (C_1 + C_c)$ where Y is additional revenue generated by foreign investment in the export sector economy and α is the share

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[4]By assumption we rule out outright expropriation to avoid complicating our analysis with sovereign debt issues. Not only are these issues well-understood (Eaton and Fernandez, 1995), but also outright expropriation is rarely observed. However, in our analysis, a bad realization of the public good is like an implicit tax/expropriation.

of that revenue that accrues to the government as public revenue.

The government delegates to a bureaucrat, the actual implementation of the public infrastructure project that determines the returns to investment.[5] The bureaucrat's effort choice $e \in [0, 1]$ is unobservable. The disutility from effort $\psi(e)$ is increasing (higher effort is costly) and convex in e. For simplicity of exposition, we assume that the bureaucrat's choice of effort e results in infrastructure of productivity e.

In addition to the disutility of effort, the bureaucrat gets a private, non-appropriable utility δ from *completion* of the public project. The idea is that the bureaucrat gets some benefit from the continuation of the project and the government cannot complete the project without the bureaucrat. As Dewatripont and Maskin(1995) point out, this gain can be in terms of any private, non-appropriable payoff including additional perks or any human capital gain from increased use of the technology. Hence the bureaucrat's utility function is given by: $U_B = \delta - \psi(e)$ where $\delta > \psi(1) > 0$ if the public project is completed and zero otherwise and $\psi(e)$ is a (weakly) convex function of effort with $\lim_{e \to 0} \psi'(e) = 0$.[6]

INVESTMENT, CAPITAL FLIGHT AND GLOBALIZATION: Investment takes place in a single private firm in the export sector that requires an initial capital investment (normalized to one unit) which has to last two periods before yielding output and a return. Output is a function of the initial investment made as well as the productivity of the public good. This opportunity to invest is given to a group of identical risk neutral investors. Without loss of generality, we assume that decision-making within the group is delegated to an individual who maximizes aggregate group profits.[7] This group of investors can raise the initial capital investment at a per unit cost R. While the investment is for two periods, investors do receive interim information (the revenue generated by the project), that tells them whether to liquidate and withdraw their capital from the country, or to retain it in the project.

The initial unit of capital invested in the export sector yields Y units of revenue two periods later, where $Y = e\theta$. We take θ to be an exogenous shock distributed on $[0, 1]$ that affects according to the pdf $f(\theta)$. This variable can be interpreted as a shock to global prices of the export sector good that may arise

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[5]It is useful to keep in mind that in our analysis a low productivity outcome of the public good, is isomorphic to the case of a cost overrun in the provision of the public good, where the cost overrun and the associated deficit results in a higher marginal tax on foreign investment.

[6]The incomplete contractual structure is based on Dewatripont and Maskin(1995) and Tirole(1994).

[7]Our assumptions imply that investors coordinate their withdrawal decisions. Therefore, we do not consider issues of investor coordination failure because we want to focus on a different, if complementary, set of reasons why a country might want to impose capital controls.

out of unexpected changes in demand or supply in the global economy. Therefore, if the investment in the export sector project lasts the entire two periods, the aggregate payoff to the investors is $(1 - \alpha) Y - R$. In contrast, if the investment is liquidated early, it will be taken out of the country yielding a (normalized) return of 1 per unit of capital initially invested. In this case if the investment is terminated early (i.e. in one period), and the capital is withdrawn and invested abroad, the aggregate group payoff is $1 - c_w - R$ where $c_w \geq 0$ is the (additional) cost of moving capital across international borders when the project is terminated early, essentially the cost of short-term movements of capital across national boundaries.

Given enough time, capital is always movable across borders - whether or not there are explicit restrictions on capital flows. However, what is truly distinctive of the nature of capital flows over the past few decades has been the dramatic reductions in the barriers to the movement of capital across borders, especially in the short run. This has resulted in the globalization of capital and the possibility of sudden capital flight. Accordingly, we focus on the globalization arising out of a reduction in the immediate short-run cost of moving capital across international borders. This reduction in the cost c_w, can be driven by a combination of technological and policy related factors. For example, a policy change that results in a reduction in capital controls reduces barriers mainly to short-run mobility of capital. Indeed, given our focus on the impact of capital flight on 'discipline', our analysis focuses on the impact of changes in capital controls.

Alternatively, these changes in capital controls may work in conjuction with a combination of technological (or institutional) factors that may also affect the cost of short term capital movements. These factors would include any and all factors that affect the degree of financial integration of a country with the global economy that can in effect be treated as a parameter - from the overall availability of information, the level of development or the geographical proximity to major financial centers and so on. For simplicity, in much of what follows we interpret an increase in globalization as a reduction in c_w arising out of technological changes. However, in Section 4 we will also explicitly consider the role of capital controls, when we take c_w to be a choice variable of the government-policymaker. Neither formulation changes in a qualitative way the results that we highlight.

INFORMATION AND THE TIMING OF DECISIONS: Since investors care about the expected returns on their investment, any information on the productivity of the public infrastructure project would be at a premium. We assume that if there is an initial investment in the project, before deciding whether or not to rollover the project, each investor observes the expected returns to the private investment project (i.e.

the export sector) Y but does not observe either e or θ separately.

The timing of the game is as follows:

1. The government makes the decision of whether to initiate the public infrastructure project by incurring the initial setup cost C_1. At this stage the government also (when it is a parameter) observes the value of c_w. Similarly, if it is interpreted as a choice variable, then the policymaker chooses c_w (as in capital controls).

2. The foreign investor group chooses whether or not to invest one unit of capital in the investment project in the export sector of the host country- that takes two periods to mature.

3. The bureaucrat then makes an (unobservable) effort choice e that determines the productivity of the public project and hence, revenue from the investment project.

4. In the next stage, investors observe the overall returns and profitability of investment in the export sector project Y and the representative investor decides whether or not to withdraw or retain the investment in the country.

5. The government chooses whether it wants to abandon or complete the public project by paying the completion cost C_c after observes the productivity of the public project as well as the returns to the private export sector.

6. If the project is completed, the public infrastructure productivity is realized. This determines private sector output and the returns to investment for foreign investors.

In the following sections, we solve the above game of incomplete information backwards.

We will solve the model over the following two sections. In section 3, we will characterize the link between the threat of capital withdrawal and bureaucrat's effort choice. This section is, thus, devoted to the study of the impact of globalization (viewed in terms of costs of withdrawing capital) on the disciplining of nations. In section 4, we will characterize decisions that determine whether the project is initiated and not prematurely liquidated. The focus in this section will be on examining the consequences of changes in the cost of suddenly withdrawing capital from a country on its national welfare.

3 Governance and Capital Flight: The Framework

In this section we solve for our equilibrium and highlight aspects that are of interest. For the moment, we assume that the government lacks state-capacity - in that it is *unable* to commit the bureaucrat to choose the first-best level of effort.

3.1 Capital Flight and the Soft Budget Constraint

Governments often face a dilemma with regard to the financing of projects - be it public sector cost overruns or financial bail outs for the banking sector. Indeed the inability to cut-off funding of projects that are doing badly has long term adverse incentive effects. We analyze the conditions under which such inefficiency may arise in our framework. First, note that if the revenue from the export sector project is Y, the government will complete the public sector project if and only if the payoff from doing so exceeds the project completion cost, i.e. if

$$\alpha Y \geq C_c.$$

Recollect that the share of total revenue that enters the government's payoff (e.g. weight on the domestic sector) is given by α. Accordingly, if $C_c \approx 0$, the government can never commit not to complete the project. We show that this possibility, when the cost of project completion is low, results in a *soft budget constraint*[8].

Next, we turn to the decision of the representative investor to keep the money within the country or to withdraw it. In our model, the representative investor cannot credibly precommit to keep money within the country. If the economic environment deteriorates, the investor will pull investment out of the country and there will be capital flight. Whether or not the representative investor actually engaged in capital flight depends on whether the productivity of the investment project is high enough. We now calculate the critical threshold value such that there is capital flight if productivity is below this threshold and not otherwise.

At the time when investors have to make the decision of whether to retain or withdraw their initial investment in the private sector export project R, this cost is 'sunk' and does not enter the private investor calculus. This implies that the representative investor will withdraw his capital iff the continuation value of capital flight, $1 - c_w$, is greater than the expected continuation value of retaining the investment in the

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[8]Kornai(1980) was the first to observe the soft budget constraint in the context of socialist and transition economies. Public sector enterprises as well as the banking sector(Cho & Kim(1995) and Borensztein & Lee(1998)) have been plagued by the soft budget constraint. In this paper we have chosen a model where poor incentives for a bureaucrat generates inefficiencies. This is because of two reasons - first, it is the simplest way to emphasize the underlying incentive problem without detracting from the focus on information and second, because we can easily re-interpret the model as being applicable to a variety of economic scenarios. These include the case of a public sector plagued with cost overruns and fiscal deficits arising out of an incomplete contractual structure with a public sector manager or inefficiencies amongst various branches of government (see Alesina and Perotti (1996)). Furthermore, (with modifications) the bureaucrat can be thought of as the manager of a banking sector plagued by a soft budget constraint, which results in bad loans.

project, $(1 - \alpha) Y$. In other words, on observing that the returns are Y, the investor will *not* engage in capital flight and keep the investment in the country if and only if:

$$(1 - \alpha) Y \geq 1 - c_w$$

or equivalently,

$$Y \geq \overline{Y} = \frac{1 - c_w}{1 - \alpha}. \tag{1}$$

Therefore, the initial unit of investment will be retained in the country iff the productivity of the public sector project is higher than some threshold value - we label it the investor's *capital flight threshold*.[9] Further, observe that the investor's capital flight threshold is itself decreasing in the cost of withdrawing capital c_w. In other words the higher is the short-run cost of withdrawing the capital c_w (lower $\overline{Y}$), the more likely it is that foreign investors will roll over the investment and retain it in the country. At one extreme when $c_w > 1$, the representative investor never withdraws her investment so that the threat of capital flight is an empty one. At the other extreme if the cost of withdrawing capital is very low so that $1 - c_w > 1 - \alpha$, equivalently $\alpha > c_w$, the investor will always withdraw: in this case, capital flight will occur with probability one.

3.2 (Mis)Governance, Capital Flight and Bureaucratic Effort

We now examine how the threat of capital flight affects the quality of governance (i.e. bureaucrat effort).

In particular, for any given effort level e, the bureaucrat will compute the probability that the government (suffering from a soft budget) will continue with the infrastructure project. This probability is given by,

$$\Pr(e\theta \geq \overline{Y}) = \Pr(\theta \geq \frac{\overline{Y}}{e}) = 1 - F(\frac{\overline{Y}}{e})$$

i.e. for any given level of effort e the probability that the productivity of the investment project will exceed the capital flight threshold $\overline{Y}$. Therefore, the bureaucrat will choose e to solve

$$\max_{e \in [0,1]} B(e, \overline{Y}) = \left[1 - F(\frac{\overline{Y}}{e}) \right] \delta - \psi(e). \tag{2}$$

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[9]Although in the remainder of the paper we focus on the case where $C_c \approx 0$, it is instructive, to briefly consider the derivation of the capital flight threshold where C_c can be arbitrarily different from zero. Clearly, the policy-maker will only complete the project if $Y \geq \widetilde{Y} = \frac{C_c}{\alpha}$ which, in turn implies that the investor will not engage in capital flight iff $Y \geq \max \left\{ \overline{Y}, \widetilde{Y} \right\}$. Our model studies the case where the threat of capital flight is a substitute for the soft budget constraint i.e. $\overline{Y} \geq \widetilde{Y} \Leftrightarrow \frac{(1 - c_w)\alpha}{(1 - \alpha)} \geq C_c$ which requires that either C_c is low enough, an assumption we maintain throughout the paper.

The solution to the bureaucrat's maximization problem stated above yields a direct relation between bureaucrat effort e (via its impact on the productivity of the public infrastructure project) and the investor's capital flight threshold $\overline{Y}$ (and c_w). This relationship between the bureaucrat's effort e and the investor's capital flight threshold $\overline{Y}$ is key to our analysis, and we summarize it in the proposition below.

Proposition 1. *Under the assumption that $-\frac{\theta f'(\theta)}{f(\theta)} < 2$ for all $\theta \in [0,1]$ and $\lim_{\theta \to 1} f(\theta) > 0$, the bureaucrat's expected payoff $B(e, \overline{Y})$ is concave in e and we have the following:*

(i) the bureaucrat's effort e^* is non-decreasing (increasing at an interior solution) in the investor's capital flight threshold $\overline{Y}$ (i.e. there is complementarity between e^* and $\overline{Y}$) if $-\frac{\theta f'(\theta)}{f(\theta)} < 1$.

(ii) bureaucrat's effort e^* is non-increasing (decreasing at an interior solution) in the investor's capital flight threshold $\overline{Y}$ (i.e. there is substitutability between e^* and $\overline{Y}$) if $-\frac{\frac{\overline{Y}}{e^*} f'(\frac{\overline{Y}}{e^*})}{f(\frac{\overline{Y}}{e^*})} > 1$.

Proof: See Appendix.

The above proposition describes the key relationship of the paper - namely, the impact of an increased likelihood of capital flight (a higher $\bar{Y}$) on the quality of governance (e^*) in the host country. Differences in the ability, and willingness of foreign investors to liquidate and withdraw capital from the country can have very different effects on the bureaucrat's incentives.

The proposition above outlines two possibilities - either the threat of capital flight helps discipline the bureaucrat and improve governance (Proposition 1(i)) or it may have an adverse impact on the quality of governance and even worsen matters (Proposition 1(ii)).[10] We discuss each of these scenarios below:

(a) *Capital Flight, Discipline and Good Governance*: Governance was poor due to the inability of the policymaker to credibly threaten the bureaucrat. The bureaucrat put in low effort because he was aware that any threat by the policymaker to not complete the project was an empty one. However, what the above proposition sketches out is that the threat of capital flight helps resolve this inefficiency. This is because if the investor can withdraw money relatively easily then the bureaucrat will be unable to earn the rents from the continuation of the public project. Accordingly, this threat could help resolve the inefficiency in governance. However, the proposition emphasizes an important caveat. In particular, it specifies that the threat of capital flight is effective as a discipline device so long as the probability of capital flight is sensitive to changes in effort e or equivalently, investor beliefs are not too sensitive to small changes in the structural environment, θ. In other words, changes in the probability distribution over the

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[10]For simplicity, in the discussion that follows, we assume that bureaucrat is at an interior solution.

productivity of the public good should be driven by the bureaucrat's effort and not be overwhelmed by small changes in the external economic environment that are unrelated to bureaucrat effort.

(b) *Capital Flight, (Over)Discipline and Inefficient Governance:* A striking implication of the above proposition is that the threat of capital flight may have a *negative* impact on the bureaucrat's incentives. For the threat of capital flight to be effective as an incentive device, it should be triggered off by low effort on the part of the bureaucrat.

In contrast, if the probability of capital flight isn't sensitive to changes in effort e (or equivalently, beliefs over θ are sensitive to small changes in θ), then this (over)discipline worsens governance. In other words, incentives will be adversely effected if capital flight that punishes a country is unwarranted – in that it gets triggered off despite a bureaucrat putting in high effort, due to changes in the external environment (i.e. θ). So the sensitivity of governance to a country's economic environment clearly depends on the structure of its economy. We can capture this relationship in several ways, for example by examining the relationship between governance (i.e. e) and the structure of the export sector (as summarized in the nature of its density function $f(\theta)$). Alternatively, we can examine the impact of a global financial or currency crisis in directly exacerbating uncertainty. Given its central role in our analysis, we examine this relationship between governance and various channels through which globalization may affect it next.

3.2.1 Globalization and Governance: Economic Fundamentals and State Capacity

Here we illustrate aspects of Proposition 1, by examining various channels through which globalization affects governance. In our framework, the global economy has an impact on the incentives for good governance by affecting the volatility of the overall economic environment. For instance, the global economy can affect economic volatility through its impact on a country's revenue, foreign investment or capital flight. However, the severity and nature of this impact is going to be a function of the structure of the economy as well as the bureaucratic state capacity of its government. We examine these themes below.

(i) Economic Structure, the Export Sector and Goverance: We are interested in a simple way to capture an economy that has strong economic fundamentals in that it is less vulnerable to shocks from the global economy. Accordingly, in what follows we use a simple channel to examine the relationship between governance and the volatility of a country's economic environment - by focusing on the structure of its export sector.

In our framework, the global economy injects uncertainty on an investor's decision making, through its impact on the revenue stream of the country's export sector. For instance, if a country is relatively poor and exports primary products (mining or agricultural goods), then volatility in these commodity prices can have a large impact. In contrast, as a country develops and becomes more structurally diversified, so does its export sector (Imbs and Wacziarg(2003), Rodrik(2007)). This diversification and movement into less volatile commodities, results in an export sector that is less subject to overall volatility, even if individual products remain subject to idiosyncratic shocks. These structural characteristics are important, because they restrict the shape the underlying density function $f(\theta)$ and therefore, the ratio $-\frac{\theta f'(\theta)}{f(\theta)}$. As the above proposition points out, whether the relationship between effort e^* and $\overline{Y}$ is one of a substitute or a complement depends on $-\frac{\theta f'(\theta)}{f(\theta)}$. Accordingly, we may be interested in how the underlying density function effects this key relationship.

For instance, consider the truncated exponential restricted to $[0,1]$. Observe that $-\frac{\theta f'(\theta)}{f(\theta)} = \lambda\theta$ where $\lambda > 0$ and $\frac{1}{\lambda}$ is the ratio of mean to variance of the (unrestricted) exponential distribution. Accordingly, it follows that a country with a structurally diversified export sector will have a λ that is sufficiently small. In other words, if $\lambda \leq 1 \Leftrightarrow \frac{1}{\lambda} \geq 1$ then $-\frac{\theta f'(\theta)}{f(\theta)} \leq 1$ while if $\lambda > 1 \Leftrightarrow \frac{1}{\lambda} < 1$ then $-\frac{\theta f'(\theta)}{f(\theta)} > 1$ over non-null sets of θ. In the Appendix (Example 1), we show that there exists constants $0 < k_1 < k_2$ such that if $\frac{1}{\lambda} < k_1$, bureaucrat effort is increasing in c_w while if $\frac{1}{\lambda} > k_2$ bureaucrat effort is decreasing in c_w.

REMARK 1: *If shocks to the revenue from a country's export sector is described by a (truncated) exponential distribution, then so long as the ratio of the average value of exports to their variance are (i) high enough, the bureaucrat's effort will be decreasing in c_w, i.e. the threat of capital flight will discipline the bureaucrat and lead to good governance, (ii) low enough, the bureaucrat's effort will be increasing in c_w, i.e. the threat of capital flight will overdiscipline the bureaucrat and lead to inefficient governance.*

Indeed, in general we can show that outside of some special cases such as the uniform distribution, the parameter $-\frac{\theta f'(\theta)}{f(\theta)}$, and hence the elasticity of beliefs over θ, can take on very different values.[11]

If $-\frac{\theta f'(\theta)}{f(\theta)} > 2$ then the bureaucrat's expected payoff $B(e, \overline{Y})$ may be convex. Indeed in this situation, we can expect that the bureaucrat's effort to change discontinuously in $\overline{Y}$ and hence increase discontinuously in c_w. If the shocks to the revenue from a country's export sector is described by a (truncated) exponential distribution, then so long as the ratio of the average value of exports to their variance is very

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[11]For example, when $f(.)$ is the normal distribution (with mean μ and variance σ^2) restricted to $[0,1]$, by computation note that $-\frac{\theta f'(\theta)}{f(\theta)} = \frac{\theta(\theta-\mu)}{2\sigma^2}$ so that if $\mu > 1$, it follows that $-\frac{\theta f'(\theta)}{f(\theta)} \leq 1$ while if $\mu < 1$, there exists $K > 0$ such that if $\sigma^2 \geq K$, $-\frac{\theta f'(\theta)}{f(\theta)} > 1$ over non-null sets of θ.

low the bureaucrat's objective function will be convex in effort and will discontinuously jump up as c_w is increased. We elaborate on this in an example (Example 2) in the Appendix.

(ii) Globalization, Uncertainty and Governance: Here we examine the impact on bureaucrat effort when there is greater uncertainty about the external environment θ. In a world where there is some degree of financial globalization, a banking or financial crisis or currency crisis elsewhere in the world, can make international investors nervous and make country vulnerable to capital flight - if some investors engage in short-run withdrawal of money. For instance, while the Mexican financial crisis of 1994 exacerbated uncertainty in the global economy, it did so especially in Latin America - labeled the 'Tequila' effect. To model such a scenario, assume that beliefs over θ are described by two possible probability density functions $f_1(.)$ and $f_2(.)$ which satisfy the monotone likelihood ratio property i.e. $\frac{f_1(\theta)}{f_2(\theta)}$ is increasing in θ. In other words, the probability density functions $f_2(.)$ corresponds to a more adverse external environment ("bad news") relative to the probability density function $f_1(.)$ ("good news"). Let $B_i(e, \overline{Y}) = \left[1 - F_i(\frac{\overline{Y}}{e})\right]\delta - \psi(e)$, where $F_i(.)$ is the corresponding cumulative density function where $i = 1, 2$. The relationship between the bureaucrat's effort e and the beliefs over θ is summarized in the proposition below.

Proposition 2. *There is an adverse impact on the quality of governance, when there is greater uncertainty about the external environment, i.e. bureaucratic performance e^* is lower when beliefs over θ are described by $f_2(.)$ rather than $f_1(.)$, when $f_1(.)$ and $f_2(.)$ satisfy the monotone likelihood ratio property.*

Proof: See Appendix.

The above proposition highlights the key mechanism underlying the main results of the paper: greater uncertainty over θ unambiguously lowers the quality of governance by worsening the bureaucrat's incentives. The proposition above shows that with greater uncertainty over θ the probability of capital flight becomes *less* sensitive to changes in effort e so that, unambiguously, the quality of governance declines. In this case, even for a fixed level of c_w, the probability distribution over the productivity of the investment project is relatively more responsive to chance variations in the external environment rather than to changes in the bureaucrat's effort. This proposition also suggests an empirical test of the key mechanism of the paper. We describe this in Section 5 below.

Proposition 2 has a clear implication: when there is greater uncertainty in the global economy, the push towards globalization (for e.g. a policy of reducing capital controls) will stop or slow down during this period, because of the negative impact this greater global uncertainty has on the quality of governance.

(iii) Globalization, State Capacity and Governance: A country's state capacity is the ability of the government policymaker to implement a range of policies (see Besley and Persson, 2011). Here we outline a simple framework that helps us analyze aspects of country's *bureaucratic* state capacity.

Countries differ in the quality of their governance on a number of dimensions. However, a key aspect is a government's ability to implement policies - the administrative competence of the bureaucracy. In particular, the state capacity of a bureaucracy refers to the ability of the policymaker-government to ensure that its officials and bureaucrats are able to administratively execute the policies that have been legislated. In other words contracting problems between the policymaker and the bureaucrat are likely to have been resolved through some combination of explicit and implicit incentives.

When bureaucrat effort is contractible, the government will choose e subject to the participation constraint:

$$\delta - \psi(e) \geq 0.$$

As national welfare is strictly increasing in bureaucrat effort, in any solution to policy-maker's maximization problem, the bureaucrat's participation constraint will bind. It follows that the maximum level of effort consistent with the bureaucrat's participation constraint is $e_{max} = \psi^{-1}(\delta)$. Accordingly, we assume that a country with bureaucrat state capacity γ as a situation where the policy-maker is able to commit the bureaucrat to $e_{\max}$ with probability γ, where $\gamma \in [0, 1]$. Specifically, if the policy-maker observes an effort level different from $e_{\max}$, he is able to fire the bureaucrat with probability γ. Of course, we should expect most countries to have less than perfect bureaucrat state-capacity.

In our analysis so far, we have assumed implicitly that there is *no* bureaucrat state-capacity, i.e. $\gamma = 0$. However, in order to study the implications of our framework for empirical analysis, we revisit this assumption here.

The following proposition states the link between c_w, γ and bureaucrat effort:

Proposition 3. *Under the assumption that* $-\frac{\theta f'(\theta)}{f(\theta)} < 1$ *for all* $\theta \in [0, 1]$, *we have the following:*

(i) an increase in state capacity γ and greater globalization (lower c_w) are both substitutes of each other and help achieve good governance

(ii) for a fixed degree of globalization c_w, the bureaucrat effort choice is increasing in state capacity γ.

Proof: See Appendix.

The above proposition again highlights the key mechanism underlying the main results of the paper: greater state capacity unambiguously lowers the reliance of the policy-maker on the threat of capital

flight to maintain a high quality of governance.

The above proposition implies that for a given level of globalization (as captured by c_w), greater state capacity improves the overall quality of governance. As with Proposition 2, this proposition also suggests a direct empirical test of the key mechanism through which globalization affects governance studied in this paper. We describe this in Section 5 below.

4 Governance and Globalization: Equilibrium and Welfare Analysis

We now complete our analysis of the equilibrium to the game and sketch out the implications of globalization for the policymaker's welfare. Observe that this being a sequential game, in what follows we analyze the equilibrium backwards. We have already described the policymaker's project completion decision, the foreign investor's capital flight decision as well as the bureaucrat's effort decision. However, for a complete analysis we need to further examine the conditions under which the government launches the public infrastructure project and foreign investors invest capital into the investment project in the first place. We now describe and analyze the second-best welfare benchmark below.

4.1 The Welfare Benchmark with Contractible Effort ($\gamma = 1$): the "Capture" Effect

We begin by analyzing the benchmark case when the policymaker is able to commit the government bureaucracy to a specific action. This is equivalent to a case where the administrative state capacity $\gamma = 1$ and the government-policymaker is able to commit the bureaucrat to take the high effort action (see Besley and Persson, 2011). At the same time, we should keep in mind that investors cannot commit to retain their investment in the country, especially if the cost of international capital mobility are low.[12] Therefore, we describe as our welfare benchmark the second-best case, where by assumption - the bureaucracy can commit to take an action but investors cannot pre-commit to retain their capital in the country.

Accordingly, when bureaucrat effort is contractible, the policy-maker's expected payoff W is obtained by maximizing with respect to e, c_w the expected return to investment:

$$W = \alpha \left(\int_0^1 e\theta f(\theta)d\theta \right) \tag{3}$$

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[12]The only possible exception is the case, when the currency of the country in question acts a reserve currency for the foreign investor.

where expected returns to the investment are given by $Y = e\theta$ and α is the share of total output that accrues to domestic factors. Recollect that the bureaucrat's participation constraint is $\delta - \psi(e) \geq 0$. Note that for any solution to the policy-maker's maximization problem, the bureaucrat's participation constraint will bind. It follows that the maximum level of effort consistent with the bureaucrat's participation constraint is $e_{\max} = \psi^{-1}(\delta)$.

The representative investor will invest if and only if the expected payoff from investing in the country ($\tilde{R}$) is greater than the opportunity cost of doing so i.e. iff

$$\tilde{R} = (1 - \alpha)\left(\int_{\frac{\overline{Y}}{e_{max}}}^{1} e_{\max}\theta f(\theta)d\theta\right) + (1 - c_w)F\left(\frac{\overline{Y}}{e_{\max}}\right) \geq R \tag{4}$$

The first term on the left hand side is the expected payoff to the foreign investor from not withdrawing investment out of the country (since the return on the investment project is expected to be sufficiently high). The second term is the investor's payoff from pulling investment out of the country (this occurs with probability $F(\frac{\overline{Y}}{e_{\max}})$).

The policymaker faces the decision of whether to incur the up-front cost of initiating the public project. If successful, such a public project boosts private returns and may help attract foreign investment. Accordingly, the government will initiate the project if and only if the expected payoff from doing so is higher than the fixed cost of initiating project C_1, i.e. iff

$$W = \alpha\left(\int_{\frac{\overline{Y}}{e_{\max}}}^{1} e_{\max}\theta f(\theta)d\theta\right) \geq C_1. \tag{5}$$

The share of the total output that accrues to the policymaker-government is given by α and the term within brackets is the expected project return when the bureaucrat puts in effort $e_{\max}$, conditional on the private investment being retained in the project till its maturity.

Consider the impact of a change in c_w on the policy-maker's payoff and foreign investor's payoff respectively. As mentioned earlier we can interpret this as a change in the degree of global integration/segregation arising out of a change in capital controls or the degree of globalization - either of which affect the transactions costs of moving capital across borders. When effort is contractible, the direct impact on the quality of governance as captured through the bureaucrat's incentives - the "discipline"- is absent. However, a high cost of withdrawing capital, makes the policymaker-government less vulnerable to the adverse consequence of capital flight in case of low project return. As the cost of completing the project is zero, the government's expected payoff unambiguously goes up as c_w goes up in value. However, a higher cost of withdrawing capital reduces the option value to the foreign investor of not investing in

the country. This is because the investor's investment is likely to be captured by the host country, as the investor is unlikely to be able to exercise his option to withdraw capital when the return on the investment project is low. This "capture" effect of a higher ex-ante cost of capital withdrawal has, as we shall show, an unambiguously negative effect on the returns from investing in the project in the first place.

In other words, once capital has been invested into a country, this "capture" effect makes the host country policymaker better off precisely because it limits the ability of the investors to exercise their "option" to exit the country. Notice that there is a direct distributional aspect to the "capture" effect - since it has very different payoff implications for the investors as against the policymaker-government.

Proposition 4. *Under the assumption that bureaucrat effort is contractible, we have the following characterization of foreign investor and policy-maker welfare:*

(i) the foreign investor's ex-ante payoff is decreasing in c_w and there exists a cutoff value $\bar{c} \geq 0$ so that the investor invests only if $c_w \leq \bar{c}$.

(ii) the policy-maker's expected payoff is increasing in c_w and there exists a cutoff value $\hat{c} \geq 0$ so that the government is willing to start the project only if $c_w \geq \hat{c}$.

(iii) the project will undertaken iff $\hat{c} \leq \bar{c}$.

Proof: See Appendix.

Therefore, when $\bar{c} > 0$, even when bureaucrat effort is contractible but the investor cannot commit not to engage in capital flight if the (observed) bureaucrat effort is high, there is a role for capital controls.

4.2 Welfare Analysis with Non-contractible bureaucrat Effort ($\gamma = 0$)

We now describe the equilibrium and carry out the welfare analysis in the case that interests us - namely, where the policymaker-government is unable to commit the bureaucrat to commit to take a specified action (i.e. the administrative state capacity $\gamma = 0$). The representative investor will invest if and only if the expected payoff from investing in the country ($\tilde{R}$) is greater than the opportunity cost of doing so i.e. iff

$$\tilde{R} = (1 - \alpha) \left(\int_{\frac{Y}{e^*}}^{1} e^* \theta f(\theta) d\theta \right) + (1 - c_w) F \left(\frac{\overline{Y}}{e^*} \right) \geq R \tag{6}$$

The interpretation of the investors ex-ante payoff is exactly the same as in the case with contractible bureaucrat effort with e^* in place of $e_{\max}$.

The policymaker will initiate the project if and only if

$$W = \alpha \left(\int_{\frac{Y}{e^*}}^{1} e^* \theta f(\theta) d\theta \right) \geq C_1.$$

The interpretation of the investors ex-ante payoff is exactly the same as in the case with contractible bureaucrat effort with e^* in place of $e_{\max}$ (see equation (5)).

We want to characterize how the decision to invest and/or the decision to initiate the project is affected by changes in c_w. With non-contractible bureaucrat effort (i.e. zero state capacity), in addition to the capture effect, there is the " incentive" effect namely $\frac{de^*}{dc_w}$.

Consider first, the case where globalization has a positive discipline effect. Here $\frac{de^*}{dc_w} < 0$ and the bureaucrat's optimal effort choice e^* is decreasing in the cost of withdrawing capital. Accordingly, the "discipline" effect and the "capture" effect, both go in the same direction so that foreign investor's expected payoff from investing in the country increases with globalization. However, a rise in c_w, makes the threat of capital flight more costly and weakens the "disciplining" effect of globalization. Indeed this can more than offset the positive impact of global segregation on the policymaker's ability to keep investment despite a bad external shock (i.e. the "capture" effect). Accordingly, globalization (i.e. a change in c_w) may not have a monotonic impact on the government's expected payoff.

Having discussed the impact of globalization of short term capital movements, we are now in a position to examine its impact on host country welfare. We do this by integrating the policymaker's decision to launch the public project with the foreign investor's investment decision. As in the preceding discussion, we capture the extent of integration of a country's capital markets, in a particularly simple manner - a reduction in the cost of a short-run liquidation and withdrawal of capital from the host country.[13]

The impact on overall welfare will be a combination of the impact of a change in the degree of global integration (i.e. change in c_w) on both the foreign investor's expected payoff (i.e. $\tilde{R}$) and the policymaker's payoff W. Indeed, as suggested by the preceding analysis, the overall impact on host country welfare occurs through the working of the "discipline" and "capture" effects. The preferences of the foreign investor and the policymaker are aligned when it comes to the "discipline" effect. Both investors and the policymaker would like to provide the appropriate incentives to ensure good governance. However, as mentioned above, the preferences of the policymaker and the foreign investors are in conflict when it

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[13]We should point out that while our analysis does not distinguish between a change in the cost of withdrawing capital (i.e. change in c_w) that is driven by technological-environmental forces or those driven by a government's policy choices. However, for the moment, we assume that the government can choose the value of c_w subject to a lower bound $\underline{c}_w$.

comes to the "capture" effect. For a summary see Figure 1 in the Appendix.

The following proposition compares investor and policy-maker welfare with non-contractible bureaucrat effort to the second-best welfare benchmark with contractible bureaucrat effort:

Proposition 5. *Under the assumption that bureaucrat effort is non-contractible, we have the following characterization of foreign investor and policy-maker welfare:*

(i) If a decrease in c_w improves bureaucrat governance (i.e. positive "disciplining" effect), then globalization (a smaller c_w) increases both national and investor welfare if $\frac{dW}{dc_w} < 0$.

(ii) If a decrease in c_w worsens bureaucrat governance (i.e. negative "disciplining" effect), then national welfare always worsens with globalization. Furthermore, if $\frac{d\tilde{R}}{dc_w}|_{c_w=0} > 0$, then a marginal increase in c_w can improve both investor and national welfare. i.e. it is a Pareto improvement.

(iii) When there is a disciplining effect of the threat of capital flight on bureaucrat effort, relative to the second best benchmark, lower capital controls will improve both investor and government welfare.

(iv) When there is an overdisciplining effect of the threat of capital flight on bureaucrat effort, relative to the second best benchmark, lower capital controls will lower both investor and government welfare.

Proof: See Appendix.

The proposition above describes that the impact on welfare of a reduction in the short-run cost of withdrawing capital is due to external shocks (or other changes that are not a function of the decision of the domestic policymaker). However, our framework is equally relevant, if we are analyzing the welfare impact of a reduction in c_w arising out of a policy decision - such as a reduction in capital controls. In terms of our framework, the only difference is that at stage 1 (refer back to the timing of the game in Section 2), the government chooses c_w (the level of capital controls) rather than merely observe c_w. The fact that this choice of a c_w may involve a dead-weight loss will not alter the qualitative nature of any of results summarized in the preceding Propositions.

Our results throw light on one of the most contentious issues in international economic policymaking - the role of capital controls. A variety of arguments have been put forward for the imposition (or removal) of capital controls. However, ours is the first analytical treatment which looks at a very distinct channel - namely, the impact of capital controls on the quality of a country's governance. Our analysis suggests that if a country's economy is vulnerable to shocks from the global economy (i.e. suffers from 'overdisciplining'), there could be a role for capital controls. Equally, there is a strong argument in favor of reducing capital controls - the 'disciplining' of nations clearly works, albeit some of the time.

Given our analysis in the preceeding section (Remark 1) taken together with our preceding discussion on the impact of globalization (decrease in c_w) on national welfare and the payoffs of the foreign investor:

REMARK 2: *(i) Globalization (i.e. lower capital controls) will improve both investor and government welfare relative to the second-best welfare benchmark, so long as the country has a sufficiently structurally diversified export sector, i.e. if the revenue from the country's export sector is described by a (truncated) exponential distribution and the ratio of the country's average value of exports to their variance is sufficiently high.*

(ii) Globalization (i.e. lower capital controls) will lower both investor and government welfare, relative to the second-best welfare benchmark, so long as the country's export sector is insufficiently diversified, i.e. if the revenue from the country's export sector is described by a (truncated) exponential distribution and the ratio of the country's average value of exports to their variance is sufficiently low.

While our results provide ammunition for both critics as well as advocates of easing up international capital mobility, we suggest that our results be treated very cautiously and not read as policy recommendation. This is especially true since we have completely sidestepped the political economy considerations that may hijack capital control policy.

5   Globalization and Governance: Some Evidence

Our theoretical framework generates a rich set of predictions. In this section we provide evidence consistent with some of our predictions. At the outset we should emphasize that the evidence should be treated as suggestive and interpreted cautiously - for reasons we elaborate on later in the section.

However, before we summarize our main predictions, we recollect that a country with state capacity of γ implements the first-best with probability γ (Proposition 3). Therefore, we should not expect that countries with strong institutions of governance will suffer from the inefficiencies that we have spelt out in our analysis - and this should be accounted for in our empirical analysis below. Keeping this in mind, we begin by summarizing some of the key predictions:

A. Uncertainty and Governance: (a) The quality of governance is adversely affected by greater uncertainty in the economic environment (Proposition 2). This is because with greater uncertainty over θ, the probability of capital flight becomes less sensitive to changes in e, resulting in an unambiguous decline in the quality of governance. (b) The impact of greater uncertainty in the economic environment will be *decreasing* in the bureaucrat state-capacity of the country γ (Proposition 3).

B. Governance and Globalization (Capital Controls): Countries with high bureaucratic state capacity should (on average) have lower capital controls. In particular, a reduction in the cost of financial globalization c_w (e.g. lowering of capital controls) should be associated with improved measures of governance. This is because globalization results in the quality of governance improving in some countries and worsening in others. However, we should only expect a government to relax capital controls if doing so has a positive impact on governance.

In what follows, while we provide some suggestive evidence on both sets of predictions, our focus is on A. This is for two reasons. First, we do not have plausible measures of a change in the cost of moving capital across countries, c_w. The only measure that is reliably available is the size of capital controls - an endogenous choice variable of the government. Second and more importantly, we focus on A, because doing so throws light on the precise mechanism emphasized in the paper - in particular, how an exogenous change in economic uncertainty (possibly caused by globalization), can worsen incentives for good governance. However, any empirical design that tries to study this issue faces several challenges. First, we should be able to identify a sudden and unexpected event that results in greater uncertainty about the economic environment in a large number of countries. Second, this change in the economic environment should be independent of the actions of the bureaucrat-policymaker in the country that we are studying.

We argue that the Mexican currency crisis of 1994 provides a possible setting for a natural experiment that can help throw light on the impact of the greater uncertainty on the quality of governance. This currency crisis increased uncertainty and raised the fear of contagion across a number of countries that were perceived by investors to be 'similar' to Mexico - the so called "Tequila effect" on other countries in the region (see Dornbusch, Park and Claessens, 2000).[14] Further, it is plausible that the initial trigger for the Mexican crisis was *not* the actions of policymakers and bureaucrats in countries other than Mexico. [15] Indeed, it is because of this that we are interested in the impact of this increased uncertainty on countries *other* than Mexico. Our main hypothesis is that countries that were *perceived* to be similar to Mexico *and* had poor bureaucratic state capacity, were more likely to be affected by the increased uncertainty

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[14]Indeed, Glick and Rose (1999) argued that following the Mexican crisis there was considerable uncertainty as "speculative attacks on ther Latin American countries occurred immediately. The most prominent targets of the 'Tequila Hangover' were Latin American countries, especially Argentina, Brazil, Peru and Venezuela." For a good summary of the effects of the Mexican crisis and its aftermath see Sachs, Tornell and Velasco (1996) and Kaminsky and Reihart (2000).

[15]It matters less whether this fear of contagion (the Tequila effect) was driven by fundamentals or whether it was irrational investor perceptions.

due to the Mexican currency crisis. It is important that we distinguish between subjective contagion and real economic contagion across this set of countries. This is because according to our theory, we should expect an impact from greater uncertainty (in this case, greater uncertainty driven by external shocks) on bureaucratic governance under the following two conditions. First, that this increased uncertainty was partially due to greater subjective (as against real economic) contagion. Second, we should only expect the increased uncertainty to affect governance if the country had poor bureaucratic state capacity in the first place.

Data: As a first step for our empirical analysis, we need a measure of a country's bureaucratic performance. We have no direct measure of the quality of bureaucratic governance available across countries. Fortunately, we have survey data on 'bureaucratic quality' available for a large number of countries from *Political Risk Services* for the period 1984-1997. This is an index that is increasing in bureaucratic quality and has the range from 6 to 0.2 in our data. Second, we need an exogenous measure of the perceived similarity of a country to Mexico. Accordingly, we use the weighted genetic closeness of a country to Mexico as a proxy for the extent of the expected 'contagion' from Mexico (see Spolaore and Wacziarg, 2009). The measure ranges from 1,835 to 14.14 in our data. Countries which are seen as similar to Mexico are more likely to be affected by contagion in financial markets. Contagion increases market volatility (Corsetti et al., 2010) and is therefore likely to cause investment decisions to be less tied to bureaucrat effort. Third, a measure of a country's bureaucratic state capacity is the strength of its institutions - where a measure of Protection against Expropriation is the most widely used measure. To facilitate interpretation we flip the index, so that 10 represents the poorest institutions, and 0 represents the best. In order to minimize concerns of endogeneity, following Acemoglu, Johnson and Robinson (2001), we use settler mortality as our instrument for a country's overall bureaucratic state capacity. [16]

Empirical Specification: According to our theoretical framework, greater uncertainty in the economic environment should worsen bureaucratic performance, but only when the incomplete contractual structure exists between the government and the bureaucrat (i.e. low bureaucrat state capacity). However, since the uncertainty from the Mexican crisis is more likely to affect countries perceived to be similar to Mexico, our empirical specification takes the following form [17]

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[16]Acemoglu, Johnson, Robinson show that settler mortality correlates highly with Risk of Appropriation, so our first stage should be similar in that respect, however, we have 2 endogenous variables because of our difference-in-differences design. Also, we must reconsider the exclusion restriction assumption, as our second stage is different. However, we see no reason for settler mortality to impact on bureaucratic quality other than through its impact on institutions.

[17]This can be seen as a triple-difference design.

$$e_{ct}^* = \alpha_c + \beta_1[Contagion_{ct} \times SettlerMortality_c] + \beta_2[SettlerMortality_c \times Post94_t]$$

$$+ \beta_3[Contagion_{ct}] + \beta_4[Post94_t] + \Gamma YearFE + \Xi Controls + \epsilon_{ct}$$

Where the subscript c denotes countries and t denotes year and otherwise standard time-invariant variables are omitted because we estimate a fixed-effects model (ie. country institutions as measured by settler mortality, genetic closeness to Mexico, and their interaction are all dropped in the fixed-effects specification). $Post94$ is a dummy variable for observations between 1995 and 1997, inclusive. $Contagion$ equals the interaction between genetic closeness to Mexico and $Post94$. Furthermore in our model, the impact of uncertainty on governance is completely absent for countries with *no* incomplete contractual problem between the policymaker and the bureaucrat. Accordingly, in some of our specifications (column 2 onwards) we increase the flexibility of the specification by allowing countries with a perfect state capacity index [18] to react differently to the treatment by interacting our treatment with a dummy for perfect state capacity. If this feature of our model is correct this improvement in specification should improve the precision of our estimates.

Results: The reduced form equation above is estimated with and without a number of controls - from GDP per capita, military regimes, democracy, population, trade with Mexico, and openness to trade. While the results are robust to each, our preferred specifications do not include GDP per capita, exports, debt, trade with Mexico or openness to trade, since they are arguably endogenous variables. In robustness and falsification tests we therefore omit these controls. At the same time, we want to be sure that economic fundamentals are not driving our results, so it's important to ensure robustness to variables like imports and exports with Mexico, which measures how exposed each country was to real economic effects of the crisis. Table 1 shows the main results in a reduced form specification. The coefficient of interest is β_1, which corresponds to the interaction between settler mortality and the contagion variable (which equals genetic distance if the observation is post-crisis). In all the specifications that we tested, we obtain a negative coefficient, that is robust to a wide variety of controls. This is consistent with our theoretical prediction that bureaucratic performance is negatively affected by the increased threat of capital flight - so long as bureaucratic state capacity was imperfect *and* the country was perceived to be similar to Mexico. Furthermore, our theory predicts that countries with perfect bureaucrat state-capacity

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[18]The state capacity index we used to construct this binary variable is the sum of the PSR corruption, rule of law and bureaucracy indices

Table 1: Reduced-form Estimates of Contagion on Bureaucratic Quality

| VARIABLES | Dependant Variable: Bureaucratic Quality | | | | | |
	(1)	(2)	(3)	(4)	(5)	(6)
Contagion x Settler Mortality	-0.144*	-0.597***	-0.622***	-0.627***	-0.537***	-0.557***
	(0.0815)	(0.129)	(0.126)	(0.124)	(0.140)	(0.147)
Year FE	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Non-interacted treatments	N	Y	Y	Y	Y	Y
Diff. reaction if high st.cap.	N	Y	Y	Y	Y	Y
Military Regimes	N	N	Y	Y	Y	Y
Democracy	N	N	N	Y	Y	Y
GDP per capita	N	N	N	N	Y	Y
External Debt	N	N	N	N	Y	Y
Exports	N	N	N	N	Y	Y
Openness to Trade	N	N	N	N	N	Y
Interdependence with Mexico	N	N	N	N	N	Y
Observations	616	616	616	616	528	528
R-squared	0.074	0.106	0.156	0.175	0.225	0.243
Number of countries	56	56	56	56	49	49

Notes: All models are estimated using OLS. The time period included in the sample is restricted to 1987-1998. The dependent variable in all columns is Bureaucratic Quality. All models include country fixed effects and year fixed effects. Contagion x Settler Mortality refers to the the interaction between Post94, Settler Mortality and Closeness to Mexico. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

will react very differently to a crisis. Indeed, our results are reassuring on this count, since when we allow these countries to react differently to the crisis (column 2-6), there is a dramatic improvement of the precision of our estimates. We can also discount the possibility that economic fundamentals are driving our estimates based on this table. The estimate is robust to our first of two checks on this potential issue: including the variables intended to control for the exposure to the crisis based on fundamentals; GDP per capita, openness to trade, external debt, imports and exports with Mexico and total exports.

Of course, the results above are only the reduced form estimates. So we may worry whether settler mortality is an adequate instrument for the institutional state capacity of a country. To further ensure that the settler mortality term that we use is an adequately proxy for institutional quality, we also report two-stage least squares results (see Appendix for details). Here the controls are the same as in the reduced form version of the model. In column 1, because both instruments are significant predictors of both endogenous variables, we might have an under-identification issue. However, as can be seen from columns 2-7, under-identification is no longer a concern once we correctly specify the model to treat countries with a perfect

state capacity differently. Otherwise, the first stage is consistent with expectations. The instruments that are expected to predict the endogenous variables are all highly significant with the expected signs. The second stage is also consistent with all previous results. Each correctly specified model is highly significant and with the expected sign. The coefficient of interest in the first (misspecified) model is insignificant, which is unsurprising given the potentially under-identified first stage results.

We carry out further robustness checks. One concern with this framework is that we can't be positive that we're picking up the effect of the crisis specifically rather than normal trend effects. In other words, this can be seen as a difference-in-differences design, which relies on the identifying assumption that the treatment and control groups are not already diverging before treatment. To alleviate this concern we run a series of placebos, moving the year of treatment to various different points in time. Observe from Table 4 that this is not a concern since each placebo is close to zero and highly insignificant .

As a further test of robustness, we examine serial correlation as suggested in Bertrand, Duflo and Mullinaithan (2004). We have 56 countries in our sample, so we correct for serial correlation using the two relevant (given our sample size) suggestions: clustering and collapsing the data to fewer time periods [19]. Table 3 shows the reduced form and 2SLS results using the two-way cluster-robust standard errors proposed by Cameron, Gelbach and Miller (2011). This allows for clustering in two non-nested dimensions, and we do so on countries and years. While we present results without the potentially endogenous 'exposure' controls, their inclusion does not change the qualitative nature of the results. We find that our results are robust to clustering, suggesting that serial correlation is not driving our results.

Despite the fact that our results seem quite robust, there are reasons to be cautious. Our first concern is that the possibility that the Mexican crisis results in adverse real economic contagion effects may result in a neighboring country's fundamentals being affected in a way that resources available to the bureaucracy are curtailed. For example, the crisis results in a sharp drop in Mexican demand for imports or FDI towards other Latin American countries[20] - i.e. economic contagion (Rigobon, 2006). This economic contagion may have an adverse impact on the budgetary situation in these countries and result in fewer resources being devoted to the bureaucracy and institutions of governance. Accordingly, failure

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[19]The third suggestion is block-bootstrapping, but as noted by Bertrand, Duflo and Mullainathan a large number of observations is required. In fact they note in a working paper version that 50 observations would not be sufficient for the block-bootstrap to perform well and we have only 56

[20]We control for the former using controls for trade with Mexico directly in the main results, while the latter was tested in a falsification test similar to table 5, except with FDI as the dependent variable. We do not present results on the FDI falsification test, however we can rule out that a decrease in FDI occurred among our treatment group after treatment

to control for changes in economic fundamentals due to the crisis, could represent an omitted variable, which might bias our estimates. However, any empirical strategy should account for the challenge that arises from the endogeniety of changes in the budgetary expenditure. We therefore take a two pronged approach. First, we carry out a falsification exercise by testing our model on government expenditures to see if the crisis reduced government budgets. Here, if we found a significant decrease in government budgetary resources, it could be argued that it was this drop in resources that was causing a drop in bureaucrat performance, rather than the increased uncertainty. Reassuringly, the crisis does not have any significant impact on government budgets among countries similar to Mexico with low state capacity. We report these results in Table 5 columns 5-8. Not only is the estimate not significant, if anything it has the opposite sign. This result is consistent with our previous specifications that show a country's change in bureaucratic quality is not being driven by its direct economic exposure to the crisis. While these controls are potentially endogenous, we include them only in the last column of Table 1 to show that are results are not being driven by GDP per capita, openness to trade, imports and exports with Mexico, external debt and exports.

The second main concern that we have is that our measure of bureaucratic performance is a subjective one. In particular, while this measure is widely used, the main worry may well be that it is subject to 'contamination' since it based on the perceptions of managers and investors surveyed. The concern is that there may be no actual change in bureaucratic quality, and instead the crisis merely caused a change in perceptions of bureaucratic quality. Given the absence of an alternative reliable, objective measures of bureaucratic performance that are easily available for a cross section of countries, this is a difficult challenge, which we address indirectly. To assess whether this is a significant concern, we run our model through a falsification test using a variable we believe should be similarly affected by a perceptions bias, but for which there is no expected real effect. The dependent variable used is a bureaucrat corruption measure from the same survey as our bureaucratic quality measure, and generated using the same methodology. The idea is that because we expect no real change in real corruption, but we do expect perceptions of both bureaucratic quality and corruption to be highly correlated, we can attribute changes in the corruption estimate to the size of the bias. The success of this falsification design relies on the claim that a perceptions bias will be highly correlated among all measures of how well a government functions.

The results of this falsification test can be seen in Table 5, columns 1-4. Indeed the estimates are

close to 0 and insignificant. While not reported, we also run a similar exercise on perceptions from Heritage Foundation, and the results were similar. Transparency International and World Bank also have perception based measures, however they don't include data from before the crisis, so these measures could unfortunately not be tested. However, there is no impact of the crisis on any of our falsification specifications, indicating that the concern that our results for bureaucratic quality results are driven by biased perceptions should be minimal. The fact that we do not find any significant impact of the Mexican crisis on measures of perceived corruption, increases our confidence that changes in bureaucratic quality were real changes, and not biased by false perceptions.

The results described above suggest that the unexpected increase in uncertainty in financial markets exacerbated the threat of capital flight and adversely affected governance, especially in those countries which had relatively weak institutional state capacity. This effect is robust to the inclusion of many controls, including measures of current development, and survives placebo analysis. Further, the two-stage least squares analysis is consistent with the reduced form analysis. Moreover, while the results from our falsification tests were reassuring, they were not conclusive. Accordingly, given that we lack direct measures of bureaucratic performance, we argue that the results be interpreted cautiously and treated as suggestive.

We now briefly sketch out some suggestive evidence that shows the relationship between governance and capital controls sketched out in B above. The globalization of capital can occur due to changes in the policy environment (e.g. a reduction in capital controls) or a function of technological changes (e.g. the information technology revolution). Indeed, both these factors have been responsible for the increase in the movement of international capital over the last couple of decades. However, the empirical literature on financial globalization on governance has been handicapped not just by the absence of any (exogenous) measure of the changes in (technology related) cost of moving capital across borders, but also the endogeneity of changes in the policy of capital controls. Accordingly, over here our aims are quite modest. We limit our discussion to providing some suggestive evidence in support of our claims. While suggestive, our results are no more than that - since issues of endogeneity and selection remain a concern.

As a first step, consider Columns 4 and 5 of Table 6. This provides conditional correlations that suggest that a weakening of capital controls is associated with better governance as captured by improvements in bureaucratic quality, i.e. the coefficient is negative. Of course, this correlation is likely driven by countries that do not relax capital controls because they fear the adverse impact on bureaucrat governance (ie.

selection bias). Recollect that our theoretical framework suggests that the effect on governance from a change in capital controls may on average be close to zero, as positive and negative effects are possible. In column 6 of Table 6 we attempt to control for the selection bias which may be driving columns 5 and 6. If those countries with poor institutional quality are those least likely to proceed with capital control relaxation, then the institutional quality variable will be correlated with the selection bias. If our theoretical prediction is correct, the inclusion of a variable correlated with the selection effect should drive the estimate towards zero. Indeed this is precisely what we see, as there is a reduction of the size of the estimate towards zero in column 6. While consistent with our theoretical predictions, these results are quite possibly driven by some omitted variable.

6   Conclusion

The globalization and integration of the world economy over the past few decades has led to dramatic changes in the pattern of capital flows - especially to developing countries. A number of commentators have pointed out both the promise and the perils of increased (though more volatile) capital flows. In this paper we take a first step in examining the implications of this globalization of capital on the quality of governance. Despite the simplicity of our framework, our results were quite striking. By exacerbating the threat of capital flight, globalization had the potential to 'discipline' errant governments into enacting efficient policies. However, this disciplining stick of the global capital market was not perfect. The threat of unwarranted capital flight could also weaken incentives and 'indiscipline' governments, especially so long as the government was unable to impose capital controls.

It is difficult to think of institutional mechanisms that can credibly commit governments to behaving in an efficient manner, especially in developing countries - where the state's bureaucratic capacity is relatively weak. However, our analysis suggests that we should be cautious in presuming that the forces of globalization will in and of themselves provide a simple mechanism to discipline governments and improve governance. All countries face the prospect of indisciplined governments. However, this problem in particularly acute in developing countries because as argued by North(1990, pp57), such countries lack "...a mechanism to provide the information necessary to know when punishment is required". Our analysis suggests that while such a mechanism might end up arriving as a by-product of the process of globalization, integration and technological change - its impact may be uncertain.

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7 Appendix: Theory

Proof of Proposition 1: By computation, $\frac{\partial^2 B(e)}{\partial e^2} = -\left[\left(f'(\frac{\overline{Y}}{e})\frac{\overline{Y}}{e} + 2f\left(\frac{\overline{Y}}{e}\right)\right)\frac{\delta\overline{Y}}{e^3} + \psi''(e)\right]$ so that the bureaucrat's objective function is (strictly) concave in e if $f'(\theta)\theta + 2f(\theta) > 0$, $\theta \in [0,1]$ or equivalently, $-\frac{\theta f'(\theta)}{f(\theta)} < 2$. Further, given that the bureaucrat's objective function is strictly concave, at an interior solution e^* the following first-order condition holds:

$$\frac{\partial B(e^*, \overline{Y})}{\partial e} = f(\frac{\overline{Y}}{e^*})\frac{\overline{Y}}{(e^*)^2}\delta = \psi'(e^*)$$

By taking total derivatives of the first-order condition with respect to e and $\overline{Y}$, it follows that

$$\frac{de^*}{d\overline{Y}} = -\frac{\frac{\partial^2 B(e^*, \overline{Y})}{\partial e \partial \overline{Y}}}{\frac{\partial^2 B(e^*)}{\partial e^2}} = \frac{\left(f'(\frac{\overline{Y}}{e^*})\frac{\overline{Y}}{e^*} + f\left(\frac{\overline{Y}}{e^*}\right)\right)\frac{\delta}{(e^*)^2}}{\left[\left(f'(\frac{\overline{Y}}{e^*})\frac{\overline{Y}}{e^*} + 2f\left(\frac{\overline{Y}}{e^*}\right)\right)\frac{\delta\overline{Y}}{(e^*)^3} + \psi''(e)\right]}$$

By computation, note that $\frac{\partial B(e, \overline{Y})}{\partial e \partial \overline{Y}} = \left(f'(\frac{\overline{Y}}{e})\frac{\overline{Y}}{e} + f\left(\frac{\overline{Y}}{e}\right)\right)\frac{\delta}{e^2}$ so that bureaucrat's effort e and $\overline{Y}$ are complements (i.e. $\frac{\partial^2 B(e, \overline{Y})}{\partial e \partial \overline{Y}} > 0$) if $f'(\frac{\overline{Y}}{e})\frac{\overline{Y}}{e} + f\left(\frac{\overline{Y}}{e}\right) > 0$ which can be rewritten as $-\frac{\theta f'(\theta)}{f(\theta)} < 1$. On the other hand, if $-\frac{\frac{\overline{Y}}{e^*}f'(\frac{\overline{Y}}{e^*})}{f(\frac{\overline{Y}}{e^*})} > 1$, $\frac{\partial B(e, \overline{Y})}{\partial e \partial \overline{Y}} < 0$ so that bureaucrat's effort e and $\overline{Y}$ are substitutes. ∎

Example 1 (The truncated exponential)

Let $f(.)$ be the exponential distribution restricted to $[0, 1]$ so that

$$f(\theta) = \begin{cases} \frac{g(\theta)}{\hat{g}} & \text{if } \theta \in [0, 1], \\ 0 & \text{otherwise} \end{cases}$$

where

$$g(\theta) = \begin{cases} \lambda \exp^{-\lambda\theta} \text{ if} \lambda > 0,\, \theta \geq 0, \\ 0 \text{ otherwise} \end{cases}$$

and $\hat{g}(\theta)$ is the corresponding cumulative distribution function. By substitution we get

$$-\frac{f'(\frac{\overline{Y}}{e^*})\frac{\overline{Y}}{e^*}}{f\left(\frac{\overline{Y}}{e^*}\right)} = \lambda\frac{\overline{Y}}{e^*}$$

so that as long as $1 \leq \lambda\frac{\overline{Y}}{e^*} \Leftrightarrow e^* \leq \lambda\overline{Y}$ the bureaucrat's effort is increasing in c_w. As $e^* \leq 1$, as long as $\frac{\lambda}{1-\alpha} \geq 1$ or $\frac{1}{\lambda} \leq \frac{1}{1-\alpha}$ the bureaucrat's effort is increasing in c_w.

On the other hand if $e^* > \lambda\overline{Y}$, the bureaucrat's effort choice is decreasing in c_w. Let $\psi(e) = ce$. Using the fact that e^* is characterized by a FOC, by substitution, we obtain that as long as

$$\frac{\delta \exp^{-1}}{\lambda\hat{g}(1)} > c \Leftrightarrow \frac{1}{\lambda} > \frac{c\hat{g}(1)}{\delta \exp^1}$$

To summarize: as long as the ratio to mean to variance is low enough, the bureaucrat's effort e^* is increasing in c_w; further, as long as, the ratio of mean to variance is high enough e^* is decreasing in c_w. ∎

Example 2 (Non-concave expected payoffs $B(e, \overline{Y})$)

If $-\frac{\theta f'(\theta)}{f(\theta)} > 2$ over a non-null set of θ, then the bureaucrats expected payoffs $B(e, \overline{Y})$ needn't be concave in e. In this case, first-order conditions may no longer be valid in characterizing e^*. How does e^* depend on $\overline{Y}$ (and hence, c_w) in this case?

To fix matters, we will focus on the case with corner solutions and assume that $\psi(e) = ce$. In this case, $e^* = 1$ when $\frac{\partial B(1,\overline{Y})}{\partial e} = f(\overline{Y})\overline{Y} > c$. As $f(\overline{Y})\overline{Y}$ is decreasing in $\overline{Y}$ whenever $-\frac{\overline{Y}f'(\overline{Y})}{f(\overline{Y})} > 2$, it follows that there exists a threshold value of $\tilde{Y}$ such that whenever $\overline{Y} \leq \tilde{Y}$, $e^* = 1$ and $\overline{Y} > \tilde{Y}$, there is a discontinuous jump of bureaucrat's effort from $e^* = 1$ to an interior value strictly less than one.

To summarize: that the bureaucrat's effort could decreasing discontinuously in $\overline{Y}$, and hence increase discontinuously in c_w, when the bureaucrat's expected utility is non-concave in own effort is a robust possibility. ∎

Proof of Proposition 2

The bureaucrat will choose e to solve

$$\max_{e \in [0,1]} B_i(e, \overline{Y}) = \left\{ 1 - F_i(\frac{\overline{Y}}{e}) \right\} \delta - \psi(e)$$

As $f_2(\theta)$ first order stochastically dominates $f_1(\theta)$, for each θ, $F_2(\theta) \leq F_2(\theta)$, or equivalently,

$$1 - F_2(\theta) \geq 1 - F_2(\theta)$$

so that for each $e \in [0, 1]$,

$$B_2(e, \overline{Y}) = \left\{ 1 - F_2(\frac{\overline{Y}}{e}) \right\} \delta - \psi(e) \geq \left\{ 1 - F_1(\frac{\overline{Y}}{e}) \right\} \delta - \psi(e) = B_1(e, \overline{Y}).$$

As for each $i, = 1, 2$, $\left\{ 1 - F_i(\frac{\overline{Y}}{e}) \right\}$ is concave in e and $\lim_{e \to 0} \left\{ 1 - F_i(\frac{\overline{Y}}{e}) \right\} = 0$, it follows that $\frac{\partial B_2(e,\overline{Y})}{\partial e} \geq \frac{\partial B_1(e,\overline{Y})}{\partial e}$. Let e_i^* denote the optimal choice of effort corresponding to the objective function $B_i(e, \overline{Y})$. Then, it follows that $e_2^* \geq e_1^*$ with strict inequality at an interior solution. ∎

Proof of Proposition 3

For a fixed value of γ, the bureaucrat's payoff is

$$B(e, \overline{Y}) = \begin{cases} [1 - F(\overline{Y})]\delta - \psi(1) & \text{, if } e = e_{\max} = 1 \\ (1 - \gamma)[1 - F(\frac{\overline{Y}}{e})]\delta - \psi(e) & \text{, otherwise} \end{cases}$$

Let $e\left(\overline{Y}, \gamma\right)$ denote the solution to the first-order condition

$$(1 - \gamma) f(\frac{\overline{Y}}{e})\frac{\overline{Y}}{e} = \psi'(e)$$

Then, $e\left(\overline{Y}, \gamma\right) \leq 1$ and the bureaucrat will choose effort $e_{\max} = 1$ iff

$$\left[1 - F(\overline{Y})\right]\delta - \psi(1) \geq (1 - \gamma)\left[1 - F(\frac{\overline{Y}}{e\left(\overline{Y}, \gamma\right)})\right]\delta - \psi(e\left(\overline{Y}, \gamma\right)).$$

It follows that when $\gamma = 0$ (the case studied so far), without loss of generality, the bureaucrat will choose effort $e\left(\overline{Y}, 0\right)$. When $\gamma = 1$ (high state capacity) the bureaucrat will choose $e_{\max}$ when $\left[1 - F(\overline{Y})\right]\delta \geq \psi(1)$. Note that when $c_w = 0$, $F(\overline{Y}) = 1$ and when $c_w = 1$, $F(\overline{Y}) = 0$ and $\left[1 - F(\overline{Y})\right]$ is increasing and continuous in c_w so that there exists a value of c_w, $0 < \widehat{c}_w < 1$, such that whenever $c_w \leq \widehat{c}_w$, the bureaucrat chooses effort $e_{\max}$.

Moreover, by duality, $(1 - \gamma)\left[1 - F(\frac{\overline{Y}}{e(\overline{Y}, \gamma)})\right]\delta - \psi(e\left(\overline{Y}, \gamma\right))$ is decreasing in γ. Moreover, $(1 - \gamma) F(\frac{\overline{Y}}{e(\overline{Y}, \gamma)}) - F(\overline{Y})$ is decreasing in $\overline{Y}$ (as long as $1 > \frac{\overline{Y}}{e^*}\frac{de^*}{d\overline{Y}}$ see the proof of Proposition 5 below) so that as γ decreases, as by assumption $-\frac{\theta f'(\theta)}{f(\theta)} < 1$ *for all* $\theta \in [0, 1]$, c_w has to go up in order to ensure that the bureaucrat continues to choose effort $e_{\max}$.

For a fixed value of c_w, if the bureaucrat chooses effort $e\left(\overline{Y}, \gamma\right)$, note that effort is increasing in c_w whenever $-\frac{\theta f'(\theta)}{f(\theta)} < 1$ for all $\theta \in [0, 1]$. ∎

Proof of Proposition 4:

By computation, note that the derivative of $\tilde{R}$ with respect to c_w is given by the equation

$$\frac{d\tilde{R}}{dc_w} = -F\left(\frac{\overline{Y}}{e_{\max}}\right) < 0$$

and is captured by the term $-F\left(\frac{\overline{Y}}{e_{\max}}\right)$. In this case, the investor's expected payoff $\tilde{R}$ attains a maximum when it is costless to withdraw short-term capital from a country, i.e. $c_w = 0$. Therefore, there exists a cutoff value $\bar{c} \geq 0$ so that the investor invests only if $c_w \leq \bar{c}$.

By computation, note that the derivative of W with respect to c_w is given by the equation

$$\frac{dW}{dc_w} = \frac{\overline{Y}}{e_{\max}}f\left(\frac{\overline{Y}}{e_{\max}}\right) > 0$$

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The government's expected payoff W attains a maximum when short-term capital is never withdrawn from a country, i.e. $c_w = 1$. Therefore, there exists a cutoff value $\hat{c} \geq 0$ so that the government is willing to start the project only if $c_w \geq \hat{c}$.

Clearly, when $0 \leq \hat{c} \leq \bar{c}$, the investment project will be undertaken and the government will set $c_w = \bar{c}$. ∎

Proof of Proposition 5:

By computation, note that the derivative of $\tilde{R}$ with respect to c_w, taking into account the incentive effect on bureaucrat effort, is given by the equation

$$\frac{d\tilde{R}}{dc_w} = (1 - \alpha) \left(\int_{\frac{\overline{Y}}{e^*}}^{1} \frac{de^*}{dc_w} \theta f(\theta) d\theta \right) - F\left(\frac{\overline{Y}}{e^*} \right)$$

There are two distinct effects on the investor's expected payoff $\tilde{R}$ from investing in the project as the cost of withdrawing capital increases. First, increasing the cost of withdrawing capital impacts on the bureaucrat's incentive to put in effort - this is the "discipline" effect. The impact of this effect is captured by the term $(1 - \alpha) \left(\int_{\frac{\overline{Y}}{e^*}}^{1} \frac{de^*}{dc_w} \theta f(\theta) d\theta \right)$. Second, as above, the "capture" effect is captured by the term $-F\left(\frac{\overline{Y}}{e^*} \right)$. When $\frac{de^*}{dc_w} < 0$, $\frac{d\tilde{R}}{dc_w} < 0$. In this case, the investor's expected payoff $\tilde{R}$ attains a maximum when it is costless to withdraw short-term capital from a country, i.e. $c_w = 0$. Therefore, there exists a cutoff value $\underline{c} \geq 0$ so that the investor invests only if $c_w \leq \underline{c}$. When $\frac{de^*}{dc_w} > 0$, the bureaucrat's optimal effort choice e^* is increasing in the cost of withdrawing capital. In this case the "discipline" effect and the "capture" effects go in opposite directions. In this case, $\tilde{R}$ may not be monotone in c_w. In particular, due to the fact that globalization may have a negative impact on the bureaucrat's effort, there could be regions in $[0, 1]$ where the expected return to foreign investment $\tilde{R}$, is increasing in c_w. Let $\underline{c}$ denote the minimum value of c_w for which the investor is indifferent between investing in the project or investing the money outside the country.

It follows that when $\frac{de^*}{dc_w} < 0$, $\underline{c} < \bar{c}$ and when $\frac{de^*}{dc_w} > 0$, $\underline{c} > \bar{c}$ so that relative to second-best welfare benchmark, the foreign investor has a lower tolerance for capital controls when there is a disciplining effect of the threat of capital flight and a higher tolerance for capital controls when there is an overdisciplining effect of the threat of capital flight.

We now turn to the payoff of the government-policymaker. By computation, note that the derivative of W with respect to c_w is given by the equation

$$\frac{dW}{dc_w} = \alpha \left[\left(\int_{\frac{\overline{Y}}{e^*}}^{1} \frac{de^*}{dc_w} \theta f(\theta) d\theta \right) - (1 - c_w) f\left(\frac{\overline{Y}}{e^*} \right) \frac{d\frac{\overline{Y}}{e^*}}{dc_w} \right]$$

Consider the impact of a change in c_w. There are two effects on the expected payoff to the government-policymaker W, as the cost of short-run capital withdrawal goes up. First, is the direct impact on the quality of governance as captured through the bureaucrat's incentives - the "discipline"- this can be positive or negative. This effect is captured in the first term, $\left(\int_{\frac{\overline{Y}}{e^*}}^{1} \frac{de^*}{dc_w} \theta f(\theta) d\theta \right)$, in the government's expected payoff. Second, as before, the second term, $-(1-c_w) f\left(\frac{\overline{Y}}{e^*} \right) \frac{d\frac{\overline{Y}}{e^*}}{dc_w}$, represents the "capture" effect. We show that $\frac{d\frac{\overline{Y}}{e^*}}{dc_w} < 0$ so that $-(1-c_w) f\left(\frac{\overline{Y}}{e^*} \right) \frac{d\frac{\overline{Y}}{e^*}}{dc_w} \geq 0$. By computation,

$$\frac{d\frac{\overline{Y}}{e^*}}{dc_w} = \frac{\frac{d\overline{Y}}{dc_w} e^* \left(1 - \frac{\overline{Y}}{e^*} \frac{de^*}{d\overline{Y}} \right)}{(e^*)^2}$$

If $\frac{de^*}{d\overline{Y}} \leq 0$, clearly $\frac{d\frac{\overline{Y}}{e^*}}{dc_w} < 0$. If $\frac{de^*}{dG} > 0$, by computation, note that

$$\frac{\overline{Y}}{e^*} \frac{de^*}{d\overline{Y}} = \frac{\left(f'(\frac{\overline{Y}}{e^*}) \frac{\overline{Y}}{e^*} + f\left(\frac{\overline{Y}}{e^*} \right) \right) \frac{\delta \overline{Y}}{(e^*)^3}}{\left[\left(f'(\frac{\overline{Y}}{e^*}) \frac{\overline{Y}}{e^*} + 2f\left(\frac{\overline{Y}}{e^*} \right) \right) \frac{\delta \overline{Y}}{(e^*)^3} + \psi''(e) \right]} < 1$$

as in this case $f'(\frac{\overline{Y}}{e^*}) \frac{\overline{Y}}{e^*} + f\left(\frac{\overline{Y}}{e^*} \right)$ so that again $\frac{d\frac{\overline{Y}}{e^*}}{dc_w} < 0$. Therefore, this second term makes the host country policymaker better off[21] precisely because it limits the ability of the investors to exercise their "option" to exit the country.

Therefore, once we take both of these effects into account, the impact of globalization on the government's payoff is the following. An increase in the cost of withdrawing short-term capital, results in a higher government payoff so long as the bureaucrat is being "overdisciplined". In this case lower levels of global integration by reducing the threat of unwarranted capital flight, improve the bureaucrat's incentives. In other words $\frac{dW}{dc_w} > 0$ whenever $\frac{de^*}{dc_w} > 0$, since in this case both the incentive and capture effects go in the same direction. In this case, the government's expected payoff W attains a maximum when short-term capital is never withdrawn from a country, i.e. $c_w = 1$. Therefore, there exists a cutoff value $\tilde{c} \geq 0$ so that the government is willing to start the project only if $c_w \geq \tilde{c}$.

In contrast, if the bureaucrat's incentives were such that he was being 'underdisciplined', then lower levels of global integration would have a negative effect on his incentive to put in effort. Therefore, when $\frac{de^*}{dc_w} < 0$ a weakening of the "discipline" effect occurs when capital flight is made costly for the foreign investor. Indeed this can more than offset the positive impact of global segregation on the policymaker's ability to keep investment despite a bad external shock (i.e. the "capture" effect). Accordingly, globalization (i.e. a change in c_w) may not have a monotonic impact on the government's expected payoff.

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[21]In the appendix we show that $\frac{d\frac{\overline{Y}}{e^*}}{dc_w} < 0$ so that $-(1-c_w) f\left(\frac{\overline{Y}}{e^*} \right) \frac{d\frac{\overline{Y}}{e^*}}{dc_w} \geq 0$.

Let $\tilde{c} \geq 0$ denote the minimum value of c_w for which the government is indifferent between starting the project and not starting the project at all.

By computation, it follows that, when $\frac{de^*}{dc_w} > 0$, $\tilde{c} < \hat{c}$ and when $\frac{de^*}{dc_w} < 0$, $\tilde{c} > \hat{c}$ so that relative to second-best welfare benchmark, the policymaker has a higher incentive to impose capital controls when there is an overdisciplining effect of the threat of capital flight and a lower incentive to impose capital controls when there is a disciplining effect of the threat of capital flight.∎

Figure 1: Impact of Globalization on Incentives and Payoffs

		FOREIGN INVESTORS	POLICYMAKER-GOVT.
Impact of Globalization (reduction in c_w) on Bureaucrat Incentives	Positive "incentive" effect $(de^*/dc_w) < 0$	Payoff increasing in globalization: lower c_w increases payoff due to both the "incentive" effect and "capture" effect $$d\tilde{R}/dc_w < 0$$	Ambiguity in payoff: higher c_w lowers payoff due to the negative "incentive" effect but increases it due to the increased "capture" $$dW/dc_w > or < 0?$$
	Negative "incentive" effect $(de^*/dc_w) > 0$	Ambiguity in payoff: higher c_w increases payoff due to the "incentive" effect but reduces it due to the "capture effect" $$d\tilde{R}/dc_w > or < 0?$$	Payoff decreasing in globalization: higher c_w increases payoff due to both the "incentive" effect (reduces overdisciplining) and Increases "capture effect" $$dW/dc_w < 0$$

8 Empirics

Table 2: Two-Stage Least Squares Estimates of the Contagion Effect

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
PANEL A: First Stage (1) - Dependant Variable: Contagion x Poor Institutions						
Contagion x Settler Mortality	0.454***	0.716***	0.708***	0.709***	0.611***	0.559***
	(0.0951)	(0.153)	(0.152)	(0.152)	(0.156)	(0.157)
Settler Mortality x Post94	168.8*	22.73	27.29	16.79	157.7	231.02*
	(95.57)	(115.5)	(115.3)	(115.7)	(124.8)	(128.7)
R-squared	0.611	0.616	0.617	0.618	0.680	0.685
PANEL B: First Stage (2) - Dependant Variable: Post Treatment x Poor Institutions						
Contagion x Settler Mortality	-0.205*	-0.00134	-0.0129	-0.0117	-0.178	-0.214
	(0.105)	(0.169)	(0.168)	(0.168)	(0.174)	(0.175)
Settler Mortality x Post94	914.4***	801.7***	808.4***	801.2***	1,001***	991.6***
	(105.3)	(127.7)	(127.3)	(127.8)	(139.6)	(139.1)
R-squared	0.686	0.688	0.690	0.691	0.741	0.743
PANEL C: Second Stage - Dependant Variable: Bureaucratic Quality						
Contagion x Poor Institutions	-0.205	-0.833***	-0.868***	-0.873***	-0.737***	-0.781***
	(0.139)	(0.214)	(0.212)	(0.211)	(0.227)	(0.246)
Settler Mortality x Post94	0.249**	0.569***	0.587***	0.621***	0.491***	0.561***
	(0.115)	(0.150)	(0.149)	(0.147)	(0.164)	(0.178)
C-D Minimum Eigenvalue	72.7	34.9	34.7	34.3	30.2	26.5
Year FE	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Non-interacted treatments	N	Y	Y	Y	Y	Y
Diff. reaction if high st.cap.	N	Y	Y	Y	Y	Y
Military Regimes	N	N	Y	Y	Y	Y
Democracy	N	N	N	Y	Y	Y
GDP per capita	N	N	N	N	Y	Y
External Debt	N	N	N	N	Y	Y
Exports	N	N	N	N	Y	Y
Openness to Trade	N	N	N	N	N	Y
Interdependence with Mexico	N	N	N	N	N	Y
Observations	616	616	616	616	528	484
Number of Countries	56	56	56	56	49	45

Notes: All models are estimated using IV. The time period included in the sample is restricted to 1987-1998. The second stage dependent variable in all columns is Bureaucratic Quality. All models include country fixed effects and year fixed effects. Contagion x Settler Mortality refers to the interaction between Post94, Settler Mortality and Closeness to Mexico. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 3: Robustness check: clustered standard errors

	Dependant Variable: Bureaucratic Quality					
	Reduced Form Estimates			IV estimates		
	(1)	(2)	(3)	(4)	(5)	(6)
Contagion x Settler Mortality	-0.597*	-0.622*	-0.627**			
	(0.331)	(0.321)	(0.313)			
Contagion x Poor Institutions				-0.833*	-0.868*	-0.873*
				(0.503)	(0.492)	(0.493)
Year FE	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Non-interacted treatments	Y	Y	Y	Y	Y	Y
Diff. reaction if high st.cap.	Y	Y	Y	Y	Y	Y
Military Regimes	N	Y	Y	N	Y	Y
Democracy	N	N	Y	N	N	Y
GDP per capita	N	N	N	N	N	N
External Debt	N	N	N	N	N	N
Exports	N	N	N	N	N	N
Openness to Trade	N	N	N	N	N	N
Interdependence with Mexico	N	N	N	N	N	N
Observations	616	616	616	616	616	616
R-squared	0.106	0.156	0.175			
C-D Minimum Eigenvalue				34.9	34.7	34.3
Number of Countries	56	56	56	56	56	56

Notes: All models are estimated using OLS. The time period included in the sample is restricted to 1987-1998. The dependent variable in all columns is Bureaucratic Quality. All models include country fixed effects and year fixed effects. Standard errors are two-way clustered at the country and year levels. Contagion x Settler Mortality refers to the interaction between Post94, Settler Mortality and Closeness to Mexico. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4: Placebo Estimates of Contagion on Bureaucratic Quality

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Placebo '86	Placebo '87	Placebo '88	Placebo '89	Placebo '90	Placebo '91
Contagion x Settler Mortality	0.00153	0.0263	0.0439	0.0275	-0.0206	-0.0531
	(0.0520)	(0.0512)	(0.0494)	(0.0465)	(0.0477)	(0.0494)
Year FE	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y
Non-interacted treatments	Y	Y	Y	Y	Y	Y
Diff. reaction if high st.cap.	Y	Y	Y	Y	Y	Y
Military Regimes	Y	Y	Y	Y	Y	Y
Democracy	Y	Y	Y	Y	Y	Y
GDP per capita	Y	Y	Y	Y	Y	Y
External Debt	N	N	N	N	N	N
Exports	N	N	N	N	N	N
Openness to Trade	N	N	N	N	N	N
Interdependence with Mexico	N	N	N	N	N	N
Observations	366	422	478	534	590	646
R-squared	0.158	0.162	0.166	0.164	0.149	0.154
Number of countries	56	56	56	56	56	56

Notes: All models are estimated using OLS. The dependent variable in all columns is Bureaucratic Quality. All models include country fixed effects and year fixed effects. Contagion x Settler Mortality refers to the interaction between Post94, Settler Mortality and Closeness to Mexico. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 5: Falsification Tests of Other Potential Explanations

VARIABLES	Perceptions Perceived Corruption				Budget Total Government Expenditures			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Contagion x Settler Mortality	0.162	-0.140	-0.154	-0.153	0.738	1.318	1.525	1.855
	(0.109)	(0.175)	(0.174)	(0.174)	(0.695)	(1.143)	(1.153)	(1.154)
Year FE	Y	Y	Y	Y	Y	Y	Y	Y
Country FE	Y	Y	Y	Y	Y	Y	Y	Y
Non-interacted treatments	Y	Y	Y	Y	Y	Y	Y	Y
Diff. reaction if high st.cap.	N	Y	Y	Y	N	Y	Y	Y
Military Regimes	N	N	Y	Y	N	N	Y	Y
Democracy	N	N	N	Y	N	N	N	Y
GDP per capita	N	N	N	N	N	N	N	N
External Debt	N	N	N	N	N	N	N	N
Exports	N	N	N	N	N	N	N	N
Openness to Trade	N	N	N	N	N	N	N	N
Interdependence with Mexico	N	N	N	N	N	N	N	N
Observations	616	616	616	616	315	315	315	315
R-squared	0.062	0.075	0.084	0.084	0.078	0.086	0.091	0.106
Number of Countries	56	56	56	56	31	31	31	31

Notes: All models are estimated using OLS. The time period included in the sample is restricted to 1987-1998. All models include country fixed effects and year fixed effects. Contagion x Settler Mortality refers to the interaction between Post94, Settler Mortality and Closeness to Mexico. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Correlations between State Capacity/Capital Controls and Bureaucratic Quality

VARIABLES	Capital Controls			Bureaucratic Quality		
	(1)	(2)	(3)	(4)	(5)	(6)
State Capacity Index	-0.0235***	-0.0238***	-0.0188***			
	(0.00376)	(0.00383)	(0.00387)			
Capital Controls				-0.316***	-0.236***	-0.0462
				(0.0679)	(0.0683)	(0.0666)
Country FE	Y	Y	Y	Y	Y	Y
Perfect st.cap. Control	Y	Y	Y	Y	Y	Y
Military Regimes	N	Y	Y	N	Y	Y
Democracy	N	N	Y	N	Y	Y
Population	N	N	Y	N	Y	Y
GDP per capita	N	N	Y	N	Y	Y
Quality of Institutions	N	N	N	N	N	Y
Observations	661	661	661	661	661	661
R-squared	0.112	0.113	0.143	0.018	0.089	0.265
Number of Countries	56	56	56	56	56	56

Notes: All models are estimated using OLS. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Institutions	1,589	2.69	2.24	0	9.5
Bureaucratic Quality	1,589	3.299	1.54	0.2	6
Genetic Closeness to Mexico	1,620	1204	543.2	14.14	1835
Settler Mortality	904	4.69	1.21	2.15	7.99
GDP Per Capita	1,695	7,147	7,079	155	39,873
Population (1,000)	1,695	40,188	137,022	211	1,255,698
Democratic	1,694	0.487	0.499	0	1
Military Rule	1,686	0.05	0.218	0	1