



University of Warwick institutional repository: <http://go.warwick.ac.uk/wrap>

This paper is made available online in accordance with publisher policies. Please scroll down to view the document itself. Please refer to the repository record for this item and our policy information available from the repository home page for further information.

To see the final version of this paper please visit the publisher's website. Access to the published version may require a subscription.

Author(s): Suresh de Mel, David McKenzie and Christopher Woodruff.  
Article Title: Wage Subsidies for Microenterprises  
Year of publication: 2010

Link to published article: <http://dx.doi.org/10.1257/aer.100.2.614>

Publisher statement: © 2010 by the American Economic Association.

## Wage Subsidies for Microenterprises

Suresh de Mel  
Department of Economics  
University of Peradeniya  
Peradeniya, Sri Lanka  
sdemel@pdn.ac.lk

David McKenzie  
Development Research Group  
World Bank  
MSN MC3-307, 1818 H Street N.W.  
Washington, DC 20433  
dmckenzie@worldbank.org  
202 458 9332

Christopher Woodruff (corresponding author)  
Department of Economics  
University of Warwick  
Coventry CV4 7AL UK  
c.woodruff@warwick.ac.uk

Session Title: Field Experiments in Firms  
Session Chair: John Van Reenen  
Discussants: No discussants have been appointed

## Wage Subsidies for Microenterprises

Suresh de Mel, David McKenzie and Christopher Woodruff\*

Wage subsidies have long been used by Governments as part of their active labor market policies to generate employment for the disadvantaged or to sustain employment during downturns. The current global financial crisis has seen such policies return to prominence, with many developed nations using such policies to try and reduce lay-offs. Nicholas Kaldor (1936), P. Richard Layard and Stephen Nickell (1980), and Lawrence Katz (1998) lay out the economic arguments for such a policy, and discuss conditions under which a short-term subsidy might have longer-term effects on employment for the targeted individuals.

One of the arguments made for short-term wage subsidies to disadvantaged groups like the long-term unemployed, ethnic minorities, or youth, is that short-term employment can raise the productivity of this group through their experience of work (Brian Bell, Richard Blundell, and John van Reenen, 1999), and that the subsidies can compensate employers for the risks of taking a chance in hiring such workers (World Bank, 2006).

In the context of developing economy labor markets where half or more of the labor force is employed in enterprises with fewer than 5 employees, similar motivations can be given for making short-term wage subsidies to microenterprise owners to encourage them to make the leap to hiring workers. Owners of microenterprises may be uncertain about their own abilities to hire

---

\* Suresh de Mel, Department of Economics, University of Peradeniya, Peradeniya, Sri Lanka, David McKenzie, Development Research Group, World Bank, 1818 H Street N.W., Washington D.C 20433, dmckenzie@worldbank.org, 202 458 9332. Christopher Woodruff, Department of Economics, University of Warwick, Coventry CV4 7AL, UK. We would like to thank the BNPP Trust Fund, the Knowledge for Change Trust Fund, the National Science Foundation, and the World Bank for their financial support.

workers, uncertain about whether the demand for their output can support an additional worker, or credit constrained and unable to pay for the costs of the initial on-the-job training needed to make workers productive. (Poverty constraints and social norms may limit the ability of workers to take low initial wages to compensate for their low initial productivity). If any of these conditions hold, workers might go unhired even when the marginal productivity of an additional unit of labor in microenterprises is higher than the market wage. In this short paper we describe the implementation and take-up of a randomized experiment in Sri Lanka motivated by these ideas. It is, to our knowledge, the first program to offer wage subsidies to microenterprises, and in the future offers the possibility of measuring the marginal return to labor through “labor drops”, analogous to our previous work with “capital drops” which has found very high returns to capital in Sri Lankan microenterprises (de Mel, McKenzie and Woodruff, 2008).

## I. THE EXPERIMENT

Between March and October 2008, we conducted a door-by-door listing exercise of households in 18 randomly selected neighborhoods of greater Colombo and surroundings, greater Kandy, Galle and Matara, in order to obtain a representative sample of microenterprises. Through this exercise we obtained a sample of 1,534 male-owned microenterprises with fewer than 2 paid employees, of which 845 were randomly selected to be offered a wage subsidy for hiring an employee. In this paper, we focus on the sample of enterprises offered the wage subsidy.

The sample is dominated by owners with no paid or unpaid workers – only 10.7 percent of the sample had a paid worker at baseline, 13.1 percent had an unpaid worker, and 78 percent of firms have neither. Firms are mostly in retail (62 percent) and manufacturing (28 percent), covering a

broad range of sectors typical for the self-employed in developing countries. Examples include grocery stores, fruit stands, tea boutiques, tailors, carpenters, jewelry work, bicycle repair shops, barbers, shoemakers, and other such small-scale operations. The median owner is 36 years old, has 11 years of education, has been operating the business for 6 years, and reports earnings of 11,000 Rupees (approximately \$US100) per month in business profits. 31 percent of the businesses were formally registered with the division secretariat.

In July 2009 these microenterprise owners were visited with a letter from the research project office (signed by the local university-affiliated co-author), explaining the wage subsidy offer. The subsidy would be available from August 1, 2009, and was set at a level of 4,000 Rupees per month for the first six months for a full-time (30 or more hours per week) worker, and at 2,000 Rupees per month for two months after that. The six-month rate was set to be approximately a 50 percent subsidy on the cost of hiring a typical low-wage worker. The subsidy would be paid to the employer, and could be used to hire any new worker aged 16 to 65, provided that they did not live in the same household as the microenterprise owner, and were not the child or parent of the owner. Owners could delay in taking up the subsidy, but were told that the program would end in May 2010, so that they would get the program for less time if they started after October 1, 2009. This offer was also explained in person by the visiting research assistant, and the owners were provided with a phone number and office location they could visit to ask questions about the program. Before the offer was made, a list of current employees and household family members was taken to ensure that these groups were not subsequently presented as the new worker.

Emanuela Galasso, Martin Ravallion and Agustin Salvia (2004) found low take-up among employers of a wage-subsidy program in Argentina because of a requirement that workers be formally registered for social security charges. The vast majority of microenterprises and small firms in Sri Lanka do not register their workers, and so we did not make legal registration of the workers a requirement of the program. This has the advantage of ensuring relevance of the program to the very types of firms that might be reluctant to take a chance on transitioning to employer status. However, the disadvantage is that it is more difficult to verify in an informal firm, without firm or government employment records, that a genuine worker has been hired, and that this worker actually works the hours stated, than would be the case in larger formal firms. We therefore (a) required that we meet and interview the employee before making any payment; (b) conducted spot checks in person, over the phone, and with neighboring businesses to verify that the employee was actually working; and (c) had a formal warning system so that firms where the worker could not be found at the business would receive a warning and then not get paid in that month if subsequent checks did not find the worker working at the business.

## II. WHICH MICROENTERPRISES TAKE-UP WAGE SUBSIDIES

The treatment was actually offered to 803 of the 845 microenterprises – 27 of the firms had closed since the baseline survey and in the remaining cases the business owner could not be found to give them the offer. Between August 1 and November 13, 179 of the firms (22 percent of those offered) have taken-up the program. We use our baseline data to investigate what characteristics of firms and owners predict take-up.

Table 1 presents marginal effects from probit regressions of take-up among the firm owners actually offered the treatment, estimated for the 772 of the 803 firms offered the treatment for which we have full non-missing data. Column 1 considers firm characteristics, column 2 characteristics of the owner, and column 3 combines the two. Column 4 then adds an indicator of whether they answered yes to a hypothetical question posed in 2008: “Would you hire an additional worker for your business if someone else were to pay one third of the wage cost during the first year?”,

Table 1: Determinants of Take-up of a Microenterprise Wage Subsidy

	(1)	(2)	(3)	(4)
Colombo	-0.127*** (0.0454)		-0.0969** (0.0464)	-0.104** (0.0464)
Firm had a paid worker	0.0335 (0.0509)		0.0195 (0.0484)	0.0163 (0.0480)
Firm had an unpaid worker	0.0819* (0.0488)		0.0737 (0.0487)	0.0693 (0.0489)
Firm had above median assets	0.0680** (0.0316)		0.0465 (0.0313)	0.0458 (0.0312)
Education of owner (years)		0.0146** (0.00711)	0.00913 (0.00730)	0.00960 (0.00720)
Business practices: 2nd quartile		0.0801* (0.0473)	0.0627 (0.0475)	0.0657 (0.0476)
Business practices: 3rd quartile		0.114** (0.0539)	0.0750 (0.0536)	0.0755 (0.0536)
Business practices: Top quartile		0.202*** (0.0526)	0.146*** (0.0560)	0.139** (0.0558)
Says would hire additional worker				0.0645** (0.0306)
Number of Observations	772	772	772	772

Notes:

Robust standard errors in parentheses. \*, \*\*, and \*\*\* indicate significantly different from zero at the 10, 5 and 1 percent levels respectively. Dependent variable mean is 0.22.

See text for description of “business practices” variable. All specifications also include a control for whether the baseline survey was taken in April 2008 or October 2008. Also included, but statistically insignificant are dummies for retail and manufacturing, Kandy district, age of firm, and legal registration status as firm characteristics, and the owner’s age, trust, discount rate, and risk-seeking score as owner characteristics.

We see much lower uptake in Colombo than in other cities, even conditional on firm and owner attributes. This may be due to higher wage rates in Colombo—so a given flat rate subsidy is a lower percentage of the market wage—or to greater fears of having to register workers with the labor ministry in the capital city, or to other reasons. Take-up does not vary significantly with firm sector, firm age, or whether the firm is legally registered. We do find some evidence of higher take-up for firms which already had unpaid workers, and for firms with higher than median assets. This is consistent with the idea that it is slightly bigger firms with more capital who are ready to take the step-up to becoming an employer.

Turning to owner characteristics, we see more able business owners are more likely to hire a worker when offered the wage subsidy. We measure a set of business practices utilized by the business owner, such as record-keeping and planning, marketing techniques, inventory control, and costing. These practices are the intended outcomes of the International Labor Organization’s Improve Your Business training program, and so we take more extensive use of these practices as a marker of better business skills. We form quartiles of the total number of practices implemented by the owner, and see that microenterprise owners in the top quartile are 14.6 percentage points more likely to employ a worker under the wage subsidy program than someone in the bottom quartile of business practices. Take-up is also higher for owners with more formal

years of schooling. There is no significant effect of owner age, nor does take-up vary with preference parameters such as risk aversion, the discount rate, or trust in others.

Finally, Column 4 shows that firm owners who said they would hire a worker in a hypothetical question before the program was announced are more likely to take up the program 5-6 months later, even conditional on measureable firm and owner characteristics. This suggests that hiring a worker is not just a spur of the moment decision, but an attitude which exhibits persistence. It also suggests that such hypothetical questions may be useful in gauging demand for such subsidies.

### III. WHO IS HIRED UNDER SUCH A PROGRAM?

We interviewed both the employer and the employee to collect information on how the employer found a worker to hire, the characteristics of the workers hired, the wage paid, and the expectations of the employer and the worker as to how long this employment would last. We summarize here these responses.

Employers relied heavily on personal connections to locate a new worker. Less than 2 percent placed any sort of advertisement at the enterprise or another location to openly advertise the position. The most common methods through which a worker was hired were through the business owner asking friends (36 percent), neighbors (22 percent), or family members (22 percent) for suggestions. In 28 percent of the cases the employer was related to the worker, although in over half of such cases the relationship was a distant one, such as second cousin. In 20 percent of cases, the worker had actually worked for the owner previously, typically as a

casual worker during a peak season. In some cases, the worker had left because of a fall in sales or because they had found another job. It was rare to hire someone the employer hadn't already met – only 15 percent of workers were individuals that the owner did not already know.

The most important qualities that employers said they looked for in choosing the worker were gender—rated as very important by 70 percent of owners— that the worker was someone known to them—rated as very important by 57 percent—and their previous job experience—rated as very important by 41 percent. The majority of employers said the educational qualifications of the worker were unimportant, and that age was only somewhat important.

While all the owners were male, 23 percent of the workers hired were female. One-third of the workers were aged 16 to 24 years, and 13 percent aged 50 or older; the median age was 30. Half of the male workers and half the female workers were married. The median and modal education level of the workers was 11 years (O-levels), the same as the median education level of the employers. Before taking the job many of the employees were in other work: 26 percent were employees in another firm, 25 percent self-employed, 8 percent were casual workers or day laborers, and 3 percent apprentices. In comparison, 33 percent were unemployed, 4 percent were students, and 1 percent were retired. Few of these unemployed individuals had applied for other jobs in the past year, suggesting the wage subsidy is pulling some individuals into the workforce who would otherwise not be working.

The mean (median) *weekly* wage paid to workers hired with this wage subsidy was 2,117 Rupees (1,750 Rupees). Recall that the *monthly* wage subsidy is 4,000 Rupees. One-quarter of firms

report hiring a worker at or below 1,000 Rupees per week, meaning that the subsidy covered the full wage.<sup>1</sup> The median share of the wage covered by the wage subsidy was 57 percent, which is close to our target of covering 50 percent of the wage cost. The results of the experiment show that there is tremendous heterogeneity in the wages offered by microenterprises in hiring employees – the 10<sup>th</sup> percentile of wages of 750 Rupees per week is less than one-fifth of the 4000 Rupee per week offered at the 90<sup>th</sup> percentile.

Given this heterogeneity, one could consider instead subsidizing a fraction of the wage bill. However, this would require even more effort in monitoring, as employers would then have incentives to overstate wages, hours or both. Instead, if the concern is that a flat rate subsidy may bias firms towards creating low-skilled employment opportunities only, governments considering such a program could set different subsidies according to observable and verifiable characteristics of the firms and occupations that are associated with them paying higher wages.

#### IV. CONCLUSIONS

A wage subsidy equivalent to approximately half the cost of hiring a low-skilled worker induced 22 percent of eligible microenterprise owners to hire a worker. Among those hiring workers, 64 percent of the owners say this is the first paid employee they have ever hired; 86 percent tell us they expect to continue to employ the worker after the subsidy is removed. The median enterprise expects sales to increase by 25 percent as a result of hiring the employee, If these expectations are borne out, they suggest that a short term wage subsidy could have long-term

---

<sup>1</sup> We asked both employees and employers for weekly wages. The data are very highly correlated (0.84) and match exactly just over half the time. But the correlation in responses is much lower (.16) when the employer reports wages of 1000 Rupees per week or less. So the subsidy may not exceed the wage even in some of the cases where the employer data suggest that it does.

effects on enterprise size. Our ongoing work will follow these firms and compare their employment, sales, and profits to a control group. It will also try and understand why more firms do not hire workers, when it seems that a number of firms were able to obtain workers for free under our program.

#### REFERENCES:

- Bell, Brian, Richard Blundell and John Van Reenen. 1999. "Getting the Unemployed Back to Work: The Role of Targeted Wage Subsidies", *International Tax and Public Finance* 6: 339-60.
- De Mel, Suresh, David McKenzie and Christopher Woodruff. 2008. "Returns to Capital in Microenterprises: Evidence from a Field Experiment", *Quarterly Journal of Economics* 113(4): 1329-1372.
- Galasso, Emanuela, Martin Ravallion and Agustin Salvia. 2004. "Assisting the Transition from Workfare to Work: A Randomized Experiment", *Industrial and Labor Relations Review*, 58(1): 128-142
- Kaldor, Nicholas. 1936. "Wage Subsidies as a Remedy for Unemployment", *Journal of Political Economy*, 44(6): 721-742
- Katz, Lawrence. 1998. "Wage Subsidies for the Disadvantaged", pp. p21-53 in Richard B. Freeman and Peter Gottschalk (ed.) *Generating Jobs: How to Increase Demand for Low-Skilled Workers*, , Russell Sage Foundation Publications, New York.
- Layard, P. Richard and Stephen Nickell. 1980. "The Case for Subsidising Extra Jobs" *Economic Journal*, 90(357): 51-73
- World Bank. 2006. *World Development Report 2007: Development and the Next Generation*. World Bank, Washington D.C.