

## FIELD EXPERIMENTS IN FIRMS

### Wage Subsidies for Microenterprises

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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 to reduce layoffs. 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 five 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 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 holds, 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 two 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

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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. Thirty-one 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 coauthor), 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 the worker did not live in the same household as the microenterprise owner and was 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 where they could ask questions about the program. Before the offer was made, a list of current employees and household family members was taken to ensure that a member of these groups was 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, 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 (i) required that we meet and interview the employee before making any payment; (ii) conducted spot checks in person, over the phone, and with neighboring businesses to verify that the employee was actually working; and (iii) 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 Accept 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 receive 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, nonmissing 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?”

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

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)
Observations	772	772	772	772

*Notes:* Robust standard errors in parentheses. 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.

\*\*\* Significant at the 1 percent level.

\*\* Significant at the 5 percent level.

\* Significant at the 10 percent level.

median assets. This is consistent with the idea that it is slightly bigger firms with more capital that 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 five or six months later, even conditional on measurable 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 two 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 he 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 work force 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 tenth percentile of wages of 750 rupees per week is less than one-fifth of the 4,000 rupees per week offered at the ninetieth 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 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 effects

<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 (0.16) when the employer reports wages of 1,000 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.

on enterprise size. Our ongoing work will follow these firms and compare their employment, sales, and profits to a control group's. It will also try to understand why more firms do not hire workers, when it seems that a number of firms were able to obtain workers 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(3): 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*, 123(4): 1329–72.
- 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): 128–42.
- Kaldor, Nicholas.** 1936. "Wage Subsidies as a Remedy for Unemployment." *Journal of Political Economy*, 44(6): 721–42
- Katz, Lawrence F.** 1998. "Wage Subsidies for the Disadvantaged." In *Generating Jobs: How to Increase Demand for Less-Skilled Workers*, ed. Richard B. Freeman and Peter Gottschalk, 21–53. New York: Russell Sage Foundation.
- Layard, P. R. G., and S. J. 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.