



Private Enterprise Development in Low-Income Countries

Are Small Firms Labour Constrained? Experimental Evidence from Ghana

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Firms in poor countries are much smaller than firms in rich countries, with the modal firm being a single person, the owner. Meanwhile, youth unemployment and underemployment are widespread. Understanding whether labour market frictions co-exist with capital and managerial skill constraints to limit firm growth is thus quite important. This project studies a program that randomly placed unemployed young people to work as apprentices with small firms in Ghana. Firms that were offered apprentices by the program experienced increases in both firm size and profits over the two years of our study window. These effects vary as a function of worker cognitive ability (unobserved by the firm owner), highlighting the potential role of screening in firms' hiring decisions in our context. This screening interpretation echoes the widespread use of an entry fee mechanism to hire apprentices in our baseline labour market.

Introduction

Two of the most ubiquitous features of economic activity in poor countries are an abundance of very small firms and high rates of youth unemployment. Conventional wisdom argues that small firms face a frictionless market for workers, characterized by a lack of regulation and community networks that limit asymmetric information. On the other side of the market, it is often argued that unemployed young people lack the skills to be productively employed. This project provides evidence to the contrary in the context of novice hiring in small-scale manufacturing and services in Ghana.

Apprenticeship Training in Ghana

Employment in informal sector Ghana is heavily influenced by the apprenticeship system, where over a third of all manufacturing employees are apprentices. Though apprenticeships are not governed by any centralized rules or regulations, the system is characterized by a few widely practiced customs. Most firm owners and their apprentices (or apprentices' families) enter into verbal or written employment and training contracts for a duration that varies from six months to three years, with a median of three years. These agreements generally require apprentices to pay an entry fee to start the apprenticeship, which is typically equivalent to six months' worth of apprentice wages. Weekly or monthly wages, or "chop money", start quite low and increase with seniority. They also vary with firm output and worker productivity.



Figure 1: An Apprentice learns to sew

Apprenticeship training is concentrated in small-scale manufacturing and services, where young people learn a craft, such as masonry, carpentry, or garment-making. Training often includes basic literacy and numeracy as well as craft skills, and apprentices begin working on actual customer orders almost immediately. Upon completion, apprentices transition to higher-paid wage worker roles within their training firms, or move into wage or self-employment elsewhere.



What barrier to growth does the apprenticeship institution address?

We began our study with a series of informal interviews with small firm owners in Accra and in rural areas around the country. These discussions highlighted several key features of the labour market for apprentices. First, small firm owners want to hire more high quality apprentices and consider them profitable inputs in their businesses. Secondly, difficulty finding high quality apprentices and the risk associated with hiring low quality apprentices are widely cited as reasons to avoid hiring at all. Third, the entry fee required to begin an apprenticeship is nearly universally motivated by a desire to force apprentices to signal investment in the apprenticeship, and willingness and ability to learn. The most common colloquialism is that firm owners are looking for apprentices who are “serious”, which in this context implies some combination of capability and motivation. Together with a series of questions built into quantitative firm-level surveys, these insights imply that many firm owners have a desire to grow their businesses by hiring employees, but are apprehensive of the risk and cost associated with hiring.

The entry fee mechanism in this context allows potential employees to “self-select”. Those who are willing to pay the entry fee foresee aptitude in their chosen craft, and the associated wages and success to compensate for their initial investment. This sophisticated mechanism is inefficient, however, in a world in which many young people with aptitude cannot afford or debt finance the entry fee.

Experimental Program

The program we study is a national-scale government-initiated and -implemented worker placement program, which recruited unemployed young people interested in apprenticeships and placed them with firms interested in hiring apprentices through the program. It included no subsidy to firms (or workers) beyond in-kind recruitment services, and wages paid by firms to apprentices were equivalent on average to those paid to non-program apprentices within sample firms. Unemployed young people provided lists of firms with which they were willing and able to work and train, from a set of interested firms, and were then randomly assigned to one of the firms on the list. Firms agreed to train any apprentice identified through the program, and faced a random number of assigned program apprentices (typically zero, one, or two), conditional on apprentice interest. We interpret the intervention primarily as providing firms with a non-monetary screening mechanism to identify high-quality workers: self-selection hoops for potential employees to jump through that do not require a fee payment. In our empirical setting, workers pay this “sweat equity” entry fee by attending several meetings, interviews, and surveys, and continuing to show interest in the apprenticeship despite a long lag in program roll-out.

Findings

The study finds, first, that firms in the sample hired program apprentices and continued to employ many of them throughout the two-year study window (**Figure 2, Panel A**). Firms that were assigned one or more apprentices also did not shift away from other hiring, but rather saw large and approximately linearly increasing firm size relative to firms assigned zero apprentices (**Figure 2, Panel B**). Note that at baseline in 2013, larger firms were more attractive to apprentices (as seen in **Figure 2, Panel B**); however, our main estimation controls for these raw differentials by controlling directly for the firms with which apprentices were willing and able to work and train.

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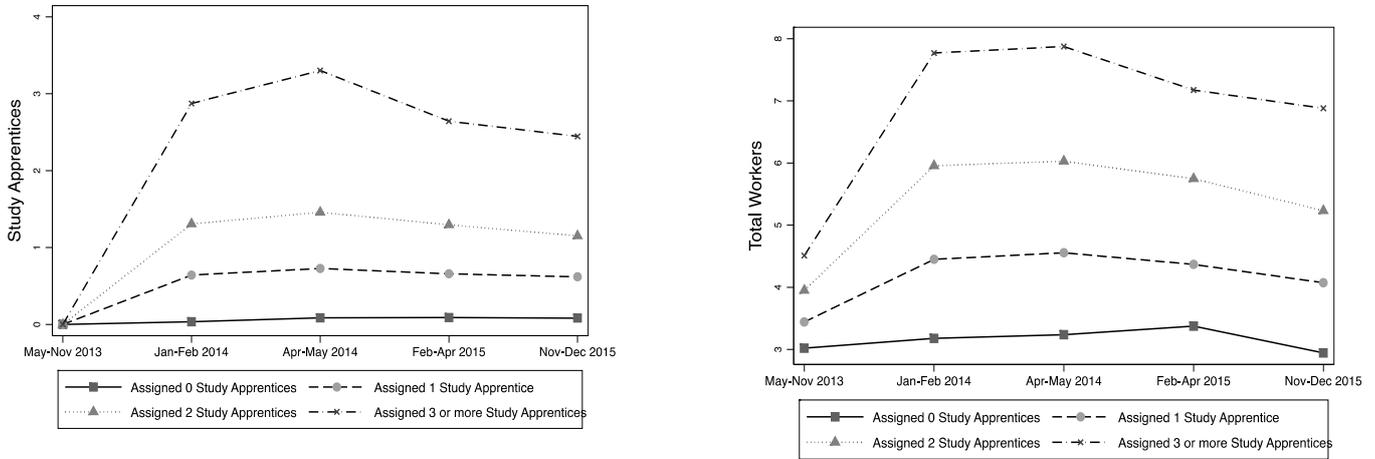


Figure 2: Hiring and Total Firm Size

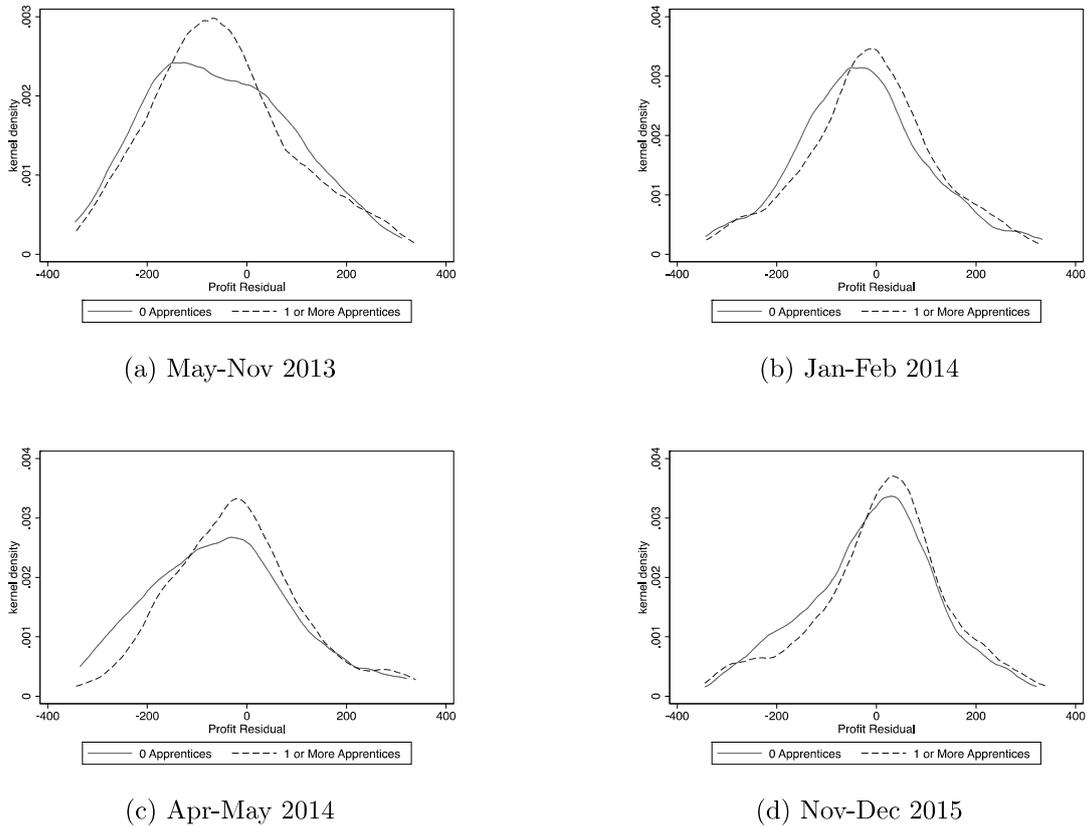


Figure 3: Monthly profits controlling for apprentice interest

Firms assigned one or more apprentices also experienced increases in profits. **Figure 3** shows density of profit residuals (after controlling for non-random apprentice interest). Firms randomly assigned one or more apprentices are more profitable in each of the four follow up periods.

Finally, the study finds that conditional on non-random apprentice interest, firms assigned apprentices who scored higher on a series of baseline cognitive tests administered by the study (here higher is defined as above the 25th percentile) experience larger profit gains than firms assigned apprentices who scored lower on baseline cognitive measures. **Figure 4** presents these raw results for the subsample of firms assigned only high or only low ability apprentices, using a cognitive index which includes



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apprentice performance at baseline on a test of memory, a vocabulary test, a math test, and a test of abstract cognitive ability. Though **Figure 4** presents raw results, our econometric estimation results, as above, control directly for the firms with which apprentices were willing and able to work and train.

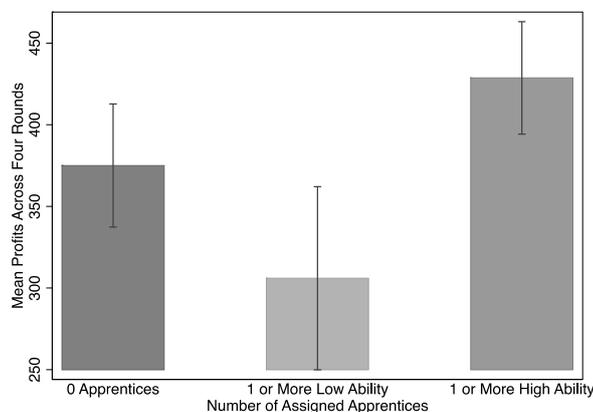


Figure 4: Monthly Profits by Apprentice Cognitive Ability

What do we learn?

Firm hiring behaviour and profit effects taken together provide evidence of a labour market friction limiting employment in this context. High ability, credit-constrained, unemployed young people can be profitably employed as apprentices, but these employment relationships were not happening in the absence of intervention. We characterize this friction as a screening cost at the time of hiring, using evidence that the benefit of the

program was differentially large for firms that were randomly assigned one or more higher ability apprentices, conditional on non-random apprentice interest. This speaks to the limited observable signals about a potential employee's ability in our setting. Coupled with credit constraints among unemployed young people interested in working as apprentices, this creates a market failure that limits employment in the absence of intervention.

Moving Forward...

Does this apply in other contexts?

This study provides evidence of a labour market friction in the context of apprenticeships in Ghana, implying that in some settings firm size and employment are constrained by hiring costs that may include screening, training costs, and search. It further documents that unemployed young people can be profitably employed, and that there is substantial (largely unobservable) heterogeneity in their productivity. Our interpretation is probably best suited to labour markets for novice hiring, where ability to learn is not easily demonstrable. Understanding in what other settings this may apply is an important area for future research.

How can policymakers bolster labour market institutions?

The findings of this study suggest that policymakers in Ghana and other low-income countries may be able to create or improve labour market institutions focused on job search, job matching, and credentialing as a means to support firm growth and address youth unemployment. Broader understanding of the policy options available and their efficacy is left for future research.