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Misallocation, Property Rights, and Access to Finance

Evidence from within and across Africa

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A number of recent studies argue that misallocation of resources across firms is a prime cause of underdevelopment. Standard theory implies that if capital markets function well, at each firm the “marginal product of capital” (the extra output produced by an additional unit of capital) should equal the market interest rate. This is because the interest rate is the cost of acquiring funds to invest. If extra capital can generate a higher return (more output per unit of added capital) than the cost of funds, the firm should add capital, which moves the return downward toward the interest rate. Likewise, if the interest rate exceeds the return from more capital, the firm should disinvest capital, which raises the return on its remaining capital.

Thus, when the marginal return from capital and the interest rate differ, the firm is not making an efficient choice about how much capital to utilize.

A key implication is that if firms borrow at different interest rates, they cannot all have adjusted their capital investments so that the marginal return equals this rate. This might reflect differential access to informal finance or differences in political connections. Capital is there-

fore likely to be misallocated across firms.

Alfaro, Charlton, and Kanczuk (2008); Banerjee and Duflo (2004); Bartelsman, Haltiwanger, and Scarpetta (2009); Hsieh and Klenow (2009); and Restuccia and Rogerson (2008) provide evidence of capital misallocation in different countries and show that this can explain up to 60 percent of the aggregate differences in productivity between poor and rich countries.

On the basis of this framework, we ask two questions: what is the extent of capital misallocation within African countries, and why does misallocation vary across these countries? We quantify capital misallocation across manufacturing establishments within 10 African countries in 2005 and 2006 using establishment-level data from the World Bank Productivity and Investment Climate Survey. This is a unique survey undertaken as part of a major World Bank initiative between 1999 and 2007 in 80 developed and developing countries around the world.

The main purpose of the survey is to identify obstacles to firm performance and growth; hence the survey not only asks questions on firm characteristics and outcomes but also on the perceived severity of obstacles such as

crime, infrastructure, and financing constraints. Having firms' own perceptions of financing constraints is a big advantage because much of the literature infers financing constraints from companies' financial statements using various modeling and econometric techniques; this approach requires strong assumptions that may not hold in the data, thus biasing results.

This data set has been used by, among others, Beck, Demirgüç-Kunt, Laeven, and Maksimovic (2006) and Beck, Demirgüç-Kunt, and Maksimovic (2005), who show that self-perceived constraints actually bind and hurt firm growth. Our data set has information on small and large, as well as listed and private firms, which allows us to control for some important firm characteristics. To the best of our knowledge, no systematic study calculates the extent of misallocation and its determinants for Africa using comparable firm-level data.

The existing literature uses various approaches to calculate the extent of capital misallocation across firms within a country. As stated above, one advantage of our data set is that we can compare the interest rates firms are paying with market interest rates. This is our starting point because we have data on the interest rates each firm pays on loans. We show that many firms borrow at rates up to 30–40 percent, which suggests that firms have even higher marginal returns to capital.

We calculate capital productivity for each firm using firm-level output and capital stocks under plausible assumptions about the production function (the relation between input used and output produced). Doing so reveals that the distribution of capital productivity varies considerably within most African countries. This indicates that capital is inefficiently allocated—a fact that cannot be derived from country-level aggregate figures. We also calculate a measure of misallocation suggested by Hsieh and Klenow (2009), which again indicates imperfect capital and/or labor allocation.

As a check on our approach, we compare the statistics calculated for African countries to corresponding statistics calculated for a selection of non-African countries at different levels of development; namely, Germany, Ireland, Spain, South Korea, and India. This comparison reveals that the variation across firms of our misallocation measures is much larger in Africa. For example, the variability of the interest rate is 2–5 times higher in African countries than in European countries, and the variability of capital productivity is about 40 percent higher in Afri-

can countries (and in India) than in European countries. More than 50 percent of firms in Africa report that access to finance is a severe obstacle, while very few firms in Europe report this as a severe obstacle.

We show that firms with less access to finance have higher capital productivity. Small firms have lower capital productivity, conditional on access to finance and other variables, which suggests that higher efficiency could be attained by allocating more capital to large firms. Comparing a firm where access to finance is no obstacle to a firm where access to finance is a severe obstacle, capital productivity is 45 percent higher, revealing that obstacles to credit have substantial real effects.

Having calculated and confirmed the extent of misallocation, we seek to explain firm-level differences in the return to capital within countries and the variation in misallocation across countries. We find that across countries, misallocation is lower when property rights are stronger, where we measure property rights using expropriation risk and investment profile variables from the International Country Risk Guide. These variables help explain the variation in misallocation across African countries, consistent with the patterns found by Johnson, McMillan, and Woodruff (2002) for former communist countries.

Hence, we contribute to the recent debate on “what works in Africa?” in the following sense. Once we calculate the extent of misallocation using different methodologies, we can explain the determinants of this misallocation at the firm level and relate country variation in misallocation to the broader policy, investment, and business environments. This, in turn, helps explain why certain countries have better allocation of capital across firms. That is, we can identify relatively successful countries, such as South Africa and Botswana, relative to unsuccessful ones, such as Ghana and Nigeria, and suggest reasons behind their success. The results point to the importance of strong property rights and a well functioning financial system for the efficient allocation of capital.

NOTE

This Research Brief is based on Sebnem Kalemli-Ozcan and Sorensen (2014), <http://papers.nber.org/books/afri14-3>.

All works cited are provided therein.