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The Credit Crisis of Emerging Market Firms*

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Access to credit by small and medium sized business has been a topic of concern in the United States since the financial meltdown of 2008-2009. However, this topic has been of interest in developing countries for much longer. According to the World Bank, 45% of firms in Sub-Saharan Africa identified 'access to credit' as their main constraint, compared to only 13% of firms in OECD countries. But does a lack of access to credit at the firm level actually affect firm performance once all other business environment issues are taken into account—i.e., is it *credit* that really matters?

A well-functioning financial system has long been regarded as a key element for economic development. A large body of literature, dating as far back as Schumpeter (1911), emphasizes the positive influence of a country's financial sector on the level and rate of growth of its per capita income. From this literature we know and understand why a developed financial sector is crucial for macroeconomic growth. The main argument is that the financial service of reallocating savings efficiently among the most productive projects without substantial risk of loss through moral hazard, adverse selection, or transaction costs is an essential catalyst of economic growth.

Whereas the general value of financial services in the overall economy is well recognized, the connection between a firm's access to credit and its bottom line profits is mostly unknown. In particular, emerging markets have lacked reliable firm-level data on which to assess the issue. The presence of external credit in a firm's financial structure depends not only on factors such as the entrepreneur's preferences but also on the financing options that are available to him or her. The availability of external financing to a firm depends on the overall business, policy, and institutional environment which, among other things, support the enforceability and liquidity of financial contracts. Controlling for the overall environment, how much do countries differ in the extent and pattern of finance used by firms, and does this affect the extent to which firms there can succeed and grow?

Recently available data enable an analysis of the impact of credit on an individual firm's bottom line and we can now answer questions such as: Does access to formal banking services result in higher sales? Does access to credit lines translate into higher profits? Do certain formal financial services matter more for firms, in general, or for those situated in different regions of the world?

Is Access to Credit an Obstacle for Firms in Emerging Markets?

Even though in the last two decades micro-credit lending in developing countries has surged and has made credit available to millions of people and small enterprises, access to financing still is a major obstacle for growth and success of firms in emerging markets. The World Bank surveys firms

* This brief summarizes joint work with Daniel Hermansson "The Real Credit Crisis? An analysis of the effects of credit constraints on the performance of emerging market firms."

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in more than one hundred developing countries to capture their perceptions of the biggest obstacles to enterprise growth, the relative importance of various constraints to employment and productivity, and the effects of a country's business environment on its international competitiveness. According to these surveys, access to finance ranks at the top of firms' perceptions of the constraints on their growth, ahead of political instability, macroeconomic instability, and corruption. Table 1 summarizes the main obstacles that firms in emerging markets encounter in their daily operations.

Table 1 – Biggest Obstacles to Growth

World Bank Survey Question - You have indicated that several obstacles affect the operation and growth of this establishment. What are the three that you think are currently the biggest problems, beginning with the worst of all three.

OBSTACLES	Obstacle 1 (%)	Obstacle 2 (%)	Obstacle 3 (%)
Electricity	17.04	7.82	5.7
Access to finance	13.88	9.61	8.81
Competitors in the informal sector	13.53	9.33	10.17
Tax rates	8.86	10.7	9.19
Political instability	7.3	6.45	6.03
Crime, theft and disorder	6.06	6.82	6.51
Macroeconomic instability	6.05	8.48	8.31
Corruption	5.67	7.4	7.63

Source: Own calculations using World Bank's Enterprise Survey Data. The percentages do not add up to 100% because some of the smaller obstacles have been omitted from the table because of space constraints.

Although firms identify access to credit as a major constraint, this does not necessarily mean that those firms that do have access to credit perform better. Therefore a closer analysis is needed to determine this relationship.

How Does Access to Credit Affect a Firm's Bottom Line?

To understand how credit is related to a firm's performance it is useful to write a simple model. The performance of firm k operating in industry i, during year t depends on

$$r_{kit} = \alpha_i + \gamma_t + \lambda_c + \textit{Financial Services} + \chi + \varepsilon_{kit}$$

the industry-specific effects, α_i; year-specific effects, γ_t ; the country-specific effects, λ_c ; and on whether the firm has access to financial services. X is a vector of variables that control for the heterogeneity of firms and includes the size, age, and productivity of the firm. ε is an error term that captures any residual effect not accounted for by other variables in the model.

Using World Bank Enterprise Survey data and econometric regressions, it is possible to estimate the effect of financial services on the performance of a firm. By incorporating different financial services in the regressions we can learn not only about the impact that these financial services have on a firm but also we can learn how the level of financial development and sophistication in a region and/or country affects the performance of its firms.

Our results indicate that access to finance indeed is positively related to firms' sales and profits. A firm that has access to the simplest level of financial sophistication—a checking or savings account—has on average 30% higher sales than a firm that does not. Having access to a credit line or loan is not sufficient to determine a firm's performance—the actual size of the loan is related to the performance of the firm. We find that a firm with a 10% bigger loan will on average generate 0.2% higher sales and profit in that same year. This implies that a firm with access to an extra dollar in loans will on average generate an extra 0.63 dollars in sales and 0.5 dollars in profit in that year.

These results are comforting in the sense that firms that have access to financial services do seem to perform better than those that do not. However, at the same time they raise some red flags about the sustainability of the relationship between the financial and enterprise sectors, which unfortunately, given the characteristics of the dataset, cannot be resolved.[1] First, the average firm generates only enough extra profit in one year to cover a loan that is less than 2% of total sales, whereas the average loan is around 5% of sales. A sustainable relationship would, at minimum, require that loans have a time-to-maturity of more than one year—although based on the averages, the loan maturity would only have to be two years. Second, we find a negative relationship between credit and return-on-assets. It is likely that firms use their lines of credit or loans to buy machinery, equipment, and land, thus raising assets; but monitoring the firm at that same point in time, no future higher profits associated with having access to credit to buy those assets would be observed.

How Do Firms' Performance Differ by Regions?

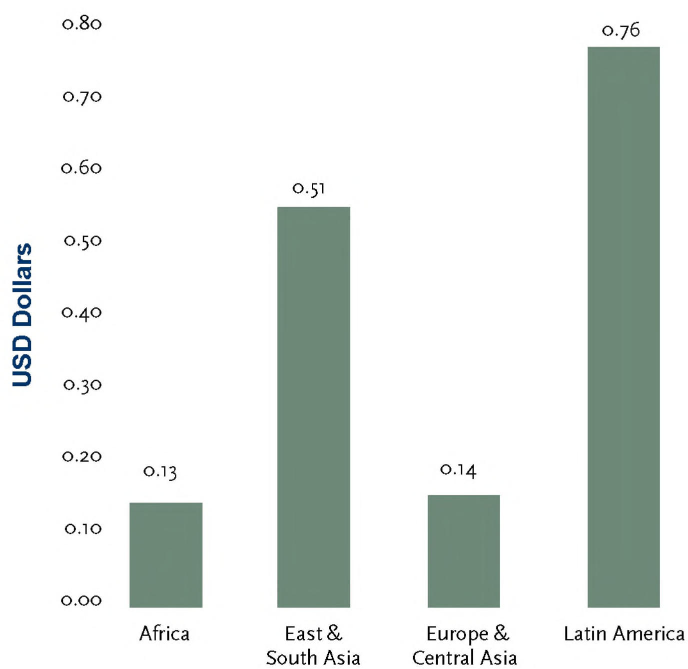
As mentioned above, the availability of external financing to a firm depends not only on the firm's situation, but on the overall business, policy, and institutional environment. As regions and countries differ in their financial contracting environments, so too do the depth and pattern of firm financing. This is why we take a closer look at how financial services differ by regions.

We find that almost all firms in East and South Asia, and in Europe and Central Asia have access to checking and savings accounts; therefore, the difference in profits is not statistically significant for firms with access to these services and those without. On the other hand, in Africa and Latin America there is a statistically significant difference in profits of over 50% for firms with access to these services compared to those without. The big differences in profits between those firms with and without checking accounts suggest that there is a lack of banking infrastructure or excessive requirements to open these types of accounts in these regions. It seems that firms that are located away from the major financial centers in these countries lack these basic financial services, which substantially diminishes their growth potential.

Access to banking services is one aspect of profit performance. Access to actual credit is another.

Figure 1 displays the impact on profits of the average firm of one extra dollar in loans comparing each region. It is clear that the rate of return of a loan, in terms of a firm's profits if it is located in Africa and Europe and Central Asia are substantially lower at thirteen and fourteen cents to the dollar respectively. Research points to differing reasons behind these low rates of return on loans: In the case of Europe and Central Asia, firm profits and loans are more homogeneous; therefore, the effect of a loan *per se* on a firm is likely to be low. In the case of Africa, the low rate of return on loans is probably due to two main factors: A lack of efficient credit screening methods means that non-creditworthy firms probably receive loans, which means that resources are not being disbursed to the most efficient and capable firms and projects, hence the low rate of return of loans. Second, corruption and red tape in the process of obtaining a loan can also reduce the rate of return of loans on profits. Other constraints such as lack of

Figure 1 – Rate of Return on Profits on One Extra Dollar of Loans



Source: Own calculations using World Bank's Enterprise Survey Data.

1. Our dataset does not include information on the duration or interest charged on loans, and is only a snapshot in time. So we cannot tell whether the time-to-maturity of the loan matches the years of extra profitability. In addition, with only a snapshot in time, we cannot determine whether the future profits accruing to, say, an equipment purchase is net positive. Both would be important ingredients to a sustainable relationship between financial and enterprise sectors.

infrastructure or political instability will also weigh down the performance of those firms that are able to obtain loans.

In Latin America the high rate of return of loans indicates that loans are made to the most productive firms in the economy; however, it also suggests that there is a need for greater financial inclusion. That is, we observe that the average profit rate of return to loans in all developing countries is around fifty cents to the dollar, whereas the average in Latin America is close to eighty cents to the dollar, which indicates that some potentially profitable loans to firms (yielding between 50 cents and 80 cents) are not made in this region. These firms that meet the average, cross-regional bar for profitability and rate of return to loans which are being excluded in Latin America are probably smaller firms that would benefit the most from additional access to credit. Providing access to credit to these firms could prove to be an important driver for employment, innovation, and growth for Latin America.

Conclusions

This brief summarizes results of a more extensive study that finds that the benefits of financial development that are found at the macro level come from the firm level. Firms that have access to financial services have higher sales and profits than those that do not.

Since firms drive an economy, weaker financial services may condemn a country to a slower growth path. Schumpeter's creative destruction process might not occur in those economies where there is lack of credit to firms. The innovation process in an economy is slowed down, as is the potential for economic growth through expansion. Firms that have access to credit to invest in modern machinery can produce more efficiently, can expand their existing production process to reach economies of scale that both yield higher sales for the firm and also translate into greater economic growth for the country. Our results indeed support this idea.

Moreover, the results presented in this brief are lower-bound estimates of the relationship between credit and firm performance. The sample of firms in this analysis only consists of surviving firms with positive sales. Therefore, the estimations do not capture firms that did not survive due to the lack of credit and/or financial services.

Yet, it is important to remember that as much as a firm's success depends on its access to financial services, these are not a magic potion for development. The presence of financial services and expansion of credit are a key underpinning for thousands of business owners in developing countries. Ultimately however, business success depends as well on the complementary factors of an educated workforce, adequate regulation, a competitive business environment and supportive macroeconomic policies.

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