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Local financial development and firm performance: Evidence from Morocco

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ABSTRACT

Combining data from the Moroccan census of manufacturing enterprises with information from a commune survey, we test whether firm expansion is affected by local financial development. Our findings are consistent with this hypothesis: local bank availability is robustly associated with faster growth for small and medium-size firms in sectors with growth opportunities, with a lower likelihood of firm exit and a higher likelihood of investment. Regarding the channel, the evidence suggests that, over the study period, access to credit was used by pre-existing Moroccan firms to mobilize investment funds, with some evidence that they were partly used towards reducing labor costs.

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1. Introduction

There is now a large empirical literature, going back to King and Levine (1993), showing that a country's financial development matters for firm performance and aggregate growth. What has received less attention is within-country heterogeneity with respect to the availability of financing. Asymmetric information and transaction cost considerations suggest that physical distance between lender and borrower is likely to affect access to finance (e.g. Petersen and Rajan, 2002). Indeed borrowers' actions are harder to observe when lender and borrower are far apart, leading to adverse selection (of potential borrowers) and moral hazard (for current borrowers). These issues are of particular importance in less developed economies, increasing the probability that local financial development matters for firm performance.

This paper tests whether local financial development matters for firm growth in Morocco. To this end we combine data on bank availability at the local level with manufacturing census data over the period 1998 to 2003 to study the effect of bank availability on firm growth, entry, and exit. We find that value added grows faster in fast growing sectors for small and medium-size firms located near a bank, providing evidence for the importance of local financial development for small firm development.

There are only few papers that study the importance of within-country variation in financial development. Jayaratne and Strahan (1996) use cross-state variation in bank regulation within the US to study the link between financial development and growth, mainly over the 1970s and 1980s. Dehejia and Lleras-Muney (2007) exploit state-level variation in banking regulation in the US to study regulation, financial development, and growth over the period 1900–1940. Guiso et al. (2004) investigate the role of financial development in Italy, exploiting variation across regions.

These papers generally confirm the role of financial development at levels below the national level. But they only allow for heterogeneity at a relatively aggregate level – 19 regions in Italy and 50 states in the US – and only cover developed economies.[1] For policy purposes, we need to know whether financial development matters at lower levels of disaggregation as well. This question is particularly relevant for developing countries like Morocco where manufacturing is geographically concentrated and localities differ widely in terms of financial infrastructure. One novel aspect of this paper is that we study financial development at a highly disaggregated level, i.e., that of the *commune* which, in the studied country, corresponds roughly to a city or county elsewhere. Operating at a lower level of spatial aggregation offers the advantage of more variation in bank availability. Input–output linkages are also less likely to matter at such disaggregated level.[2]

[1] In the context of developing countries, a paper by Burgess and Pande (2005) studies household behavior and shows that branch expansion into previously unbanked rural areas of India led to a significant decrease in poverty.

[2] From Moroccan input–ouput tables we know that the share of own industry inputs is low and therefore intra-industry linkages at the local level are likely to be small. Therefore, we are not very concerned that local-level intra-industry linkages are a major source of bias in our analysis, but we cannot rule out a possible bias because of this channel.

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Being a middle income country with a well established manufacturing sector, Morocco is a good place to study the effect of credit constraints on firm growth. Much of the literature to date has focused on developed economies where bank branches are widespread and it is virtually impossible to find a place without a bank. Consequently, the literature has had to rely on bank density as a proxy for access to formal credit. Yet even in low bank density areas, there always is at least one bank in which a small entrepreneur can secure a loan. Bank density is thus more an indicator of ease of access rather than access per se. Morocco is different in the sense that there are many communes without bank. This is because much of the population, being poor, does not rely on bank services. Hence fewer bank branches are needed to collect deposits and there are many places without a bank. Yet small entrepreneurs, like much of the population, are not particularly wealthy and need external funds to grow beyond what retained earnings allow. Morocco is therefore much more suitable to test whether lack of access to formal credit is an impediment on firm growth, than the countries that have been studied to date: going from no bank at all to having at least one bank branch should make a big difference for a small firm to access formal credit, and this precisely is what we find.

There is considerable difficulty in providing rigorous evidence of a causal link between access to finance and firm performance. Any firm-level correlation between firm performance and access to finance is subject to omitted variable bias or reverse causation since banks are expected to lend to firms with high performance and prospects. As a first step in dealing with this problem, we use local bank availability measured in an earlier *commune* survey as proxy for the individual firm's access to finance. However, banks may locate in places that are expected to grow faster – and hence where firms should perform better. Consequently it is also difficult to ascribe causal interpretation to a correlation between firm performance and local bank availability. Our approach to deal with these endogeneity concerns is based on Rajan and Zingales (1998), the key advantage of this approach is that – in our case – it allows us to control for location-specific growth trends, the expectation of which may have influenced bank placement.

The approach in Rajan and Zingales (1998) is based on the assumption that, because of structural/technological reasons, there is variation across sectors in how much firms in a sector have to rely on external funds. Subsequent work by Fisman and Love (2007) provides a reinterpretation of the original findings by Rajan and Zingales (1998). Fisman and Love (2007) argue that the test by Rajan and Zingales (1998) is implicitly a test about whether financial development facilitates firms' investment in the presence of growth opportunities. Keeping production unchanged only requires replacement investment, which can typically be financed out of retained earnings. In contrast, if there are opportunities for growth, firms need capital for expansion purposes. If funds cannot be found rapidly, opportunities will be seized by others. It follows that access to external finance is most critical for firms that face growth opportunities.

In this paper, we identify the effect of local bank branch availability by exploiting within-country variation to follow an approach similar to that suggested by Fisman and Love (2007) for cross-country data. Our approach also differs in that we use firm-level data, while previous work has used sector-level data. By using firm-level data we estimate growth opportunities in a sector. The key assumption is that large firms are less likely to be financially constrained, and therefore are more able to take advantage of growth opportunities in their sector. Under this assumption, the observed growth of large firms is a reasonable proxy for growth opportunities in a sector. See Guiso et al. (2004) for a similar assumption, which is based on findings by Berger et al. (2005) and Petersen and Rajan (2002).

Focusing on small and medium-size firms, we find that value added grows faster in fast growing sectors for firms located in a *commune* with one or more bank branches. This result is robust to different choices of the cut-off point for large firms. Similar findings are obtained if we use the growth of foreign-owned firms instead of large firms to proxy for growth opportunities. In our data, 1998 to 2003 is a period of slow growth for the main manufacturing sectors of Morocco, which are textile, garments, and leather goods. We find that pre-existing small and medium firms located in a commune with banks invest more in physical capital. They also increase output per worker and reduce labor costs per unit of output. The latter findings suggest that, during the study period, outside funds were used by existing firms to finance labor-saving investment.

When we aggregate data at the sectoral level in each commune, we find that communes with a bank witness more growth in expanding sectors, with more firm entry and less exit. There is more growth not only in value added, but also in aggregate output and employment. These findings are robust to changes in the method used to measure sectoral growth potential. Taken together, these results confirm the importance of access to finance for firm growth, but also demonstrate that only looking at panels of pre-existing firms misses an important part of the effect of credit access on aggregate growth, namely the effect on firm entry and exit.

The paper is organized as follows. We begin in Section 2 by describing the testing strategy used in the empirical analysis. The available data is presented in Section 3 where we also present descriptive statistics that set the stage for the subsequent econometric analysis. Empirical results for pre-existing firms are presented in Section 4 while in Section 5 we present econometric results at the district level not only for firm growth but also for entry and exit.

2. Testing strategy

The key stumbling block when studying the effect of local financial development on firm growth is the possible endogenous placement of banks. To deal with this endogeneity issue, we follow an estimation strategy which is similar in spirit to the ones used by Rajan and Zingales (1998) and Fisman and Love (2007).

The idea behind the testing strategy is the following. Suppose we can identify firms that are a priori less financially constrained and are therefore more likely to be able to react to growth opportunites that arise. In our preferred setup, these will be large firms, known to have easier access to credit (evidence for this in the context of Morocco is provided in Fafchamps and El Hamine, 2005). Among the possible theoretical reasons for larger firms' better access to external financing are, for example, information issues: It is less costly for banks to obtain reliable and/or independent information about larger firms' income statements or balance sheets, because "information about small businesses is thought to be 'soft,' and has to be collected by lenders over time through relationships with firms" (Petersen and Rajan, 2002, page 2533). Larger firms are more likely to have some prior relationship with banks (see, for example, the model in Berger et al., 2005). In addition, even abstracting from the information issues, bank transaction costs of lending to larger firms will likely be smaller as a percentage of amounts borrowed, simply because of economies of scale. Large firms are also more likely to draw financing from a broad geographical area. Consequently, for them the local availability of bank agencies is expected to be less important.

Alternatively, a priori less financially constrained firms can be firms owned by residents of countries with more developed financial institutions, and which for that reason have easier access to external finance. Yet another possibility is that firms that have made the effort of obtaining a corporate legal status may signal higher ability and thus may have easier access to bank credit. This issue is studied in detail by Quinn (2009) who finds that this is indeed the case for Morocco. For this paper, we focus primarily on firm size as indicator of access to credit, but we verify the robustness of our results with alternative proxies of access to credit.

Using data from less constrained firms, we estimate, for each sector, the average growth of value added in those firms over a time interval

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