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Financial Frictions and the Rule of Law

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Understanding the causes of cross-country income differences is a fundamental question in the macrodevelopment literature. Recent work has emphasized that the allocation of resources across heterogeneous establishments is important for understanding cross-country productivity differences. What are the frictions, policies, and institutions that create factor misallocation and hence reduce aggregate productivity in poor countries? We focus on two institutions that are relevant for business operation in poor countries: financial market development affecting access to credit, and the rule of law affecting the potential for crime. These institutions create idiosyncratic effects across establishments because heterogeneous producers are affected differently. We evaluate the quantitative relevance of institutional differences in financial development and the rule of law in accounting for resource misallocation and aggregate income differences across countries.

Our focus on the rule of law and financial development as key institutional features is motivated by their importance

for development as highlighted across separate strands in the literature. The rule of law and financial development are closely linked to crime and access to credit, two highly relevant distortions in developing countries. While the importance of access to finance is well documented in the literature, less well known is the prevalence of establishment-level crime across countries. We document that crime is a prevalent and severe obstacle to business operation in developing countries, at least as prevalent as the lack of access to finance across a host of countries in several subcontinents. For instance, using data from the World Bank Enterprise Surveys (WBES), we find that in South America 34 percent of establishments report crime as a major obstacle to business operation, whereas 23 percent of establishments report access to finance as a major obstacle. The corresponding percentage of establishments in Africa reporting crime and finance as major obstacles to business operation are 26 and 41 percent. To provide context, in a developed country such as Germany, less than 5 percent of establishments report crime as a major obstacle to business operation and 15 percent report access to finance as a major obstacle.

To study the importance of institutional differences in the rule of law and financial development, we consider a unified framework whereby differences in the rule of law affect the potential for crime at the establishment level and differences in financial market development restrict establishment access to credit. Individuals differ along entrepreneurial productivity and asset holdings, and choose either to operate an establishment as an entrepreneur or supply labor as a worker. Two market imperfections are central to our analysis. First, economies differ along financial market development lines; this is modeled as a collateral constraint that restricts access to finance and is proportional to entrepreneur asset holdings. Entrepreneurs in less developed financial markets face greater financial frictions stemming from their limited ability to borrow capital. Second, economies differ in the strength of the rule of law, which affects the potential for crime. We model crime as the proportion of capital that is expropriated from an entrepreneur postproduction, an outcome determined within the model. The potential for crime is inversely related to the rule of law and how much protection an entrepreneur is able to purchase. Differences in the rule of law and financial market development affect occupational choices and the scale operation of entrepreneurs, generating effects on aggregate productivity and output. Moreover, these institutions have the potential to amplify the effects arising from crime or access to finance individually. Our goal is to quantify these effects and assess their implications for cross-country income differences.

We discipline the quantitative analysis using the WBES dataset, which contains information on crime and external finance at the establishment level. The dataset contains detailed information related to theft, robbery, vandalism, and arson on the establishment's premises, which is our notion of crime. For financial market development we use data on whether an establishment is able to obtain a loan and whether it is financed through internal or external sources. We calibrate the model to micro- and macro moments from Colombia where crime and access to finance are equally important obstacles to business operation.

We show that the model can broadly capture the disaggregate patterns of crime, protection, and external finance across establishments in Colombia. In addition, we provide evidence that the model generates reasonable quantitative predictions for these variables in institutional settings that differ from those in Colombia, spanning a portion of the variation in institutional development across countries. For example, the higher rule of law in China and India in the model compared to Colombia implies that the share of crime

and protection is much more uniform across establishments than in Colombia, a pattern that is broadly consistent with the microdata for these countries. The model with lower levels of institutional development than that of Colombia (such as would be found in Guatemala and Mozambique) implies that the cross-establishment profile of crime and protection is steeper, consistent with the implications of the microdata for these countries. The evidence suggests that our quantitative framework provides a reasonable setting in which to evaluate the aggregate implications of institutional development and the relative merits of institutional reform.

Our main findings are as follows. The long-term effects of crime and access to finance are quantitatively important. The difference in institutional development between Colombia and the undistorted economy lowers aggregate output by close to 30 percent in Colombia, lowers total factor productivity by close to 20 percent, and lowers consumption by over 30 percent. In an economy with the weakest level of institutional development, as implied by the data in our sample of countries, aggregate output and consumption is about 50 percent lower than in the undistorted economy. We also assess the relative importance of crime and financial frictions in generating these effects. Crime lowers aggregate output by 3 percent in Colombia relative to the undistorted economy—a substantial effect considering that the aggregate losses from crime are only 0.2 percent of output in Colombia—and financial frictions lower output by 20 percent. Their joint effect exceeds the sum of their individual effects, implying a substantial amplification on output. Crime and finance account for about 10 and 70 percent of the total output losses, respectively, while the remaining 20 percent is from their joint interaction. Moreover, we find that including crime in a standard model of financial frictions is quantitatively important; for instance, including crime generates a doubling of the output losses in the economy with the weakest level of institutional development.

The intuition for the amplification effect is straightforward. In models that feature financial frictions, constrained entrepreneurs can overcome their financing constraint by reinvesting profits in their business and gradually expanding the motive to self-finance. Crime hinders this process. As entrepreneurs invest and expand, they become a bigger target for crime. Constrained entrepreneurs face a tradeoff: gradual expansion is a necessary condition to alleviate financing constraints but doing so exposes them to crime. Resources are lost due to crime or spent on protection, which slows reinvestment and the process of overcoming the financing constraint. Financial frictions, in turn, increase the potential for crime.

This is because financing constraints lower entrepreneur profit, which reduces how much is spent on protection, thus raising the potential for crime. Taken together, financial frictions increase the likelihood of crime, and crime impedes the motive to self-finance, both of which amplify output losses.

NOTE

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