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Luigi Guiso
Paola Sapienza
Luigi Zingales

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ABSTRACT

We study the effects of differences in *local* financial development within an integrated financial market. To do so, we construct a new indicator of financial development by estimating a regional effect on the probability that, ceteris paribus, a household is shut off from the credit market. By using this indicator we find that financial development enhances the probability an individual starts his own business, favors entry, increases competition, and promotes growth of firms. As predicted by theory, these effects are weaker for larger firms, which can more easily raise funds outside of the local area. Overall, the results suggest *local* financial development is an important determinant of the economic success of an area even in an environment where there are no frictions to capital movements.

Luigi Guiso
Ente Per Gli Studi Bancari
Luigi Einaudi
Via Due Macelli 73
00187 Rome
Italy
guiso@tin.it

Paola Sapienza
Kellogg Graduate School
of Management
Finance Department
Northwestern University
2001 Sheridan Road
Evanston, IL 60208-2001
paola_sapienza@kellogg.nwu.edu

Luigi Zingales
University of Chicago
1101 E. 58th Street
Chicago, IL 60637
and NBER and CEPR
luigi.zingales@gsb.uchicago.edu

Since the seminal work of King and Levine (1993), a large body of empirical evidence has shown that a country's level of financial development impacts its ability to grow.[1] Much of this evidence, however, comes from a period when cross-border capital movements were very limited. In the last decade, international capital mobility has exploded. Private capital flow to emerging market economies have grown from close to nothing in the 1970s, to 170 billion in the 1980s, to 1.3 trillions in the 1990s.[2] During the same period the amount of U.S. private equity money invested abroad and the number of foreign firms listed in the United States have experienced a similar growth rate. The phenomenon is so dramatic that many countries have started wondering whether they need a national stock market once their firms can list on NASDAQ.

In light of these dramatic changes, the question of whether national financial institutions and markets still matter for growth once domestic agents have access to foreign markets has become very important from a policy perspective. Unfortunately, it is a difficult question to answer empirically. The integration of national financial markets is so recent that we lack a sufficiently long time series to estimate its impact in the data. At the same time, the pace of integration is so fast that if we were to establish that national financial development mattered for national growth during the last decade, we could not confidently extrapolate this result to the current decade.

To try and assess the relevance for growth of national financial institutions and markets in an increasingly integrated capital market we follow a different approach. Rather than studying the effect of financial development across countries we study the effect of local financial development within a single country, which has being unified, from both a political and a regulatory point of view, for the last 140 years: Italy. The level of integration reached within Italy

[1] See for instance, Jayaratne and Strahan (1996), Rajan and Zingales (1998), Beckert and Harvey (2001) etc. and Levine et al.

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probably represents an upper bound for the level of integration international financial markets can reach. Hence, if we find that local financial development matters for growth within Italy, we can safely conclude national financial development will continue to matter for national growth in the foreseeable future. Of course, the converse is not true. If we do not find the effect within Italy, it is still possible that the effect is present across countries.

Moving the focus from cross-country comparisons to within country analysis exacerbates some of the problems also present in the cross-country analysis. First, how to properly measure financial development. Measures such as stock market capitalization to GDP or stock market turnover to GDP make no sense when applied at the local level. We address this problem by developing a new indicator, which enables us to measure financial development at the local level, relying on the theoretically-sound notion that developed financial markets grant individuals and firms an easier access to external funds.

Second, cross-country comparisons assume that differences in financial development are exogenously determined. This assumption becomes more questionable when we move to within country differences: across countries one can hope that exogenous differences in history, culture, and regulation drive differences in financial development. This is harder to imagine within a country (although not necessarily in Italy, where different regions experienced a very different history). We address this problem by instrumenting our indicator with exogenous factors that in previous work (see Guiso et al., 2001) have been demonstrated to have an impact on financial development.

But moving the focus from cross-country comparisons to within country analysis also provides new opportunities. Rather than restricting our analysis to the macro effect of financial development we also study its micro effects, showing its impact on individual households and firms. We then study how this micro effect translates into a macro effect. If financial development affects economic growth by facilitating the creation of new firms, it must be the

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[2] See for example Friedman (1999).

case that in more financially developed areas it is easier for an individual to become an entrepreneur and, at the same time, these areas should experience a higher rate of new firms' creation. In doing so, we provide additional support to the causal link between finance and growth, showing the mechanisms through which this link operates.

We find strong effects of local financial development. Ceteris paribus an individual's odds of starting a business increases by 33 percent if he moves from the least financially developed region to the most financially developed one. Furthermore, he is able to do so at a younger age. As a result, on average entrepreneurs are 5.6 years younger in the most financially developed region than in the least financially developed one. Similarly, the ratio of new firms to population is three percentage point higher in the most financially developed provinces than in the least financially developed, and the number of existing firms divided by population 50% higher. In more financially developed regions firms exceed the rate of growth that can be financed internally 75% more than in the least financially developed ones. Interestingly, this effect is entirely concentrated among small and medium firms. This is consistent with the view that larger firms can easily raise funds outside of the area they are located in. Finally, in the most financially developed region per capita GDP grows 1% per annum more than in the least financially developed one.

Overall all the evidence suggests that local financial development plays an important role even in a perfectly integrated market. Hence, finance effects are not likely to disappear as the world become more integrated or as Europe becomes unified.

While there is a large literature on financial development and growth across countries (see the excellent survey by Levine (1997)), the only paper we know of that studies within country differences is Jayaratne and Strahan (1996). Using the de-regulation of banking in different states of the United States between 1972 and 1991 as a proxy for a quantum jump in financial development, they show that annual growth rates in a state increased by 0.51 to 1.19 percentage points a year after de-regulation. In a sense, this paper already shows that local

financial development matters. It does that, however, in a financial market that was not perfectly integrated yet. In fact, during their sample period there were still differences in banking regulation across states and interstate branching was restricted. By contrast, none of these two imperfections is present within Italy.

The rest of the paper proceeds as follows. Section 1 describes the data. Section 2 introduces our measure of financial development and discusses its robustness. Section 3 analyzes the effects of financial development on firms' creation and section 4 on firms' and aggregate growth. Section 5 explores whether the impact of local financial development on firm's mark-up and growth differs as a function of the size of the firm, as predicted by theory.

1. Data Description

Data Used

We use three datasets. The first one, containing information about households, is the Survey of Households Income and Wealth (SHIW). This survey, which is conducted by the Bank of Italy on a representative sample of about 8,000 households, collects detailed information on Italian household income, consumption, and wealth as well as their portfolio allocation across financial instruments and their access to formal and informal credit. For each household, the data also contain information on characteristics of the households' head, such as education, age, place of birth, and residence. Table 1a reports the summary statistics for this sample.

An interesting characteristic of this dataset is that each household is asked the following two questions: "During the year did you or a member of the household apply for a loan or a mortgage from a bank or other financial intermediary and was your application turned down?" and "During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?". 1% of the sample households were turned down (i.e. answered yes to the first question), while 2% were discouraged from

borrowing (i.e. answered yes to the second question). We create the variable ``discouraged or turned down'' equals to one if a household responds positively to at least one of the two questions reported above and zero otherwise.

The SHIW also contains information about the profession of different individuals. Table 1b reports summary statistics for the individuals in the SHIW household sample.[3] About 12% of the individuals in the sample were self-employed and the same percentage had received a transfer from their parents.

We collected the second dataset, containing information at the province level on the number of registered firms, their rate of formation, and the incidence of bankruptcy among them, from a yearly edition of "Il Sole 24 Ore", a financial newspaper. These are the newspapers' elaboration of data coming from the Italian Statistical Institute (ISTAT). Table 1c reports summary statistics for these data.

The third dataset contains financial information about firms. It is from *Centrale dei Bilanci* (CB), which provides standardized data on the balance sheets and income statements of about 30,000 Italian non-financial firms. Data, available since 1982, are collected by a consortium of banks interested in pooling information about their clients. A firm is included in the sample if it borrows from at least one of the banks in the consortium. The database is highly representative of the Italian non-financial sector: a recent report (Centrale dei Bilanci (1992)), based on a sample of 12,528 companies drawn from the database (including only the companies continuously present in 1982-90 and with sales in excess of 1 billion Lire in 1990), states that this sample covers 57 percent of the sales reported in national accounting data. In particular, this dataset contains a lot of small (less than 50 employees) and medium (between 50 and 250) firms. Table 1d reports summary statistics for these data.

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[3] Since the sample is stratified by households and not by individuals, when we sample by individuals certain groups are over represented. For example, more people live in the South in this sample than in the household sample, reflecting the fact that the average family size is larger in the south. The age is smaller than the household sample age, because we deliberately truncated age at 60.

2. Our Indicator of Financial Development

Methodology

One of the main roles of the financial system is to transfer funds from agents with a surplus of resources to agents whose investment opportunities exceed their current resources. If we equate the development of a financial system with its degree of efficiency in performing this task, we could measure its development by estimating how well funds are transferred. A good indicator would be the ease with which individuals in need of external funds can access them and the premium they have to pay for these funds. In practice, both these avenues are quite difficult. We do not normally observe when individuals or firms are shut off from the credit market, but only whether they borrow or not. Similarly, we do not normally have information on the rate at which they borrow, let alone the rate at which they should have borrowed in absence of any friction. For all these reasons, the studies of the effects of financial development (e.g., King and Levine (1993), Jayaratne and Strahan (1996), Rajan and Zingales (1998a)) have used alternative measures. An exception is represented by periods of financial crises, where as a proxy for individual access to funds one can use the number of bank failures (e.g., Bernanke, 1983).

Fortunately, the Italian Survey of Households Income and Wealth asks households whether they have been denied credit or have been discouraged from applying. Hence, it contains information on individuals' access to credit even during normal periods, i.e., outside of a banking crisis. Furthermore, unlike the U.S. Consumer Expenditure Survey, the SHIW contains precise information on the location of the respondents. Controlling for individual characteristics, it is possible, thus, to obtain a local indicator of how more likely an individual is to obtain credit in one area of the country, rather than in a different one. This indicator measures how easy it is for an individual to borrow at a local level.

This approach, however, begs the question of what drives differences in financial development across Italian regions. If demand for financial development generates its own

supply, the regions with the best economic prospects might have the most financially developed banking system, biasing the results of our analysis. For this reason, we will instrument our indicator of financial development with exogenous determinants of the degree of financial development such as the level of judicial inefficiency and the level of social capital.

While both these factors are likely to be exogenous with respect to economic and financial development, they might have a direct effect (or be a proxy for a variable that has a direct effect) on our variables of interest. This problem is likely to be more severe for social capital than for judicial inefficiency, since there is some evidence (e.g., Knack and Kneefer, (1996)) that social capital has a direct effect on economic performance. For this reason we report both the regressions with only judicial inefficiency as an instrument, which we regard as more robust to this criticism, and the regression with both sets of variables as instrument. Moreover, we try to minimize the severity of the problem inserting in the regression variables that might capture the direct effect. For example, the local level of economic delinquency that might have a direct impact on economic performance affects our measures of judicial inefficiency. To eliminate this possible spurious correlation of the instrument, we control for the level of delinquency in our regressions.

Does the Local Market Matter?

One could object that such indicator of financial development is not very useful in so much as it measures a *local* condition of the credit market. If individuals and firms can tap markets other than the local one, local market conditions become irrelevant.

There is a growing literature, however, documenting that distance matters in the provisions of funds, especially for small firms. Petersen and Rajan (2002), for instance, documents the importance of distance in the provision of bank credit to small firms. They also argue that such importance has been decreasing in recent years, thanks to the availability of more information. Since Italy lags behind the United States in this dimension, we expect distance to

still be important. Similarly, Lerner (1995) documents the importance of distance in the venture capital market.

That distance is an important barrier to lending is very much consistent also with the practitioners' view. The president of the Italian Association of Bankers (ABI) declared in a conference that the banker's rule of thumb is to never lend to a client located more than three miles from his office.

Overall, this discussion suggests that distance may segment local markets. Whether it does it in practice, it is ultimately an empirical matter. If local market conditions do not matter, then the geographical dummies should not have a statistically significant impact on the probability of being denied a loan, a proposition we will test. Similarly, if markets are not segmented our measure of local financial development should have no impact on any real variable, another proposition we will test.

Finally, the above discussion provides an additional testable implication. If local market conditions matter, they should matter the most for small firms, which have difficulty in raising funds at a distance, than for large firms. Thus, analyzing the effect of our indicator by different size classes will help test whether the effect we find is spurious or not.

What Is the Relevant Local Market?

Italy is currently divided in 20 regions and 103 provinces.[4] What is the relevant local market? According to the Italian Antitrust authority the "relevant market" in banking for antitrust purposes is the province, a geographic entity very similar to a US county. Furthermore, until 1990 banks could not open new branches without a Central Bank's permission. New authorizations were granted province-by-province, on the basis of an evaluation of the total number of branches already operating in each province. Thus, from an economic point of view the natural unit of analysis is the province.

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[4] The number of provinces has recently increased. During our sample period there were 95 provinces.

There are, however, some statistical considerations. Since we need to estimate the probability of rejection, which is a fairly rare event (3% of the entire sample and 14% in the sample of households who looked for credit), we need a sufficiently large number of observations in each local market. If we divide the 39,827 observations by province, we have *on average* only 387 observations per province and less than 200 observations in almost a third of the provinces. Therefore, we will be estimating each indicator on the basis of very few denials (on average 12). This casts doubt on the statistical reliability of the indicator. In fact, when we estimate the indicator at the provincial level 22% of the provincial indicators are not statistically significant. More importantly, when we divide the sample into two and estimate the provincial effect on the probability of being shut off the credit market prior and after 1994, the correlation between the indicators estimated in the first period and that estimated in the second period is only 0.14 and it is not statistically significant. As a result, we focus on the results at the regional level.

Description of our results

Our goal is to identify differences in the supply of credit. The probability a household is rejected or discouraged depends both on the frequency with which households demand credit and on the odds a demand for credit is rejected. To isolate this latter effect, we would like to have the set of people who were interest in raising funds. We do not have this information, but we can approximate this set by pooling all the households that have some debt with the household we know have been turned down for a loan or discouraged from applying.[5] This group represents 20 percent of the entire sample, with an incidence of discouraged/turned down equal to 14 percent.

For ease of interpretation we estimate a linear probability model of the likelihood a household is shut off from the credit market. Each year we classify a household as shut off if it reports it has been rejected for a loan application or discouraged from applying that year. As

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[5] Note that any residual demand effect will only bias us against finding any real effect of financial development. In fact, demand is likely to be higher in more dynamic regions. Thus, if we do not perfectly control for demand we will have that more dynamic regions are incorrectly classified as more constraints.

control variables we use several households' characteristics: household income, household wealth (linear and squared), household head's age, his/her education (number of years of schooling), the number of people belonging to the household, the number of kids, and indicator variables for whether the head is married, is a male, for the industry in which he/she works, and for the level of job he/she has. To capture possible regional differences in the riskiness of potential borrowers we control in this regression for the percentage of firms that go bankrupt (average of the 1992-1998 period). In addition we have calendar year dummies and a dummy for every region.

Table 2 reports the coefficient estimates of these regional dummies in ascending order. We drop the smallest region (Val d'Aosta) because it has only 10 households in the sample at risk and none rationed. In all the other regions the local dummy is positive and statistically significant at the 1% level. The magnitude of these coefficients, however, covers a wide range. The region with the lowest conditional rate of rejection (Marche) has a rejection rate that is exactly half of the rejection rate of the least financially developed region (Campania). As one can see from Table 2, financially underdeveloped regions tend to be in the South. Nevertheless, the correlation is not very high (0.27). This will allow us to separate the effect of a pure South dummy from the effect of financial underdevelopment. This might be over controlling, because the backwardness of the South, we will argue, can at least in part be attributed to its financial underdevelopment. Nevertheless, it is useful to show that the effects we find are not entirely explained by a South dummy.

We will use this conditional probability of being rejected as a measure of financial underdevelopment. For ease of interpretation, however, we transform this variable, so that becomes an indicator of financial development, not underdevelopment. Therefore, we compute

1 – Conditional Probability of Rejection/ Max {Conditional Probability of

Rejection}.

This distortion will reduce the possibility the correlation between financial development and any measure of economic performance.

This normalized measure of financial development, which we will use in the rest of the paper, is reported in the third column of Table 2.

Reality check of the results

Before we use this indicator, we need to show it is sensible. We do so in three ways. First, we show that it is very stable over time. While financial development is not necessarily constant over time, it is unlikely to change rapidly either. Second, we show that it is highly correlated with likely determinants of the level of financial development. Finally, we show that it is correlated with commonly used measures of financial developments. In this last case we do not expect the correlation to be too high. If it were, then our new methodology to estimate financial development would not be adding very much. These correlations, thus, should be seen both as a validation of our measure and as an assessment of the quality of existing measures.

To test the stability over time we divide the sample in two and we re-estimate the same regression over the period 1989-93 and 1995-98. Since in each of the estimation we use only half of the observations, these estimates are significantly noisier than the ones we use in the rest of the paper. Nevertheless, the correlation between the regional indicators of financial development obtained in the first period and the second one is very high (0.98), significant at the 1% level.

Our indicator is also highly correlated with likely determinants of financial development. It is negatively correlated with our two measures of court inefficiency: the average duration of a first degree trial (-0.40) and the number of pending trials scaled by population (-0.75), significant at the 1% level. It is also positively correlated with all the measures of social capital that, as GSZ (2001) show, affects the local availability and use of financial contracts: 0.57 with electoral turnout (significant at the 1% level), 0.47 with blood donation (significant at the 0.1% level), 0.30 with the incidence of cooperatives (significant only at the 23% level). Our measures of judicial inefficiency, which we will use as instrument, can explain 66 percent of the regional variation in financial development by themselves and 69 percent together with the social capital measures.

Our indicator is also correlated with other traditional indicators of financial development. Its correlation with number of bank branches divided by population is positive (0.36) and statistically significant at the 1% level. Similarly, it is negatively correlated with the spread between lending rates and borrowing rates (-0.63), significant at the 1% level. The correlation with the ratio of loans to GDP is positive (0.15), but not statistically significant. We think this reflects the shortcomings of the traditional measure, rather than of our new indicators.

Finally, as an alternative measure of financial development we use an indicator of the importance of usury. Usury, which is a direct consequence of financial underdevelopment, is an endemic problem in Italy. A special Parliamentary commission has done an inquiry on the topic and has produced an indicator of how important the phenomenon is in different provinces. This indicator is computed using 17 variables, including the number of police reports, arrests for usury etc. As expected, the importance of usury is negatively correlated with our indicator of financial development (-0.65), statistically significant at the 1% level.

In sum, all the evidence seems to suggest that our indicator of financial development captures significant differences in the efficiency of the financial market at the local level.

Possible Objections

While our indicator of financial development tries to implement the theoretically correct measure and produces economically sensible estimates, it is not immune from potential criticisms. Here we try to confront the major ones.

By construction our financial development indicator picks up all geographical characteristics that are correlated with the probability a household is denied a loan or is discouraged from applying. For example, GSZ (2001) show that Italian provinces differ greatly in their level of judicial efficiency and social capital. Thus, our measure of financial development also captures these local characteristics as they affect the supply of credit.

Yet, we do not regard this as a problem. In this paper we are not concerned about the causes of financial development (or lack of there of), but about its effects. If, for instance, social

capital affects the availability of credit, we do want to capture this effect as well and the estimated coefficient of the regional dummy achieves this objective: it captures the combined effect that all the local variables have on the availability of credit. Of course, when we estimate the effects of financial development on our variables of interest we might want to control for some of these variables as well, because we do not want to attribute to financial development some *direct* effects that social capital might have on our variables of interest. For example, it is well possible that social capital might have a direct negative effect on creation of firms, beyond its indirect effect via the credit market.

A regional dummy might also capture any geographical clustering of individual characteristics that makes somebody a good or a bad borrower. While we try to control for these differences inserting in the regression the actual default rate, we might still have unobservable differences. Let's assume, for instance, that households in Catania are on average more dishonest than those in Padua. Then, for given individual characteristics a banker will be less willing to lend to a household in Catania than in Padua. Do we want to interpret this difference as a difference in financial development?

Our answer is positive, as long as this discrimination is based on individual characteristics that are unobservable both to the econometrician *and* to the banker, and are presumed on the basis of geographical attribute. Under this assumption, an individual with the same characteristics (including unobservable honesty) will receive more credit in Padua than in Catania. Thus, ceteris paribus access to credit in Catania is worse and, thus, according to our definition Catania's level of financial development is lower.

On the other hand, the answer would be negative if the discrimination is based on individual characteristics unobservable to the econometrician but observed by the banker. Consider, for instance, the case that Catania's inhabitants are on average less energetic than Padua's and such a difference is visible to the banker, but not to the econometrician. In such a case we would record that Catania's inhabitants have less access to credit even if two individuals

with the same characteristics (including individual energy) receive the same amount of credit in Padua and in Catania. In this case, we would not like to use the fact that for given observable characteristics more households get denied credit in Catania as evidence that Catania's financial market is less developed, especially because this approach might incorrectly attribute to financial development some effects it does not have. For example, less energetic individuals are less likely to become entrepreneur, regardless of their access to credit. By using our geographical indicator of financial development, the effect of individual energy on entrepreneurship might appear as an effect of "financial development" on entrepreneurship.

To avoid this problem we will instrument our measure of financial development with its determinants, such as the level of judicial inefficiency. Since there are no obvious reasons why our measures of judicial inefficiency (average duration of a trial and number of pending trials divided by population) should be correlated with the level of individual energy, we think they represent good instruments.

Finally, it is possible that individuals appear more rationed in a certain area simply because of a temporary surge in the demand of credit, driven by local idiosyncratic factors. These local shocks increasing the demand for credit can be either negative or positive. We try to control for these negative shocks (like the crisis of the textile industry in Prato) by inserting in the regression the average rate of default in the area. By contrast, we are not too worried about positive shocks (such as a surge of investment opportunities in an area). By raising the odds of being rationed, these shocks would lead us to misclassify areas with a lot of investment opportunities as financial underdeveloped. This distortion in our indicator will bias against finding any real effect of financial development on entrepreneurship, new entry and growth.

2. Effects of financial development on firms' creations

Our first interest is the impact of financial development on economic mobility. We start from a very micro level: how does the degree of financial development affect the probability an

individual start his own business? We then complement this evidence with more aggregate data on the rate of firms' creation in a province. Finally, we look at whether differences in the ease of entry induced by differences in financial development have also impact on the degree of competition. Since in all these regressions our main variable of interest (financial development) varies only at the regional level, we correct the standard errors for the possible dependence of the residuals within regional clusters.

Effects on the probability of starting a business

The SHIW contains information about people's occupation. In particular, it identifies individuals who are self-employed. This is a broad category that includes bona fide entrepreneurs, both in the industrial and the retail sectors, professionals (doctors and lawyers), artisans, plumbers, electricians, etc. While the financing needs of these different occupations differ wildly, it is safe to say that all of them require access to financing more than working as an employee. For this reason we start our analysis focusing on the broader category. We exclude from the population "at risk" to become self-employed students, pre-school children, retirees (people older than 60), people unable to work because invalid, and military.

As control variables we use a combination of both individuals' characteristics and regional characteristics. As individual characteristics we use a person's age, his level of education, his sex, and a dummy variable equal to 1 if a household received an intergenerational transfer. [6] We also insert two local characteristics, both measured at the provincial level.

First, we use the level of per capita GDP, as a measure of economic development of the area. Since higher level of per capita income is also associated with higher level of per capita capital, this latter variable can also be interpreted in the context of Lucas' (1978) model of occupational choice and size of firms. Higher level of per capita capital boosts the productivity of

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[6] We do not control for the level of wealth because this is endogenous. In spite of this objection, we tried inserting it and the results were very similar.

employees, making it relatively more attractive for an individual to be employed. Thus, we expect the sign of per capital GDP to be negative.

Second, we try to control for a measure of people's willingness to commit fraud. To this purpose we use an Italian institutional feature. In Italy all checking accounts have an over drafting protection for small amounts. But if a check substantially exceeds this over drafting protection the bank calls the client and urges him to provide funds immediately. If he does not do it, his act of knowingly writing a check with insufficient funds is considered a fraud, which is a crime punishable with jail. We use the number of such reports per inhabitant as a measure of people willingness to commit fraud.

Table 3a reports the results. Column I reports the probit estimates of the impact of these variables on the probability an individual is self-employed. In more financially developed regions the probability a person becomes self-employed is indeed higher, and this effect is statistically different from zero at the 1% level. The effect is also economically significant. Moving from Campania (the most financially underdeveloped region according to our indicator) to Marche (the most financially developed) increases a person's probability to start his own business by 4 percentage points, equal to 33% of the sample mean. This result is also consistent with the literature on liquidity constraints and entrepreneurship.[7]

The individual characteristics have mostly the expected effect. Older people are more likely to start their own business and so are male. Not surprisingly, a transfer also significantly raises the probability of starting a business. More surprising it is the negative and statistically significant impact of education. This result, however, is coherent with what Evans and Jovanovic (1989) find for the United States.

Column II re-estimates the same specification inserting a dummy variable equal to one for regions located in the South of Italy. While this is over controlling (part of what is different

about the South is the lower level of financial development), it is important to ascertain the effect we found is not simply a North-South difference. And column II shows it is not. Individuals located in the South are significantly less likely to start their own business, but only marginally so (a 0.1 percent drop in the probability, equal to 1 percent of the sample mean). Introducing a Southern region dummy only minimally impacts the size of the coefficient of financial development.

One possible objection is that our indicator of financial development is measured with noise. To address this problem in Columns IV we instrument our indicator with two alternative measures of the efficiency of the local financial system. One is the importance of usury. This indicator is computed using 17 variables, including the number of police reports, arrests for usury etc. The second one is the fraction of total bank loans granted by local institutions.[8] This is a measure of the strength of local institutions, which tend to lend to smaller firms, vis-à-vis national institutions, which lend to larger firms with access to fund outside the local areas. For ease of comparison, column III reports the corresponding OLS estimates.

As to be expected in the case of a variable measured with error, the coefficient with instrumental variable is bigger than the OLS counterpart and remains statistically different from zero.

Another objection is that both financial development and entrepreneurship are driven by a third unobservable factor. To resolve this problem we need to find an instrument that is likely to be correlated with financial development, but not directly with entrepreneurship. One such instrument could be the quality of the local judicial system. Since in our specification we have a measure of crime, this should capture any direct effect that judicial inefficiency might have on economic activity. Hence, in column V we instrument financial development with two measures

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[7] For example, Evans and Jovanovic (1989) find that individuals with more assets are more likely to become self-employed. Holtz, Eakin, Joulfaian and Rosen (1994a, 1994b) find that individuals that receive intergenerational transfers from their parents are more likely to succeed in running small businesses.
[8] Local institutions are defined banks that are not present in more than five provinces.

of judicial inefficiency: the average duration of a first degree trial and the number of pending trials scaled by population.

The coefficient of financial development is similar to the OLS one (24 percent smaller), but the standard error almost doubles, thus we lose statistical significance at the conventional level (p value of 11 percent).

As we have shown in GSZ (2001), there exists another important determinant of financial development besides judicial inefficiency: the level of social capital of a certain area. The only problem in using this instrument is that social capital, through its effect on cooperation, might have a direct effect on an individual's ability to start a business. Since we have three measures of social capital (electoral turnout, blood donation, and frequency of cooperatives) we can use the first two measures as instruments and the third one, which is the most direct measure of people willingness to cooperate for economic purposes, as a control variable.

This is what we do in column VI. The magnitude of the coefficient of financial development is now above the OLS estimate and it is statistically significant at the 5% level.

In Table 3.B we focus on a narrower definition of entrepreneurs. Thus, we exclude from the sample all professionals (doctors and lawyers), artisans, plumbers, electricians, etc. So defined, the odds of being an entrepreneur is only 3 percent. As a result, our estimates become more imprecise, but the overall pattern of the results is the same.

Effects on the age at which people become entrepreneurs

Another way to test whether the improved access to funds brought by financial development affects the opportunity to become an entrepreneur is to look at the average age of entrepreneurs in different areas. Better access to funds should allow people to become entrepreneurs at a younger age, hence in more financially developed the average age of existing entrepreneurs should be lower

In Table 4 we test this proposition. We restrict our attention to the more narrow definition of entrepreneur, because it is the least distorted by subsidies. For instance, there are a lot of

subsidies to encourage younger generations to become artisans and these subsidies are not homogenous across different regions. Using this definition, however, we compute the average age of entrepreneurs in each province and then regress this average on the level of economic and financial development of each province. As column I shows, more financially developed regions have younger entrepreneurs on average, and this effect is statistically significant. Moving from the least financially developed region to the most financially developed one decreases the average age of entrepreneurs by 5.5 years. This effect is robust to controlling for Southern regions (column II) and to using instrumental variables (column III and V).

Effects on the entry on new firms

If financial development increases the likelihood an individual start a business, it should also increase the aggregate rate of firms' formation and, overall, the number of existing firms. Table 5 tests these predictions.

Table 5A analyzes the creation of new firms. The dependent variable is the fraction of new firms registered in a province during a year scaled by the number of inhabitants. It is an average for the period 1992-98. The explanatory variables are: our indicator of financial development in the region, the per capita GDP in the province and the level of economic delinquency. As column 1 shows, financial development favors the formation of new firms and this effect is statistically significant at the 1% level. Moving from the least financially developed region to the most financially developed one increases the ratio of new firms to population by .48, roughly one firm every 200 inhabitants. This result is consistent with Black and Strahan (2001) that find that in the U.S. competition in the banking market is associated with higher level of new incorporations because banking competition leads to more credit availability. Our result provides evidence of the direct link between credit availability and firms' creation.

Interestingly, unlike the result of the micro regression the effect of per capita GDP is negative and statistically significant, as predicted by Lucas's (1978) model. Economic delinquency has a negative effect on firm creation, but this is not statistically different from zero.

Inserting the South dummy (column II) does not alter the results. The dummy itself has a negative coefficient, which is statistically significant at the 10 percent level. Finally, in columns III and V we instrument our indicator of financial development: in column III with alternative measure of financial development, in column IV with our measures of judicial inefficiency, and in column V with both judicial inefficiency and social capital. The magnitude of the coefficient of financial development remains similar in level and retains statistical significance at the 5 percent level.

Table 5B analyzes the number of firms present in a province per 100 people living in the same area. Our dependent variable is an average of this indicator for the period 1996-98. As column I shows, more financially developed areas have more firms. The difference between the most and the least financially developed region can explain a difference of 3 firms per 100 people, equal to almost two standard deviations in numbers of registered firms.

Column II inserts a dummy for the Southern regions. This dummy has a negative and statistically significant impact on the level of firms. Once we account for Southern regions, the magnitude of the impact of financial development drops by 30 percent but remains statistically significant. The estimates obtained using instrumental variables are similar (Column III and V), but the standard deviations almost double. As a result, the estimate obtained using only the measures of judicial inefficiency, as instrument is not statistically significant at conventional levels, while the other is.

Effects on the competition in the local market

Thus far, we have shown that in financially developed regions people can more easily start a business and this leads to a higher rate of entry of new firms and also a higher number of

firms overall. Does this have any major economic consequence? The obvious place to look at is profit margins. Does this higher rate of entry lead to lower profit margins?

To answer this question we use our third dataset, containing firms' balance sheets information. Since we have information only where a firm is located and not where it sells its product, we need to assume that there is some degree of correlation between its location and the market it operates in. This assumption is fairly realistic given we are mostly talking about small firms.

We measure the mark up as earnings before interest, taxes, depreciation and amortization divided by output. We regress this measure on our indicator of financial development and a series of control variables. To control for industry specific characteristics we insert eighteen industry dummies. Then, we control for firm size, calendar year dummies, per capita GDP, and level of economic delinquency. The results are contained in Table 6.

As column I shows, firms in more financially developed regions have a smaller mark up. According to this estimate, firms in the most financially developed region have a mark up 1.6 percentage points lower than in the least financially developed region, i.e., 29 percent below the sample mean. Thus, the effect is both statistically and economically significant. This effect is robust to inserting a dummy for Southern regions (column II), and to instrumenting financial development (columns III- V).

In principles, these differences in the entry of new firms and the degree of competition could also be attributed to geographical clustering in industry specialization. Suppose that certain areas of the country are specialized in industries or segment of industries where the optimal firm size is small. Then, in these areas we would observe more firms, more competition, and also more entry, since barriers to entry are smaller when the optimal size of a firm is smaller. This could explain why these characteristics are positively correlated in the data, but why are they positively correlated with financial development? If this is the direction of causation we should find a strong negative correlation between financial development and firm's size.

This is what we do in Table 7. We measure size as the logarithm of sales. We regress it on our indicator of financial development, eighteen industry dummies, calendar year dummies, per capita GDP, and level of economic delinquency, and firms' profitability. This latter variable is obviously endogenous. Removing it, however, does not change our results.

As Table 7 shows, the results are very mixed. In four out of five specifications the estimated coefficient of financial development is negative, but is statistically significant in only two. Thus, geographical clustering in optimal firm size is unlikely to be the driving force behind our results.

In sum, we have looked at the effect of financial development on entry from very different points of views: from the micro point of view -- the occupational choice; from the macro point of view -- the number of new and existing firms; and from the industrial organization point of view -- lower profits margins. From all these different angles a consistent picture emerges: financial development facilitates entry.

3. Effects of financial development on firms' growth

Finally, we explore whether the local level of financial development affects firms' rate of growth. Existing firms can, at least in part, finance growth via internally generated cash. Thus, we expect financial development to have an impact only on the growth in excess of the one that could be internally financed. Following Demirguc-Kunt and Maksimovic (1998), we compute the maximum rate of internally financed growth and then use it as a control variable in the regression. This rate is obtained following the "percentage of sales" approach to financial planning (Higgins, 1977). Under reasonable assumptions, the maximum rate of growth internally financed is:

$$\text{Max } g = \text{ROA}/ (1 - \text{ROA})$$

where ROA is the return on assets.[9]

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[9] The assumptions are: i) the ratio of assets used in production to sales is constant; ii) the firm's profit rate for unit of sales is constant; iii) the economic deprecation of assets equals that reported in the financial statements; iv) all the profits are reinvested.

The dependent variable is the annual nominal rate of growth in sales. Besides the maximum rate of growth that could be internally financed, our explanatory variables include: firm's size, a dummy for the industry a firm belongs to, the level of economic delinquency, the GDP per capita in the province and, of course, our regional indicator of financial development. A full set of calendar year dummies account for any aggregate shock to nominal sales growth, including inflation.

As Table 8 shows, local financial development has a positive and statistically significant effect on firm's growth. Ceteris paribus, a firm located in the most financially developed region grows 6 percentage points faster than a firm located in the least financially developed region, i.e. 67% faster than the average firm. Thus, the effect is very sizeable also from an economic point of view. When we insert a dummy for Southern regions (column II) the economic magnitude of this effect is reduced by 18%, but it remains statistically significant at the 1% level. When we instrument the indicator of financial development with alternative measures of financial development (column III) or with our measures of court inefficiency (column IV), the magnitude of the coefficient increases by 50% and remains highly statistically significant. A similar result emerges if we use both court inefficiency and social capital as instruments (column V).

Effects on aggregate growth

Since we have seen that financial development fosters the entry of new firms and the growth of the existing ones, it should also have an impact on the aggregate rate of growth. We test this prediction in Table 9. We measure growth as the rate of growth of per capita GDP in a province between 1989 and 1997. Per capita GDP is the per capita net disposable income in the province in million liras. In the tradition of the growth regressions (see Barro (1991)), we control for several factors: the beginning of the period (1989) GDP per capita; the quality of infrastructure present in a province at the beginning of the period (measured as the availability of infrastructure in the province as of 1987); the level of human capital, measured as the average years of schooling in

the province in 1981; and the population growth, which is the growth of population between 1989 and 1997.

After controlling for all these variables, the level of financial development has a positive and statistically significant impact on growth (column I). The effect is also economically sizeable. Moving from the least to the most financially developed region boosts the growth rate by 1.2 percentage point a year. This effect is robust to inserting a control for Southern regions (column II).

Interestingly, when we instrument our indicator of financial development with other measures of ease of access to external funds (diffusion of usury and importance of local banks in the credit market), the effect triples in size (column III). This seems to suggest that the noisiness of our indicator of financial development tends to bias downward our estimate of the impact of financial development on growth.

In columns III and IV we re-estimate the basic specification instrumenting our indicator of financial development for the exogenous factors that affect the degree of development of a country financial system. When we use as instrument our measures of efficiency of the judicial system, the IV estimate is almost identical to the OLS one. When we instrument using our two measures of social capital and control for the third one in the regression, the effect slightly drops in size and loses statistical significance (column IV). But if we use both sets of instrument together, the impact remains statistically significant (not reported).

In sum, the data seems to confirm that the micro effects we have documented have also an impact at the macro level. An interesting and unexplored question is how much these differences in financial development can explain regional differences in economic development. To assess the potential important of this factor in an unreported regression we relate the level of per capita GDP in a province to the local level of financial development, instrumented with our measures of social capital. Not only local financial

development has a positive and statistically significant effect, its magnitude is also economically very relevant. The entire difference in per capita income between Milan and Rome – about 50% - could be explained by the difference in their local levels of financial development. Of course, many other factors play a role. Nevertheless, this is further evidence that local financial development matters.

4. Sample Splits

Theoretically, we do not expect all firms to be equally affected by local financial development. Larger firms can more easily tap markets far from their main headquarters. Therefore, we expect the effect of local financial development to be mostly concentrated among small firms. To test this proposition we divide the sample in four. The first group is composed of small firms, with less than 67 employees. We chose this cut off because it represents the 75th percentile of firm's distribution. The second group is composed of what in Italy we would call medium firms, with a number of employees between 67 and 275 (the 95th percentile of the distribution). Large firms, those with more than 275 employees, form the third group. Finally, we isolate a group of really large firms, more than 500 employees.

Table 10 reports the results of these sample splits. Table 10a reports the mark-up regressions. As expected, the effect of financial development on mark up seems to be present only among small and medium firms. The effect is quantitatively much smaller (only one third) and not statistically significant for large and very large firms.

Table 10b reports the sample splits for the growth regressions. Not surprisingly, small firms, which represent 75% of the sample, behave as the sample as a whole (column I). More interestingly, the impact of financial development on growth is 29% lower in medium firms than in small firms and 67% lower in large firms than in small firms. As to be expected, the impact of financial development on very large firms is zero, both economically and statistically.

These results on size are consistent with Berger et al. (2001) and Petersen and Rajan (2002) that find that small firms are less likely to borrow at a distance making them more dependent from the level of local financial development.

These results are interesting for two reasons. First, that the effect of financial development varies as theory predicts strengthen the confidence that our results are not spurious. Second, it suggests that the effects of *local* financial development are limited to small firms. This is important from a political economy point of view (see Rajan and Zingales, 2001). Large and established firms do not get any benefit from local financial development; in fact they are hurt, because it increases the competition at the local level. Thus, they are not very likely to push for it. The real beneficiaries are small firms and would be entrepreneurs, a group who is hardly very influential at the political level.

5. Conclusions

Financial markets are becoming increasingly integrated throughout the world. Does this mean that domestic financial institutions become irrelevant? Our paper suggests not. We show that even in a country (Italy) that has been fully integrated (not only politically, but also in term of regulation) for the last 140 years local financial development still matters. Therefore, domestic financial institutions are likely to remain important in a financially integrated Europe and, more broadly, in a financially integrated world for time to come.

Our evidence also suggests that, as predicted by theory, local financial development is differentially important for large and small firms. Not only does this result support the existence of a causal link between local financial development and real economic variables, but it also raises some questions on the economic effects of financial integration. As Europe and the world are becoming more integrated, large firms will become increasingly uninterested of the conditions of the local financial system, while small firms will continue to rely on it. Hence, depending on the initial size distribution of firms and the minimum threshold to access foreign capital markets,

the political support in favor of domestic financial markets might vanish or strengthen as the world becomes more financially integrated. Policy makers working at the European integration should seriously consider this effect, which might explain the persistent underdevelopment of vast areas in Italy 140 years after unification.

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Figure 1: Financial Development by Regions
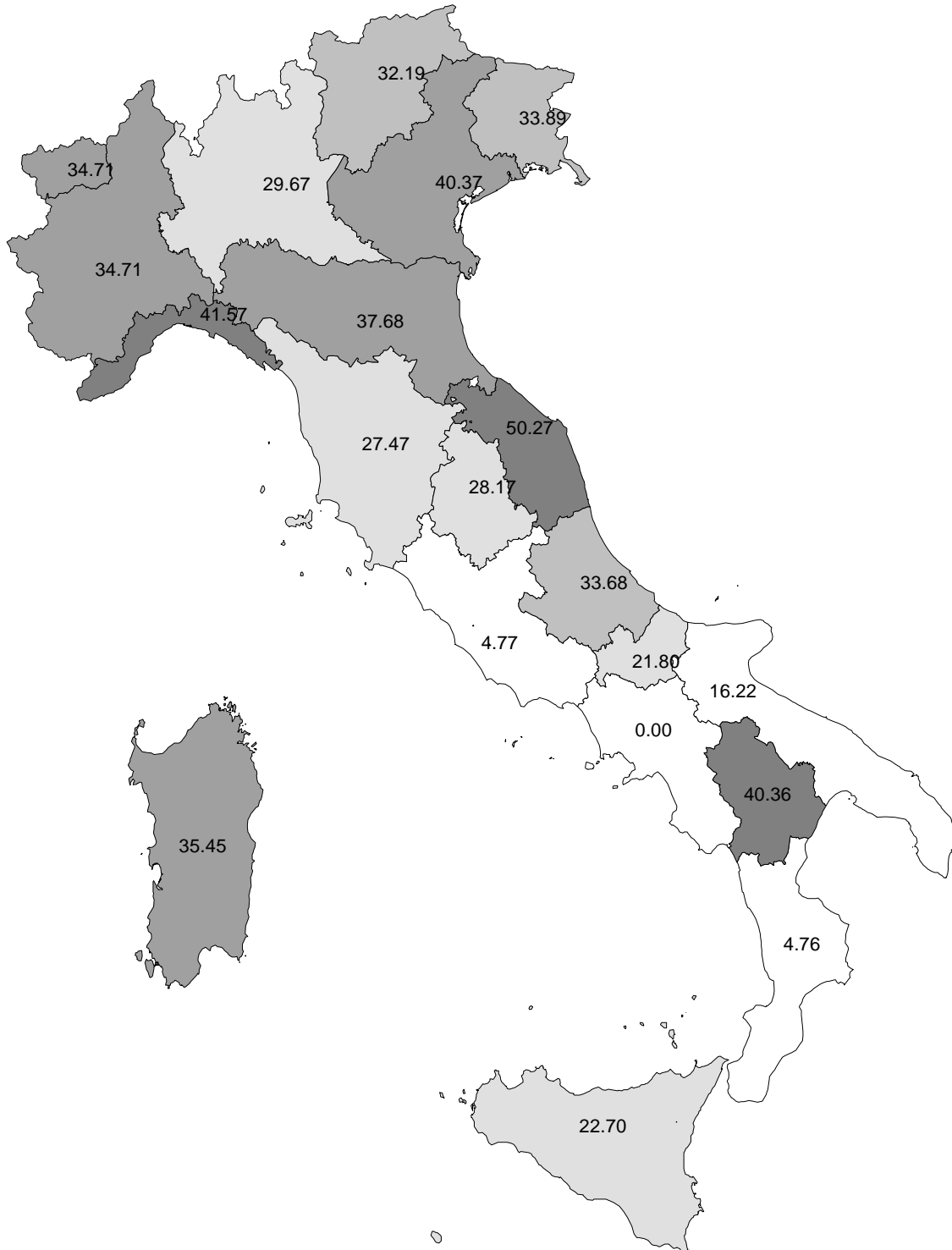
Table 1. Summary statistics for the samples used in estimation

Panel A reports summary statistics for the households at risk of being rationed in the SHIW. This includes all the households that have received loans and households that have been denied a loan or discouraged from borrowing; Panel B reports summary statistics for the individuals in the SHIW (most households have more than one individual). Panel C reports summary statistics for the controls and instrumental variables used at provincial level. Panel D reports summary statistics for the firms' balance sheet database, Panel E for the Survey of Manufacturing Firms. Credit rationed is a dummy variable equal to one if an household responds positively to at least one of the following questions: ``During the year did you or a member of the household think of applying for a loan or a mortgage to a bank or other financial intermediary, but then changed your mind on the expectation that the application would have been turned down?'' "During the year did you or a member of the household apply for a loan or a mortgage to a bank or other financial intermediary and your application was turned down?." Age is the age of the household head in the household sample and the age of the individual in the individual sample. Male is a dummy variable equal to one if the household head or the individual is a male. Years of education is the number of years a person attended school. Net disposable income is in millions liras. Wealth is financial and real wealth net of household debt in millions liras. South is a dummy equal to one if the household lives in a region south of Rome. Entrepreneurs 1 includes entrepreneurs, both in the industrial and retail sectors, professionals (doctors and lawyers), and artisans. Entrepreneurs 2 includes only entrepreneurs, both in the industrial and retail sectors. Intergenerational transfer is a dummy variable equal to 1 if a household received transfers from their parents. Financial development is our indicator of access to credit (see Table 2). Per capita GDP is the per capita net disposable income in the province in millions of liras. Court inefficiency 1 is the number of years it takes to have a first-degree judgment. Court inefficiency 2 is the number of cases without judgment on the population. Economic delinquency is number of criminal prosecutions filed by banks for repeated issuance of checks with insufficient funds scaled by population and measured at the provincial level. Social capital (referenda turnout) is the average participation to national referenda (1946-1989), measured at the provincial level. Blood donation is number of bag of blood donated for inhabitant in the province of residence of the individual. Cooperatives is from Putnam (1993) and it is a factor score summarizing the regional number of cooperatives, standardized by population, in 1889, 1901, 1910, and 1915. Firms' creation is the fraction of the new firms registered in a province during a year over the total number of registered firms (average1992-98, source ISTAT). Number of firms present per 100 people living in the same area is from ISTAT (average 1996-98). Usury diffusion index is an indicator of the pervasiveness of usury computed by a parliamentary commission using 17 variables, including the number of police reports, apprehensions for usury etc. Number of employees is the number of employees measured at the firm level (average across years). Sales growth is the growth in nominal sales. Mark-up is profit on sales. Leverage is book debt over the sum of book debt plus book equity. Average collection period is average accounts receivable (moving average across two periods) scaled by sales and multiplied by 365. South is a dummy equal to one if the firm is located in a region south of Rome. Ownership is a dummy variable equal to one if the firm has a single owner/shareholder. Age is the firm's age.

A: Households sample

	Mean	Median	Standard deviation	1st percentile	99th percentile
Credit rationed	0.137	0.00	0.344	0	1
Age	45.00	46.27	11.82	25	76
Male	0.85	1.00	0.352	0	1
Years of education	9.69	8.00	4.34	0	18
Net disposable income	47	41	33	6	155
Wealth	243	149	367	-19	1,634
South	0.359	0.00	0.480	0	1
Number of observations	8,119				

B: Individuals in the Household sample

	Mean	Median	Standard deviation	1st percentile	99th percentile
Entrepreneurs 1	0.14	0.00	0.35	0	1
Entrepreneurs 2	0.03	0.00	0.16	0	1
Age	39	39.00	11.90	16	59
Male	0.49	0.00	0.50	0	1
Years of education	9.70	8.00	4.18	0	18
Wealth	272	158	559	-6	1,893
Dummy if they have received transfers from their parents	0.12	0.00	0.33	0	1
Resident in the South	0.39	0.00	0.49	0	1
Number of observations	50,590				

C: Provincial variables

	Mean	Median	Standard deviation	1st percentile	99th percentile
Financial development	0.28	0.32	0.13	0	0.50
GDP per capita (millions liras)	25.35	24.16	10.62	12.17	54.76
Judicial inefficiency 1	3.79	3.49	1.43	1.66	7.89
Judicial inefficiency 2	0.05	0.05	0.02	0.2	0.11
Economic delinquency	0.99	0.84	0.61	0.17	2.86
Social capital (referenda turnout)	80.02	83.02	8.42	62.1	90.82
Blood donation	28.04	23.91	21.68	0	79.54
Cooperatives 1889-1915	0.00	0.36	1	-1.11	2.34
Usury diffusion index	927.59	723.00	447.67	196.00	2,002
Firms creation per 100 inhabitants	1.14	1.12	0.34	0.53	1.95
Number of firms per 100 inhabitants	9.18	9.02	1.55	6.17	12.77

D: Firm level data: Firms Balance Sheet Database

	Mean	Median	Standard deviation	1st percentile	99th percentile
Number of employees	103.33	32.00	1,167	2	970
Sales growth	0.074	0.073	0.25	0.706	-0.685
Assets/sales	1.086	0.768	1.43	0.164	15.40
Mark-up	0.058	0.055	0.095	- 0.296	0.335
Return on assets	0.078	0.075	0.091	- 0.186	0.349
Leverage	0.506	0.548	0.297	0	0.985
Average collection period	129.41	97.58	171.52	3.54	923.58
South	0.134	0.00	0.34	0	1
N. Observations	326,590				

Table 2. The indicator of financial development

The table illustrates our indicator of financial development. The coefficient on the regional dummies is obtained from an OLS regression estimated using a subset of the household in SHIW. This subset includes (a) households that have received a loan, (b) households that have been turned down for a loan, (c) households that are discouraged from borrowing. The left hand side variable is a dummy equal to 1 if a household is credit constrained (i.e., declares it has been turned down for a loan or discouraged from applying) and zero otherwise. Besides including a full set of regional dummies, the regression, includes a number of demographic characteristics to controls for individual effects that affect access to the credit market (age, gender, type of job, income, family size, number of income recipients in the household), and a control for the percentage of bankruptcies in the area. The letter on the right on the name of the region defines whether a region is located in the North (north of Florence), in the Center (between Florence and Rome) or in the South (south of Rome). The normalized measure is defined as 1 – Regional effect / Max {Regional effect} and is thus equal to zero in the region with the maximum value of the coefficient on the regional dummy – i.e. the region less financially developed, and varies between zero and 1.

Region	Coefficient on regional dummy	Normalized measure of financial development
Marche (C)	0.126974	0.502711
Liguria (N)	0.149193	0.415693
Veneto (N)	0.152252	0.403711
Basilicata (S)	0.152283	0.403588
Emilia (N)	0.159136	0.376752
Sardegna (S)	0.164811	0.354525
Piemonte (N)	0.166695	0.347145
Friuli ven. (N)	0.168796	0.338919
Abruzzo (S)	0.169333	0.336813
Trentino (N)	0.173149	0.32187
Lombardia (N)	0.17958	0.296682
Umbria (C)	0.183417	0.281653
Toscana (C)	0.185195	0.274692
Sicilia (S)	0.197365	0.227028
Molise (S)	0.199661	0.218035
Puglia (S)	0.213902	0.162261
Lazio (C)	0.243147	0.047723
Calabria (S)	0.243169	0.04764
Campania (S)	0.255333	0

Table 3. Entrepreneurship and financial development

The left hand-side variable is a dummy equal to 1 if the individual is self-employed. In Panel A this category includes entrepreneurs, both in the industrial and retail sectors, professionals (doctors and lawyers), and artisans. In Panel B this category includes only entrepreneurs, both in the industrial and retail sectors. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instruments two measures of judicial inefficiency (court inefficiency 1 is the number of years it takes to have a first-degree judgment and court inefficiency 2 is the number of cases without judgment on the population). IV-3 uses as instrument the two measures of judicial inefficiency and two measures of social capital (electoral turnout, blood donation). Financial development is our indicator of access to credit (see Table 2). Per capita GDP is the per capita net disposable income in the province in million liras. Intergenerational transfer is a dummy variable equal to 1 if a household received transfers from their parents. Male is a dummy equal to one if the individual is a male. Years of education are the number of years a person attended school. Economic delinquency is the number of criminal prosecutions filed by banks for repeated issuance of checks with insufficient funds. Age is the age of the individual. South is a dummy equal to one for regions south of Rome. Cooperatives is from Putnam (1993) and it is a factor score summarizing the regional number of cooperatives, standardized by population, in 1889, 1901, 1910, and 1915. Standard errors, which are reported in brackets, are adjusted for clustering at the regional level. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

Panel A

	Probit	Probit	OLS	IV-1	IV –2	IV – 3
Financial Development	0.1212***	0.1083***	0.1137***	0.1581**	0.1337**	0.1369**
	(0.0299)	(0.0353)	(0.0330)	(0.0602)	(0.0480)	(0.0502)
Per Capita GDP/1000	0.0499	-0.1057	-0.1141	-0.0991	-0.1074	0.0200
	(0.2539)	(0.3021)	(0.3032)	(0.3154)	(0.3080)	(0.2688)
Intergenerational transfers	0.0817***	0.0818***	0.0892***	0.0891***	0.0892***	0.0891***
	(0.0119)	(0.0119)	(0.0122)	(0.0122)	(0.0122)	(0.0135)
Male	0.0999***	0.0999***	0.1014***	0.1014***	0.1014***	0.1008***
	(0.0098)	(0.0100)	(0.0096)	(0.0096)	(0.0096)	(0.0105)
Economic delinquency	-0.0076	-0.0060	-0.0070	-0.0099	-0.0083	-0.0121
	(0.0087)	(0.0092)	(0.0091)	(0.0088)	(0.0105)	(0.0109)
Years of education	-0.0072***	-0.0073***	-0.0073***	-0.0073***	-0.0073***	-0.0077***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0011)
Age	0.0015***	0.0015***	0.0015***	0.0015***	0.0015***	0.0016***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
South		-0.0083	-0.0040	0.0034	-0.0006	0.0325*
		(0.0110)	(0.0109)	(0.0161)	(0.0125)	(0.0180)
Cooperatives per capita 1889-1915						0.0150**
						(0.0069)
Observations	13908	13908	13908	13908	13908	12519

Panel B

	Probit	Probit	OLS	IV-1	IV -2	IV – 3
Financial Development	0.0270	0.0340*	0.0430**	0.0132	0.0380	0.0601
	(0.0165)	(0.0186)	(0.0198)	(0.0426)	(0.0319)	(0.0360)
Per Capita GDP/1000	-0.0797	0.0062	0.0137	0.0030	0.0119	0.0747
	(0.1341)	(0.1904)	(0.2030)	(0.2114)	(0.2011)	(0.1969)
Intergenerational transfers	0.0626***	0.0625***	0.0745***	0.0746***	0.0745***	0.0758***
	(0.0086)	(0.0086)	(0.0092)	(0.0091)	(0.0091)	(0.0102)
Male	0.0721***	0.0721***	0.0760***	0.0760***	0.0760***	0.0750***
	(0.0085)	(0.0084)	(0.0094)	(0.0094)	(0.0094)	(0.0104)
Economic delinquency	-0.0013	-0.0022	-0.0024	-0.0003	-0.0020	-0.0046
	(0.0045)	(0.0043)	(0.0047)	(0.0052)	(0.0056)	(0.0059)
Years of education	-0.0053***	-0.0052***	-0.0058***	-0.0058***	-0.0058***	-0.0062***
	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0009)
Age	0.0010***	0.0010***	0.0011***	0.0011***	0.0011***	0.0011***
	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
South		0.0046	0.0093	0.0043	0.0084	0.0114
		(0.0063)	(0.0066)	(0.0102)	(0.0064)	(0.0141)
Cooperatives per capita 1889-1915						-0.0014
						(0.0070)
Observations	13103	13103	13103	13103	13103	11830

Table 4. Self employed age and local financial development

The dependent variable is the average age of the self employed in the province, calculated only including the entrepreneurs, both in the industrial and retail sectors. Financial development is our indicator of access to credit (see Table 2). Per capita GDP is the per capita net disposable income in the province in million liras. South is a dummy equal to one for regions south of Rome. Cooperatives is from Putnam (1993) and it is a factor score summarizing the regional number of cooperatives, standardized by population, in 1889, 1901, 1910, and 1915. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instruments two measures of judicial inefficiency (court inefficiency 1 is the number of years it takes to have a first-degree judgment and court inefficiency 2 is the number of cases without judgment on the population). IV-3 uses as instrument the two measures of judicial inefficiency and two measures of social capital (electoral turnout, blood donation). Standard errors are reported in brackets. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

	OLS	OLS	IV-1	IV-2	IV-3
Financial Development	-10.9353***	-9.2814**	-0.5499	-10.5576**	-9.6894**
	(3.2089)	(3.6413)	(8.0383)	(4.2291)	(4.3358)
Per Capita GDP/1000	94.6902**	132.3467**	119.5347**	134.2192**	138.6885***
	(36.1046)	(47.4411)	(53.2137)	(47.9727)	(46.5511)
South		1.6712	2.4526	1.5569	0.1320
		(1.3374)	(1.6932)	(1.2789)	(1.6824)
Cooperatives per capita 1889-1915					-0.8707
					(0.5174)
Observations	92	92	92	92	82
R-squared	0.081	0.097	0.058	0.096	0.104

Table 5. Firms' creation and local financial development

In Panel A the dependent variable is the fraction of the new firms registered in a province during a year scaled by population. It is an average for the period 1992-98. In Panel B the dependent variable is the number of firms located in a province per 100 people living in the same area. It is an average for the period 1996-98. Per capita GDP is the per capita net disposable income in the province in million liras. Delinquency is the number of criminal prosecutions filed by banks for repeated issuance of checks with insufficient funds. South is a dummy equal to one for regions south of Rome. Cooperatives is from Putnam (1993) and it is a factor score summarizing the regional number of cooperatives, standardized by population, in 1889, 1901, 1910, and 1915. IV-1 uses as instruments two measures of judicial inefficiency (the level of court inefficiency is the number of years it takes to have a first-degree judgment and the number of cases without judgment on the population). IV-2 uses as instrument two measures of social capital (electoral turnout, blood donation). Standard errors, reported in brackets, are adjusted for regional clustering. (***): Coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

A: Entry of new firms

	OLS	OLS	IV-1	IV-2	IV-3
Financial Development	95.034***	76.685***	117.187**	67.196*	87.512**
	(22.917)	(18.585)	(45.341)	(36.03)	(36.725)
Per capita GDP/1000	-0.795**	-1.1***	-1.119***	-1.1***	-1.16***
	(0.337)	(0.329)	(0.360)	(0.322)	(0.310)
Economic delinquency	-5.021	-3.016	-3.908	-2.807	-3.484
	(3.045)	(3.525)	(3.670)	(3.562)	(3.733)
South		-14.602*	-9.595	-15.775*	-10.572
		(8.145)	(10.152)	(8.651)	(14.374)
Cooperatives 1889-1915					2.714
					(6.899)
Observations	100	100	100	100	94
R-squared	0.133	0.155	0.139	0.154	0.172

B: Number of firms per capita in the region

	OLS	OLS	IV-1	IV-2	IV-3
Financial Development	5.649***	3.996***	5.483**	2.95	3.896*
	(1.741)	(1.124)	(2.552)	(1.972)	(1.858)
Per capita GDP/1000	0.0183	-0.010	-0.102	-0.009	-0.0129
	(0.023)	(0.022)	(0.022)	(0.022)	(0.022)
Economic delinquency	-0.146	0.034	0.002	0.058	0.017
	(0.162)	(0.191)	(0.170)	(0.198)	(0.196)
South		-1.315***	-1.131**	-1.444***	-1.156**
		(0.345)	(0.414)	(0.333)	(0.465)
Cooperatives 1889-1915					0.168
					(0.233)
Observations	100	100	100	100	94
R-squared	0.264	0.351	0.34	0.346	0.39

Table 6. Firms market power and financial development

The left hand-side variable is a measure of the market power of the firm. Following Domowitz, Hubbard and Petersen [1986] we compute the firm's profit margin on unit price as (value added - labor costs)/(total income + change in stocks); for a price-setting firm with constant returns to scale, the lower the elasticity of demand the higher the margin and thus its market power. All regressions include a full set of time and industry dummies; firm size is measured with the number of employees. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instrument the average provincial length of trials and the average number of pending trials in a region. IV-3 includes also two indicators of social capital, blood donation and electoral turnout. Standard errors, reported in brackets, are adjusted for regional clustering. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

	OLS	OLS	IV-1	IV -2	IV -3
Financial development	-0.0316***	-0.0257*	-0.0396***	-0.0411***	-0.0379***
	(0.0083)	(0.0129)	(.0122)	(0.0138)	(0.0124)
Per capita GDP/1000	-1.74e-05	4.09e-05	2.66e-05	3.81e-05	2.05e-05
	(4.08e-05)	(4.87e-05)	(4.13e-05)	(4.82e-05)	(4.86e-05)
Economic delinquency	0.0011	0.0006	0.0007	0.0008	0.0013
	(0.0015)	(0.0012)	(0.0013)	(0.0012)	(0.0016)
Log (size)	-0.0021***	-0.0020***	-0.0021***	-0.0021***	-0.0021***
	(0.0003)	(0.0003)	(0.0003)	(0.0003)	(0.0003)
South	-	0.0056*	0.0035	0.0035	0.0027
		(0.0030)	(0.0027)	(0.0029)	(0.0035)
N. of Coops	-	-	-	-	-0.0001
					(0.0009)
N. Obs.	296,846	296,846	296,846	296,846	296,846
Adj. R-square	0.021	0.022	0.022	0.021	0.020

Table 7. The effect of financial development on firms' size

The left hand-side variable is the logarithm of sales. All regressions include time and industry dummies; profit is return on assets. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instrument the average provincial length of trials and the average number of pending trials in a region. IV-3 includes also two indicators of social capital, blood donation and electoral turnout. Standard errors, reported in brackets, are adjusted for regional clustering. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

	OLS	OLS	IV-1	IV-2	IV-3
Financial development	-0.2426	-0.5554 *	0.0389	-0.5335	-0.7889**
	(0.3072)	(0.2741)	(0.6876)	(0.4113)	(0.3153)
Per capita GDP/1000	9.68e-03	6.51e-03	.0059	6.51e-03	6.73e-03
	(2.40e-03)	(2.09e-03)	(2.8e-03)	(2.09e-03)	2.50e-03
Economic delinquency	-0.0489	0.0228	0.0103	0.0225	0.0132
	(0.0482)	(0.0436)	(0.0508)	(0.0449)	(0.0597)
Return on assets	1.9461***	1.9100***	1.900	1.9094***	1.9625***
	(0.1741)	(0.1606)	(0.1578)	(0.1612)	(0.1926)
South	-	-0.2970**	-0.2295	-0.2942**	-0.2124**
		(0.1127)	(0.1712)	(0.1225)	(0.1432)
N. of coops	-	-	-	-	0.0492
					(0.0374)
N. Obs.	325,608	325,608	325,608	325,608	325,608
Adj R-square	0.138	0.142	0.1394	0.142	0.146

Table 8. The effect of financial development on firms' growth

The left hand-side variable is the annual rate of growth in sales. All regressions include industry and time dummies. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instrument the average provincial length of trials and the average number of pending trials in a region. IV-3 includes also two indicators of social capital, blood donation and electoral turnout. Standard errors, reported in brackets, are adjusted for regional clustering. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

	OLS	OLS	IV-1	IV-2	IV-3
Financial development	0.0997***	0.0926***	0.1386***	0.1388***	0.1239**
	(0.0084)	(0.0273)	(0.0322)	(0.0348)	(0.0308)
Internally financed growth	0.1133***	0.0976***	0.0964***	0.0964***	0.0928***
	(0.0149)	(0.0089)	(0.0089)	(0.0085)	(0.0091)
Per capita GDP/1000	1.09e-04	-1.04e-04	-7.63e-05	-9.68e-05	-7.32e-05
	(1.63e-04)	(1.42e-04)	(1.48e-05)	(1.38e-04)	(1.16e-04)
Economic delinquency	-0.0067**	-0.0049*	-0.0054*	-0.0055*	-0.0032
	(0.0029)	(0.0025)	(0.0029)	(0.0029)	(0.0034)
Size	0.0148***	0.0146***	0.0148	0.0148***	0.0148**
	(0.0021)	(0.0020)	(0.0021)	(0.0021)	(0.0023)
South	-	-0.0198**	-0.0136	-0.0139	-0.0134
		(0.0077)	(0.0089)	(0.0085)	(0.0079)
N. of coops	-	-	-	-	0.0014
					(0.0019)
N. Obs.	252,101	252,101	252,101	252,101	252,101
Adj R-square	0.060	0.060	0.060	0.060	0.051

Table 9. Local growth and financial development

The dependent variable is the rate of growth of per capita GDP between 1989 and 1997. Financial development is our indicator of access to credit (see Table 2). Per capita GDP is the per capita net disposable income in the province in million liras. Infrastructure is an indicator of the level of infrastructure at the provincial level in 1987. Average schooling is the average years of schooling in the province in 1981. Population growth is the growth of population between 1989 and 1997. South is a dummy equal to one for regions south of Rome. Cooperatives is from Putnam (1993) and it is a factor score summarizing the regional number of cooperatives, standardized by population, in 1889, 1901, 1910, and 1915. IV-1 uses as instrument usury and the fraction of local bank lending over total lending in the province. IV-2 uses as instruments two measures of judicial inefficiency (court inefficiency 1 is the number of years it takes to have a first-degree judgment and court inefficiency 2 is the number of cases without judgment on the population). IV-3 uses as instrument the two measures of judicial inefficiency and two measures of social capital (electoral turnout, blood donation). (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

	OLS	OLS	IV-1	IV-2	IV-3
Financial Development	0.0240**	0.0224***	0.0673***	0.0256**	0.0171
	(0.0100)	(0.0078)	(0.0205)	(0.0118)	(0.0105)
Per capita GDP/1000 in 1989	-0.0025***	-0.0031***	-0.0030***	-0.0031***	-0.0034***
	(0.0004)	(0.0003)	(0.0004)	(0.0003)	(0.0003)
Infrastructures in 1987	0.0001*	0.0000	-0.0001	0.0000	-0.0000
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Average schooling in 1981	0.0053**	0.0028	0.0028	0.0028	0.0053**
	(0.0027)	(0.0021)	(0.0025)	(0.0021)	(0.0024)
Population growth	-0.0001	0.0002	0.0008*	0.0002	0.0001
	(0.0004)	(0.0003)	(0.0005)	(0.0003)	(0.0003)
South		-0.0206***	-0.0202***	-0.0206***	-0.0142***
		(0.0027)	(0.0032)	(0.0027)	(0.0039)
Cooperatives per capita 1889-1915					0.0033*
					(0.0018)
Observations	93	93	93	93	81
R-squared	0.369	0.621	0.674	0.620	0.673

Table 10. Sample splits by firm size

In panel A the left hand-side variable is a measure of the market power of the firm (see notes to Table 6). In Panel B it is the average collection period, defined as the average level of account receivables (sum of beginning of period and end of period stock divided by 2) scaled by sales and multiplied by 365. In Panel C a dummy variable equal to 1 if firm is 100% owned by one shareholder. Small firms have less than 67 employees; medium firms between 67 and 275; large firms more than 275 and very large firms more than 500. Regressions include industry dummies, time dummies (where appropriate). All regressions are IV estimates using as instruments the average length of trials in a province and the number of pending trials per inhabitant in the area. Results are the same if the other instruments sets described in the text are used. Standard errors, reported in brackets, are adjusted for regional clustering. (***): coefficient significant at less than 1%; (**): coefficient significant at the 1%; (*): coefficient significant at the 5%.

Panel A: firm's mark up

	Small	Medium	Large	Very large
Financial development	-0.0408**	-0.0449***	-0.0154	-0.0149
	(0.0171)	(0.0092)	(0.0110)	(0.0125)
Per capita GDP/1000	0.0001	0.0000	-0.0001**	-0.0001
	(0.0001)	(0.0000)	(0.0000)	(0.0001)
Economic delinquency	0.0013	-0.0008	-0.0006	0.0001
	(0.0015)	(0.0011)	(0.0022)	(0.0035)
Log (size)	-0.0031***	-0.0018	-0.0070***	-0.0065***
	(0.0008)	(0.0013)	(0.0025)	(0.0025)
South	0.0035*	0.0054	-0.0018	-0.0076
	(0.0034)	(0.0021)	(0.0043)	(0.0045)
N. Obs.	224,579	58,168	14,099	6,294
Adj. R-square	0.024	0.023	0.031	0.047

Panel B: firm's growth

	Small firms	Medium firms	Large firms	Very large firms
Financial development	0.1517***	0.1084***	0.0483***	0.0077
	(0.0392)	(0.0284)	(0.0138)	(0.0156)
Internally financed growth	0.0848***	0.0784***	0.0972***	0.0899***
	(0.0091)	(0.0092)	(0.0232)	(0.0194)
Per capita GDP/1000	1.67e-05	-3.48e-04	-4.29e-04	-0.0004
	(1.54e-04)	(1.08e-04)	(1.29e-04)	(0.0002)
Economic delinquency	-0.0057*	-0.0017	-0.0091	-0.0084
	(0.0028)	(0.0043)	(0.0046)	(0.0065)
South	-0.0122	-0.0124	-0.0209**	-0.0202
	(0.0086)	(0.0096)	(0.0082)	(0.0122)
N. Obs.	177,454	51,032	13,615	6,397
Adj. R-square	0.062	0.064	0.069	0.068