

# The Cost of Banking Regulation\*

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## **Abstract**

We use exogenous variations in the degree of restrictions to bank competition across Italian regions to study the effect of bank regulation, both during the period it was imposed and after liberalization. We find that more severe restrictions on competition lead to higher cost of credit, less access to credit, and - contrary to expectations- more bad loans. The effect on bad loans increases after liberalization, suggesting that banks operating in a noncompetitive environment become more inefficient in allocating credit. These effects translate into lower aggregate and firms' growth. In fact, the entire growth gap of Southern Italy after World War II can be explained by the effects of banking restrictions imposed in 1936.

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The banking sector is probably the most intensely regulated sector throughout the world. This is hardly surprising. If we espouse a benign view of government regulation, there are several rationales that justify a government intervention. But the same is true if we think government intervention is driven by political and electoral interests, rather than by the desire to address market inefficiencies. The two views of government interventions obviously differ in their implications: one predicts a positive effect of government regulation, the second a negative one.

In spite of the opposite predictions, these two views of regulation are hard to disentangle empirically. According to the benign view of regulation, governments intervene more where markets fail more. Hence, any attempt to estimate the effects of bank regulation would spuriously attribute a negative effect to bank regulation unless the pre-existing degree of market failure is controlled for (an almost impossible task). Only if the extent of regulation was exogenously imposed, we could hope to identify the true effect of regulation.

In this paper we claim that the Italian banking law of 1936 represents such a natural experiment. Introduced after major bank failures, the 1936 law had the objective of enhancing bank stability through severe restrictions on competition. While homogeneously imposed throughout the country, these restrictions had different impact in different areas, because they granted a different flexibility to expand to different types of banks. Thus, an unintended consequence of the law was a different degree of competition across Italian provinces, determined on the basis of the conditions pre-existing the 1936 law. We explore this exogenous variation to assess the impact of restrictions on competition on the structure of the banking industry and on the economic performance of an area.

Before doing so, however, we document that these restrictions were indeed binding. We show that the number of bank branches in a province in 1985 (the last year these restrictions were in place) is deeply influenced by the nature of the restrictions imposed in 1936. More importantly, after deregulation areas more penalized by the law experience more entry.

We then study the effect that restrictions on competition had on the cost, availability and performance of bank loans, and on the economic performance of a province. We find that provinces where the 1936 banking law curtailed bank competition more exhibit higher interest

rates spreads, less access to credit, and a higher percentage of bad loans. These effects are true even after we control for differences between the North and the South of the country. The combination of these three results is particularly noteworthy. In isolation, a higher percentage of bad loans in provinces with less competition could be interpreted as a sign that banks are more willing to lend to risky clients because these clients will find it hard to drop the bank when they become successful (Petersen and Rajan, 1995). But this interpretation would require that firms have more access to credit where there is less competition, and we find the opposite.

Interestingly, the effect of entry restrictions on the percentage of bad loans increases after the liberalization of entry in 1990. This suggests that banks, in a non competitive environment, becomes lazy and inefficient in screening customers and this inefficiency is exposed after liberalization.

These negative effects of regulation on the structure and performance of the banking industry also translate on a negative effect on economic performance. Provinces where the 1936 law allowed less competition grew less fast after World War II, even after controlling for the differences in initial conditions, infrastructure investments, and level of social capital. In fact, the entire growth gap of Southern Italy after World War II can be explained by the effects of banking restrictions imposed in 1936!

We find the same effect on the number and on the rate of growth of existing firms. As predicted by theory, the effect is bigger for smaller firms, which rely more heavily on the local banking market and almost non existent for large and very large firms.

In sum, we find significant real costs to restrictions to bank competition. These costs are not offset by the traditional benefits, such as wider access to credit of small and risky firms. Of course, on the basis of this evidence alone we cannot conclude that the 1936 banking law was welfare decreasing. The main rationale behind the 1936 law and most bank regulation is the desire to ensure stability in the banking system. In spite of the magnitude of the costs we identified, one can still argue in favor of regulation, if this ensures greater stability. After all, in the post World War II period Italy did not experience a major banking crisis as many countries (including the United States) experienced during this period and as Italy itself experienced in the 1930s.

While we cannot address these systemic benefits using the variation across provincial markets, we can, however, try to assess the basis for this claim. If restrictions on competition increase stability, then they should reduce the cross-bank variation in the percentage of bad loans. Yet we do not find evidence in this sense. In fact, provinces with more restrictions on competition experience more variability in the percentage of bad loans across banks than provinces where the banking market was left more competitive. Hence, we do not find any direct evidence of the alleged benefits of bank regulation.

We are not the first to identify the costs of bank regulation. The closest papers to ours are Jayaratne and Strahan (1996) and Dehejia and Lleras-Muney (2003). Both papers use the cross sectional variation in banking regulation across U.S. states to assess the impact of financial development on growth. The major difference is that U.S. states are free to choose their own regulation. Hence, it is difficult to disentangle the effect of regulation from the effects of the political and economic conditions that lead regulation to be enacted or lifted. Such problem does not exist in our sample, since the legislation is homogenous and we use the cross sectional difference in the tightness of this regulation. As we discuss in the text, this cross sectional difference in tightness is determined by historical accidents and is unlikely to be correlated with the phenomena we study.

The rest of the paper proceeds as follows. Section 1 describes the data. Section 2 reviews the features of the 1936 law and explains why the cross sectional variation in its tightness can be considered exogenous. Section 3 analyzes the effects of the banking law on the structure of the banking industry, both before and after liberalization. Section 4 studies the consequences of the banking law on economic performance. Section 5 concludes.

## **I The History of Italian Banking Regulation**

In response to the 1930-31 banking crisis, in 1936 the Italian Government approved a banking law, which subjected all credit institutions to the supervision of the Bank of Italy and of Comitato Interministeriale per il Credito e il Risparmio (CICR) – a special committee formed by the economic ministries and the Governor of the Bank of Italy. This law was intended to protect the banking system from instability and market failure, through strict regulation of entry. In partic-

ular, in 1938 CICR imposed rigid limits on the ability of different types of credit institutions to open new branches and extend credit. Each credit institution was assigned a geographical area of competence based on its presence in 1936 (one or multiple provinces) and its ability to grow and lend was restricted to this area. A further regulation, issued in 1938, regulated differentially the ability of these institutions to grow. National banks could open branches only in the main cities; cooperative and local commercial banks could only open branches within the boundaries of the province they operated in 1936; while Savings banks could expand within the boundaries of the region - which comprises several provinces - they operated in 1936. Furthermore, each of these banks was required to try and shut down branches located outside of its geographical boundaries.

As Table 1 shows, this regulation deeply affected banks' ability to grow. Between 1936 and 1985 the total number of bank branches grew 87%. During the same period the number of bank branches in the United States increased by 1228%.<sup>1</sup> But Table 1 also shows that these restrictions had a differential effect. Savings banks and cooperatives' (both local banks) branches grew on average 138%, while big national banks grew only 70%. Coherent with the letter of the 1936 law and 1938 banking regulation, among local banks Savings banks had more latitude to grow: 152% vs. the 120% of the cooperative and the mere 37% of the other banks (although this category is a mix of local and national banks).

This regulation remained substantially unchanged until the 1980s. The first step toward deregulation was taken only in 1978, when the Bank of Italy approved a plan containing the "desired" number of branches in each province. Authorizations, then, were determined on the basis of this plan. In 1984 the geographical restrictions to lending were broadened so much as to become non-binding (Costi, 2001). Then, in 1986 the procedure to open new branches was eased: the authorization was considered granted unless explicitly denied within 60 days from the request. Finally, any form of authorization and restriction was lifted in 1990. In the ten years of deregulation (1985-1995), the number of bank branches grew by 79%, almost twice as much the rate of growth of bank branches in the United States during the same period (43%).

As a result of this regulation, we will show that the number of bank branches in 1985

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<sup>1</sup>See <http://www2.fdic.gov/hsob/>.

(before the beginning of deregulation) is deeply affected by the number and the type of banks present in 1936. For example in 1936 Tuscany had more branches per million inhabitants than Marche (264 vs. 253), but Tuscany had a national bank operating, which was restricted more than other types of banks in its opportunities to expand locally after 1936, while Marche had none. Furthermore, Tuscany had fewer Savings Banks (10 vs. 13 and in relative terms 3 per million inhabitants versus 10), which instead were relatively less restricted. Hence, regulation constrained the supply of credit more in Tuscany than in Marche.

We exploit these differences across local credit markets in the tightness of financial regulation to study the effects of restriction on competition. For this variation to be a good natural experiment, however, we need to show that i) the number and composition of banks in 1936 is not linked to some characteristics of the region that affect the ability to do banking in that region and of firms to grow; ii) this regulation was not designed with the needs of different regions in mind, but it was “random”; iii) the reason why this regulation was maintained until 1985 has nothing to do with the actual needs of different regions.

## **A Why Regions Differ in their Banking Structure in 1936**

The banking structure in 1936 was not the result of market forces. In 1927 there were 4,055 banks with 11,837 branches located in roughly 5,000 different towns.<sup>2</sup> In 1936 the number of banks had dropped to 2,834, with 800 of them in liquidation. Hence, the total number of branches was only 7,656 covering just 3,920 towns.

This drop is a response to two economic crises: the 1926 deflation triggered by the forced revaluation of the Lira and the consequence of the international crisis of the 1930s. But the banking sector response to these crises was not shaped only by market forces: it was greatly affected by the intervention of the Government.

While the banking sector grew without much regulation until 1926, that year a law gave the Government the ability to force mergers or close branches of Savings Banks. Between 1926 and 1929 the number of savings banks dropped from 200 to 100.<sup>3</sup> Furthermore, during the banking crisis of 1930-33, the Government massively intervene to bail the major national banks and the

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<sup>2</sup>Bank of Italy (1977), p XXIV.

<sup>3</sup>ibid, p XXIV.

Savings Banks, but chose to let smaller commercial banks and cooperative ones fail. Hence, between 1931-33 stock-company banks went from 737 to 484 and cooperative banks from 625 to 473, while Savings Banks went from 100 to 91.<sup>4</sup> Finally, the 1926 law introduced a Bank of Italy authorization for new entry, which the Bank used very aggressively. In spite of the very limited requests for entry, the bank of Italy authorized only one third of the requests.<sup>5</sup>

As a result, the number of bank branches per inhabitants in 1936 is not very highly correlated with the level of economic development of the region, as we can see from Figure 1. The highest concentration was in Veneto, a region at the time very underdeveloped. Unfortunately, data on GDP per capita by province are not available in 1936, so we use the earliest available date (1951), instead. Table 2 shows the correlation between number of bank branches per inhabitants in 1936 and the logarithm of 1951 GDP per capita. If we do not control for a North-South divide, the GDP per capita is positively and statistically significantly correlated with number of bank branches, but the R-squared is only 0.09. When we control for South, however, the correlation between number of bank branches and the logarithm of GDP per capita becomes negative, albeit not statistically significant. Thus, if we control for South we can say that the number of bank branches per inhabitants in 1936 is not positively correlated with unobserved factors that drive economic development.

The same can be said for the other characteristics of the 1936 banking system that we use in our analysis. The regional diffusion of different types of banks reflect the interaction between the different waves of bank creation and the history of Italian unification.

Savings banks were the first to be established in the first half of the 19th century (Polsi, 1996). They started first in the regions that were under the domination of the Austrian Empire (Lombardia and the North East) as an attempt to transplant the experience of Austrian and German charitable institutions. They later gradually expanded to nearby states, especially Tuscany and the Papal States.

Savings banks were typically initiated by local notables and controlled by them. The 1936 distribution of Savings Banks deeply reflects this history, with high concentration in the North East and in the Center of Italy. As in the previous case, the correlation with 1951 GDP per

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<sup>4</sup>ibid.

<sup>5</sup>ibid, p XXV.

capita (Table 2) is positive, but after we control for South this positive correlation disappears.

Commercial banks developed only after Italian Unification (1861): 150 joint stock banks were created between 1863 and 1873. In particular toward the end of the 19th century, German capitals moved to the richest centers (Milan, Genova) to replicate the model of the universal bank, which had triumphed in Germany during the previous two decades. By contrast, the other regions followed the footsteps of the cooperative movement, creating cooperative banks. Partners in cooperative banks were all local inhabitants, thus these banks had little interest in establishing branches in other towns or villages (Polsi, 1996).

Hence, the diffusion of local banks versus national banks tends to be negatively correlated with economic development at that time. This is illustrated by Table 2. The number of cooperative banks per inhabitants is negatively and statistically significantly correlated with the logarithm of 1951 GDP per capita. If we do control for the North-South divide, this negative correlation becomes even stronger. The fraction of local branches that are controlled by local banks is positively but not significantly correlated GDP per capita, but when we control for the North-South divide, the correlation becomes negative and statistically significant.

In sum, the 1936 law froze the Italian banking system at a very peculiar time. In every dimension (except the presence of large national banks) the South of Italy appears financially underdeveloped. The main reason is probably the geographical distance from Germany and Austria, from where both the new organizational ideas and the much needed capital were coming from. Ironically, even the positive exception – the presence of large national banks – will turn out to be a handicap following the introduction of the 1936 law. By contrast, the structure of the banking industry in the rest of the country was the result of historical accidents and forced consolidation, with no connection to the level of economic development at that time.

## **B Why Did the 1936 Law Favored Savings Banks?**

Establishing that the initial conditions were "random" is not sufficient to qualify the 1936 law as a natural experiment. We also need to understand why the law had a bias in favor of Savings Banks and why this bias survived the fall of the Fascism regime.

The first question can be easily addressed. As we already mentioned, Savings Banks were



created and controlled by the local aristocracy. In 1933, for instance, 16% of the Savings Banks' directors were noble (Polsi, 2003). Traditionally, nobles were big land owners, who strongly supported the Fascism regime. This political connection is also demonstrated by the fact that 65% of Savings Banks' directors had the honorific title of "Cavaliere" (knight). This title was granted by the King and was awarded to local notables who were well politically connected. Hence, the first reason why the Fascism regime heavily supported Savings Banks both during the crisis and in the drafting of the 1936 law is that Savings Banks were controlled by strong allies of the regime.

This alliance, and possibly the main reason for the regime's support, is also shown in the destination of its profits. By statute, Savings Banks were non-profit organizations, which had to distribute a substantial fraction of their net income to "charitable activities". Until 1931 these donations were spread among a large number of beneficiaries. Subsequently, however, the donations became more concentrated toward political organizations created by the Fascists, such as the Youth Fascist Organization (Opera Balilla) and the Women Fascist Organization (OMNI), (Polsi, 2003). Not surprisingly, the Fascist regime found convenient to protect its financial supporters!

Only apparently more complex is the position of the regime towards the large commercial banks. While in 1931 and 1932 it intervened to bail them out, in 1936 it penalized them with the ad hoc restrictions imposed by the new banking law. The bailout, however, was not driven by political expediency, but by economic necessity. A failure of Credit Italiano and Banca Commerciale (the two largest national banks) would have caused a meltdown of the already weak Italian financial system. Hence, the regime had no choice but to intervene.

In drafting the new banking legislature, however, the regime showed no sympathy towards these banks. Having experienced first hand the threat posed by big banks to the stability of the entire financial system, the legislators chose to balance the system by limiting the growth of the largest players. To this aversion, however, might have contributed the lack of sympathy between the Fascist regime and the biggest of these banks, Banca Commerciale. Paradoxically, even after nationalization this bank showed to be quite impermeable to the pressure of the regime. In fact, its research department became the breeding ground of what will become the

Italian anti-Fascist intelligentsia after WWII.

## **C Why Was This Structure Maintained for so Long?**

These differential restrictions, thus, have a clear rationale within the Fascist regime. But when in 1946 the Bank of Italy re started to authorize the creation of new branches, "the new authorizations were mainly given to Savings banks and – to a smaller extent – to cooperative banks and local commercial banks" (Cotula and Martinez Oliva , 2003). Hence, the two biases exhibited by the Central Bank during the Fascist period – hostility toward national banks and favor towards Savings Banks – continued after the war. Why?

All the historians mention the quest for stability as an important factor. The memories of the 1930s crisis was still very vivid in the Central Bank administration and continued to inform its action. This explanation could at best account for the hostility towards large national banks, but what about Savings banks?

One opinion – prevalent among historians inside the Central Bank – is that this policy was aimed at promoting the investment of local savings in loco, supporting the less developed areas (Albareto and Trapanese, 1999). This argument, however, is based on the wrong assumption that excess deposits cannot be "recycled" in the interbank market, as it indeed occurred.

A second, more credible, interpretation has it that Donato Menichella (governor of the Bank of Italy from 1948 to 1960) promoted the development of local banks at the expenses of national State-owned banks "for the desire to see the power of the Central Bank vis-à-vis the banking system strengthened" (De Cecco, 1968, p. 67). De Cecco, however, is not entirely clear on channel through which this relation worked. One possibility is that stronger national banks could acquire too much lobbying power vis-à-vis the Governor, reducing his autonomy. Another possible channel is the institutional structure of the Bank of Italy. After 1936 the Bank of Italy was formally owned by the State-owned national banks and by the Savings banks, which jointly elected the Central Bank's Board. The Board nominated the Governor, who was subject to the approval of the Government. Since the State-owned national banks were much more concentrated, by increasing the power of the fragmented Savings banks, the Governor could play a "divide et impera" strategy, to maximize his autonomy. Regardless of the specific

channel, however, this interpretation suggests that the hostility against the big national bank was not determined by economic reasons, but was the result of a power struggle within the Government bureaucracy.

While both the previous arguments have some merits, we think that the main reason for these policy biases is that the Christian Democratic party inherited the political clientele of the Fascist Party, including the network of local notables and the right to direct Savings banks' donations to the favorite charitable organizations. By inheriting this network, the Christian Democratic party inherited also the Fascists' party interest in promoting Savings banks at the expenses of all the other types of banks. The Savings banks also maintained their advantageous position relatively to other local banks because they were government owned. After the second world war government banks were controlled by politics and especially from the mid-fifties the practice of political appointments of top executives in state-owned banks became the way for politics to insure strong ties with the public banking system.

In sum, for all the historical reasons described above, in 1936 Italian regions had widely different banking systems. The 1936 banking law chose to regulate entry on the basis of these initial conditions. As we saw in Table 2, these restrictions seem to have limited the banking sector's ability to grow, and differentially so depending on the initial composition of banks in the region. This table alone, however, is unable to show whether this combination of different initial conditions and differential regulation really had an effect not just on the types of banks present before deregulation but also on the level of the banking activity. We will consider this in Section III, but before doing this we need to describe the data we will use.

## II Data Description

We use four dataset. We collected the first dataset that contains information at the province and regional level on the number of registered firms, their rate of formation, and the incidence of bankruptcy 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). Tables 3a and 3b report summary statistics for these data distinctly for variables at the province and regional level. The Italian territory is divided into 20 regions and each region is made up of a

number of provinces. Since new provinces have been created over time, depending on the years considered we will be working either with the 95 province classification or with the one with 103 provinces.

The second dataset, containing information about households, is the Survey of Households Income and Wealth (SHIW). This survey, which is conducted every two years by the Bank of Italy on a representative sample of about 8,000 households, collects detailed information on Italian household income, consumption, wealth and portfolio allocation across financial instruments. For each household, the data also contain information on characteristics of the households' head, such as education, age, place of birth, and residence. An interesting feature of this survey is that each household is asked to report whether it faced any problem in obtaining loans from financial intermediaries. We use this information to create an indicator variable for households that were rationed in the market either because were turned down or discouraged from borrowing. Table 3c reports the summary statistics for this sample.

The third dataset draws data from the 1988-2001 Survey of Investment in Manufacturing Firms (SIM) which is run yearly by the Bank of Italy on a sample of about 1,000 firms with at least 50 employees. The main purpose of the survey is to collect information on firms fixed investment, realized and planned for the future. It also collects a few information on firms demographics and hiring and firing decisions. Since 1988, the Survey of Investment in manufacturing ask questions on access to the loans market similar to those asked to households in the SHIW, allowing us to construct an indicator for whether the firm was rationed in the loans market. Table 3d shows summary statistics for this dataset.

Finally, the fourth 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 3e reports the summary statistics for these data.

### **III Effects of banking regulation on the banking industry**

#### **A Effects on the structure of the industry**

To assess the effects of different initial conditions on the level of the banking activity in Table 4 we test whether the characteristics of the 1936 banking law have any impact on the structure of the banking industry in 1985, when deregulation started. To characterize the regional structure of the banking system in 1936 we use four indicators that are inspired by the 1938 anti-competitive regulation: (1) the number of bank branches per 1000 inhabitants in the region in 1936 (regions with more branches in 1936 should have suffered less from the freeze); (2) the share of bank branches owned by local banks over total branches in a region as of 1936 (the higher this ratio the less binding should have been the CICR regulation); (3) the number of Savings banks (the higher the number of Savings banks in 1936, the less tight the 1936 regulation was; and (4) the number of cooperative banks per thousand inhabitants in the region in 1936 (conditional on the proportion of local banks, cooperative banks were relatively disadvantaged in their ability to grow). If the 1936 law had any bite, we should find opposite effects of these last two indicators.

As Table 4 column I shows, provinces with more bank branches per thousand inhabitants in 1936 also have more bank branches per thousand inhabitants in 1985. This is hardly surprising, since it might simply reflect that certain provinces are richer and so have more banks. But this effect persists, albeit smaller, even after we control for the logarithm of the value added per capita in the province (column II). Even this reduced effect is very noticeable quantitatively. A province that started with a level of bank branches per inhabitants one standard deviation higher in 1936 had 40% more branches per inhabitants in 1985.

More interestingly, the proportion of branches controlled by local banks in 1936 affects the number of bank branches in 1985. As we said, local banks were given more room to expand locally compared to national banks. This could explain why the total number of bank branches

increased more in provinces where the banking market was dominated by local banks in 1936. This effect is also quantitatively large. One standard deviation increase in the fraction of branches controlled by local banks in 1936 leads to a 6 percentage points increase in the number of bank branches per inhabitants in 1985 (a 20 % increase).

As we said, among local banks the 1936 law granted more room to expand to Savings banks, rather than to cooperative banks. Once we control for the fraction of branches controlled by local banks this distinction does not seem to make a huge difference. As expected, in column I the coefficient on the number of cooperative banks is negative and statistically significant, but when we insert the log of the GDP per capita the significance disappears.

These four variables that summarize the structure of the banking system in 1936 can explain 27 percent of the provincial variation in the number of bank branches before liberalization. Importantly, this effect is not just a North-South divide. While *ceteris paribus* Southern provinces have fewer bank branches (see column III of Table 4a), the proportion of local banks remains statistically significant after we insert a South dummy.

A better way to see whether the characteristics of the 1936 banking law were binding is to focus on what happens *after* the liberalization. Provinces where initial conditions were more conducive to growth (more branches in 1936, more local branches and more Savings banks) should experience less growth in the number of branches after liberalization, while provinces with more cooperative banks (which were relatively disadvantaged) should experience more growth. This is what we test in Table 5, where we look at the number of new branches created between 1985 and 1995. The results show that provinces with more branches in 1936 experience less expansions by the incumbents after 1985 and so do provinces with more savings banks as of 1936, while provinces with more cooperative branches in 1936 experience more expansion by incumbents after 1985. These results are particularly strong if we control for Southern regions (column III) or exclude the South from the regression (column IV). The early 1990s are years of major banking crises in the South. So Southern regions exhibit less growth regardless. Once we control for this fact, the differential effect of Savings banks and cooperatives is very strong.

Overall, these results are very supportive of the notion that the differential freezing in bank expansion imposed by the 1936 banking law represented an important institutional bottleneck

in the supply of credit. In what follows we are going to study the effect of this bottleneck on the cost of credit, on the access to credit, on the efficiency of the credit allocation and on the overall economic performance. Unfortunately, not always do we have data from the period before liberalization. Thus, depending on the data set we will use the earliest period we have available.

## **B Effect on the cost of credit**

The first aspect we investigate is the effect of the 1936 law on the cost of credit. Table 6 presents some estimates using aggregate provincial data for 1986 (the first year we have data for). The first three columns show that the average lending rates in a province are affected by the bottlenecks created by the 1936 law. As expected, we find that provinces with more bank branches in 1936 exhibit lower lending rates in 1986 and so do provinces where local banks controlled more of the credit and where savings banks were more diffuse (albeit this effect is not statistically significant). By contrast provinces where cooperative banks were more diffuse in 1936 have *ceteris paribus* higher lending rate in the 1980s.

These effects are also quantitatively big. One standard deviation increase in the number of branches per thousand inhabitants in 1936 reduces the lending rate by 119 basis points, while one standard deviation increase in the proportion of local banks in 1936 decreases the lending rate by 52 basis points. By contrast, one standard deviation increase in the number of cooperative banks in 1936 increases the lending rate by 114 basis points. Only the effect of savings bank is quantitatively small: a one standard deviation increase reduces the cost of credit 11 basis points.

Unfortunately, this effect is highly collinear with the Southern region dummy. When we control for it (see column II) the coefficients of the 1936 characteristics more than halve and lose statistically significant. One potential confounding effect is that the pool of borrowers might differ across provinces. In column III we also try to control for these differences in risk using the average fraction of firms that go bankrupt every year, but this variable turns out to be insignificant. The only possibility to address this problem would be to use micro data.

Differences in risk, however, should not affect the rate paid on deposits. This is what we

look at in Columns IV to VI of Table 5a. Here we do not find much of an effect of the 1936 characteristics of the banking market, except for the number of savings banks. More savings banks imply higher deposit rates. One standard deviation increase in the number of savings bank leads to a 19 basis points increase in the deposit rates.

Finally, the last three columns of Table 6a look at the spread between lending rates and deposit rates. Not surprisingly, they behave very similarly to the lending rates (which are the major source of variation in the spread), with the 1936 characteristics of the banking market having a strong impact on the spread. As before this impact is reduced, if we control for the North-South dichotomy.

A way to control for differences in local characteristics is to analyze the changes in rates following liberalization. We expect that provinces with good initial conditions will experience less of a change in rates after liberalization. We test this hypothesis in Table 6b. Since, as we will show momentarily, liberalization brought a change also in the pool of borrowers, we focus mainly on the change in the deposit rate. As Columns 1 to 3 show, provinces with higher number of savings banks in 1936 (which in Table 5a we saw had higher deposit rates before deregulation) experience less of an increase in rates after deregulation.

## **C Effect on the supply of credit**

The cost of credit is not the only important dimension of the credit policy. The availability is at least as important. For this reason, we study the effect of the bottlenecks created by the 1936 law on the access to credit of households and firms.

Normally, we do not observe when individuals or firms are shut off from the credit market, but only whether they borrow or not. 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. More specifically each household head 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.

In Table 7a we use the answers to these questions to estimate the impact of the 1936 banking market characteristics on the supply of credit. We use the two earliest survey available 1989-91. As Table 7a column I shows, households living in provinces that had more bank branches, more local banks, and more savings banks in 1936 are significantly less likely to be shut off from the credit markets. By contrast, if they lived in provinces with more cooperative banks, the probability of being shut off from the credit market increases. This result is true even controlling for 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 local differences in the riskiness of potential borrowers we control in this regression for the percentage of firms that go bankrupt in the province (average of the 1992-1995 period). We also add to the regression the percentage of non-performing loans on total loans in the province; this control should eliminate the potentially spurious effects of over lending<sup>6</sup>. Finally, we insert calendar year dummies and an indicator of the size of the town or city were the individual lives. These effects are robust to the insertion of a dummy for Southern regions (column II).

To study the effect of deregulation on the supply of credit to households we pool the two earliest surveys (1989 and 1991) with the two latest ones (1999-2001) and test whether the effects of the 1936 variables disappear after deregulation. As Columns III and IV of Table 7a show, all the 1936 variable interacted with a deregulation dummy have a coefficient which is

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<sup>6</sup>If in certain areas banks lend excessively (i.e., even to non creditworthy individuals), it would be easier to have access to credit, but we can hardly claim this reflects a better functioning local market for loans. The percentage of non performing loans should eliminate this potential spurious effect.

opposite in sign and similar in magnitude to the coefficient of 1936 variable. The sum of these coefficients is not statistically different from zero. Hence, as to be expected the effect of the 1936 variables disappear after deregulation.

In Table 7b we repeat the same analysis with the sample of firms from the Survey of Investment in Manufacturing. In this survey firms are asked three questions: a) "In the previous year, at the interest rate that was prevailing in the market did your firm want a larger volume of loans?" b) "Was your firm willing to pay a slightly higher interest rate in order to obtain the extra loan?" c) "Did your firm apply for the obtaining more loans but was turned down?". These three questions, which mirror the questions asked in a Bank of Italy SHIW, can be used to identify credit rationed firms.

We defined as rationed all firms that applied and were turned down, i.e. all those that answered "yes" to question (c).<sup>7</sup> We use this indicator as our dependent variable in Table 7b. We control for firm size (the log of employment), nature of ownership (state owned or private), whether the firm is hiring or firing workers (to proxy for perceived future growth opportunities), the investment/sales ratio, and the share of sales abroad. Regressions also include a full set of year dummies to account for the business cycles and contractions/expansions in money supply.

Since each survey only includes 1,000 firms and since the fraction of rationed firms in normal times is small (around 2.5-3 percent of the sample), in order to obtain sufficient information to carry the estimates, we pool the surveys for the earlier years 1988-1996, which include the 1993-1995 recession when the share of rationed firms peaked to 13 percent(in 1993). We use the observations for the later years (1998-2001) to assess whether the financial liberalization had any effect on credit availability to firms.

Our sample does not include the very small businesses (those with fewer than 50 employees), which are likely to be the ones most affected by differences in the supply of local finance. Thus, if we find an effect on credit availability to firms of the 1936 legislation, this is likely to be a lower bound of the true effect on the population of Italian firms.

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<sup>7</sup>A more narrow definition only considers as rationed firms that were turned down and were willing to pay a higher interest rate in order to get the extra money (i.e. answered "yes" to (b)). For these firms the borrowing constraint should be more binding than for those that are not willing to pay more for being funded. Results are the same if this definition is used.

Interestingly, as shown in the first column of the Table 7b the results are extremely similar to the one obtained for households. Firms located in provinces that had more local banks and more savings banks in 1936 are significantly less likely to be shut off from the credit markets. By contrast, if they lived in provinces with more cooperative banks, the probability of being shut off from the credit market increases. All these effects are statistically significant; furthermore are robust to the introduction of a dummy for the South (column II), reassuring that they are not driven by our measure of the tightness in banking regulation capturing unobserved North-South differences.

In the third and fourth column of Table 7b we re-estimate the equation on the pooled sample that includes the pre and post financial liberalization years and interact the 1936 variables with an indicator for financial liberalization, set equal to 1 for the years 1998-2001. Results are again consistent with the implication that financial liberalization should have stronger effects in areas where regulation was tighter. This is indeed the case: the interaction with the number of saving banks in the region is positive and statistically significant and that with the number of cooperative banks is negative, but less precisely estimated. Furthermore the size of these coefficients imply that differences in regulation across regions become unimportant once the liberalization process has come to completion, by the end of the 90s.

## **D Effect on the diffusion of usury**

One of the negative side effects of shortage of credit is the diffusion of abusive forms of lending, which often rely on illegal ways to extort repayments. If the effects of the 1936 restrictions on the supply of credit we just estimated are real, they should have consequences also on the diffusion of usury.

Of course, one serious problem is how to measure such diffusion, given that usury is illegal. The problem is so severe in Italy that 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.

In the first three columns of Table 7c we use this indicator as our dependent variable. Usury

is less diffused where in 1936 there were more bank branches, relatively more local bank branches, more savings banks, and fewer cooperative banks. All these effects, which are consistent with the previous results, are statistically significant. They are also robust to controlling for the log of GDP per capita and for Southern regions.

In the last three columns of Table 7c we repeat this exercise using as indicator of usury the number of denounced cases of usury. The advantage of this indicator is that is more directly related to what we want to measure. The disadvantage is that suffers from a sample selection. In certain areas, possibly where usury is more widespread, cases are not denounced for fear of retribution or because the victim expects no benefit from the denounce. Nevertheless, it is interesting to explore the robustness of our result to different indicators.

In the basic specification (column IV) the results are substantially identical to the one using the aggregate indicator and so are in column V, where we control also for GDP per capita. It is only when we control for South (column VI) that the results lose statistical significance.

Overall, however, the results are extremely consistent: where the 1936 legislation allowed less room for competition there more households and firms are rationed.

## **E Effect on the efficient allocation of credit**

One of the main objectives of the 1936 law was to restrict competition, so to reduce the misallocation of credit and the consequent instability. To assess the success obtained on this dimension, we look at the percentage of bad loans.

The first three columns of Table 8 focuses on the average percentage of bad loans by province before deregulation (1984-5). The results here are more mixed. Except for the number of savings banks, all the indicators of higher competition have a negative sign and the indicator of less competition (number of cooperative banks) has a positive sign. Thus, higher competition seems to be associated to fewer bad loans. But only the number of bank branches in 1936 has a statistically significant coefficient and this statistical significance is not robust to the insertion of the South dummy. On the other hand, the number of savings banks (which is associated with more competition) is positively related to the percentage of bad loans. One possible interpretation is that savings banks had been allowed to grow in exchange for political

loans (loans to entrepreneurs affiliated with the dominant political parties). Hence, their worse performance.

In the third column we try to control for differences in risk across provinces by inserting the proportion of firms that go bankrupt. As expected, this variable as a positive coefficient, but it is not statistically significant, suggesting it is not a great control. Hence, to eliminate confounding effects we look at the variation in the proportion of bad loans following deregulation. Here, the effect is clear. Provinces that were relatively more competitive before deregulation experience a less severe increase in the percentage of bad loans than provinces that were more shielded from competition.

Fewer bad loans might suggest a better allocation of credit on average, but not necessarily a more stable system. Stability depends crucially on the distribution of bad loans across banks. For this reason, in Table 9 we calculate the standard deviation across banks headquartered in a province of the percentage of bad loans. Unfortunately, the first data we have available are for the years 1988-89. During this period the variability of bad loans across banks is higher where there are fewer bank branches, fewer local banks, fewer savings banks, and more cooperative banks. Hence, the variability is higher where there is less competition.

When we look at the variation during the last years of deregulation (1991-1995), the effect of the 1936 conditions tend to die out. Hence, further from creating more stable banks, restrictions on competition seem to have allowed inefficient banks to survive.

## **IV Effects of banking regulation on growth**

Finally, we explore whether banking regulation affected the level of local growth. We investigate this question using both micro and macro data. If banking regulation affects the availability of loans it should also affect the number of firms operating in a given area and the rate at which existing firms are able to grow. We finally test whether banking regulation had an impact on the aggregate regional rate of growth.

## **A Effects on the number of firms**

Table 10 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. Column I shows that areas that were more developed in 1951 have higher number of firms. The difference between the most and the least economically developed region in 1951 can explain a difference of 19 firms per 100 people. However, the effect of the level of economic development in 1951 drops by 50 percent and becomes statistically insignificant when we insert a dummy for the Southern regions (Column II). This dummy has a negative but statistically insignificant impact on the level of firms. In Column III we introduce a potential important determinant of entrepreneurship: the level of social capital in 1990 measured as in Guiso, Sapienza, and Zingales (2004) as the average participation to national referenda. This measure has a positive and significant impact on the number of firms operating in the province. Finally, when we introduce a set of variables that describes the structure of the local banking market as of 1936 we find that while the effect of social capital remains statistically significant, in provinces with more bank branches and more savings banks in 1936 there are significantly more firms. By contrast, in provinces with more cooperative banks, the number of firms is lower. This effect is consistent with our findings on the effect of banking regulation on the availability of credit. This result is also 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.

## **B Effects on firms' rate of growth**

We also explore whether banking regulation in 1936 has effects on firms' rate of growth. Existing firms can, at least in part, finance growth via internally generated cash. Thus, we expect banking regulation 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. 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 judicial inefficiency, the GDP per capita in the province in 1951 and, of course, our indicators of the banking structure in 1936. A full set of calendar year dummies account for any aggregate shock to nominal sales growth, including inflation.

In column I of Table 11 we estimate the regression for the whole sample. The results are consistent with our previous findings. In provinces with more bank branches, more local banks, and more savings banks in 1936 firms grow faster than in other areas. By contrast, in provinces with more cooperative banks, firm's growth is lower. These effects are statistically significant taken one by one and jointly, as shown by the F test reported at the bottom of the table. In Column II through IV we examine whether banking regulation has a differential effect depending on the size of the firm. For this we split the sample into four groups. 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. As predicted by theory, the effect is bigger for smaller firms, which rely more heavily on the local banking market and almost non-existent for large and very large firms. Furthermore while we reject the assumption that the coefficients on the four variables characterizing the structure of local banking in 1936 are jointly statistically equal to zero (see the value of the F test), this cannot be rejected for the group of very large firms. We regard this evidence as particularly strong. In fact, a skeptic could argue that our measures of banking structure in 1936 may be proxying for some unobserved factor that also affects economic growth, rather than reflecting the opportunities regions had to develop financially as a consequence of regulation. It is much harder to expose the differential impact of our indicators across firms of different size to this criticism; instead, the finding follows

if financial regulation altered the ability of local markets to develop financially.

## **C Effects on aggregate growth**

Since we have seen that banking regulation affected the number and the growth of firms, it should also have an impact on the aggregate rate of growth. We test this prediction in Table 12. We measure growth as the rate of growth of per capita GDP in a province between 1951 and 1999. Per capita GDP is the per capita net disposable income in the province in million liras. We control for 1951 GDP per capita; the quality of infrastructure present in a province (average 1926-1951); a south dummy. After controlling for all these variables, the level of banking regulation has a statistically significant impact on growth (columns IV-VI).

## **V Conclusions**

We use exogenous variation in the tightness of anticompetitive regulation in Italy to study the effect of banking regulation. We find that restrictions on competition have severe effects on the cost and the supply of credit. These costs do not seem to be compensated by a better allocation of credit nor by a more stable banking sector. By contrast, these restrictions have important effects on economic growth. In fact, the entire growth gap of Southern Italy after World War II can be explained by the effects of banking restrictions imposed in 1936.

The cost of regulation seems to impact also the success of liberalization. Provinces that experienced less competition in the past are more likely to show a bigger surge in bad loans after liberalization.



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## Table 1. Number of banks and bank branches:1936-1974

The table reports the number of banks and bank branches in 1936 and 1974 divided by type of banks. Source: Bank of Italy.

Number of bank branches			
	in 1936	in 1985	% change 1936-85
National state-owned banks	1542	2623	70.10%
Savings Banks	1448	3643	151.59%
Cooperatives	1161	2555	120.07%
Others	2121	2898	36.63%
<b>Total</b>	<b>6272</b>	<b>11719</b>	<b>86.85%</b>

  

Number of banks			
	in 1936	in 1985	% change 1936-85
National state-owned banks	8	9	12.50%
Savings Banks	91	73	-19.78%
Cooperatives	329	86	-73.86%
Others	1590	97	-93.90%
<b>Total</b>	<b>2018</b>	<b>265</b>	<b>-86.87%</b>

**Table 2. Correlation between the banking structure in 1936 and economic development**

The dependent variables describe the regional banking structure in 1936. In the first two columns the dependent variable is the fraction of bank branches owned by local banks in 1936. In columns 3 and 4 the dependent variable is the number of savings banks per 1000 inhabitants in the region in 1936. In columns 5 and 6 the dependent variable is the number of cooperative banks per 1000 inhabitants in the region in 1936. In columns 7 and 8 the dependent variable is the number of bank branches per 1000 inhabitants in the region in 1936.

	Fraction of bank branches owned by local banks (1936)		Savings banks per 1000 inhab. in the region (1936)		Cooperative banks per 1000 inhab. in the region (1936)		Bank branches per 1000 inhab. in the region (1936)	
Log of provincial value added pro capita in 1951	0.076 (0.047)	-0.135*** (0.048)	0.003*** (0.001)	0.001 (0.001)	-0.004** (0.002)	-0.006*** (0.002)	0.111** (0.045)	-0.042 (0.082)
South dummy		-0.238*** (0.033)		-0.003*** (0.001)		-0.002* (0.001)		-0.174** (0.066)
Observations	95	95	95	95	95	95	95	95
R-squared	0.027	0.381	0.126	0.271	0.050	0.079	0.095	0.407

### **Table 3. Summary statistics for the samples used in estimation**

Panel A and B report summary statistics of the major characteristics of each province. Panel C reports summary statistics for the households in the SHIW for the surveys 1989, 1991, 1998, and 2000. Panel C does the same for firms from INVIND. 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 real wealth of the household. South is a dummy equal to one if the household lives in a region south of Rome. Per capita GDP is the per capita net disposable income in the province in millions of liras in 1990. GDP per capita in 1951 is the 1951 per capita value added in the province expressed in 1990 liras. Judicial inefficiency is the number of years it takes to have a first-degree judgment in the province. Number of firms present per 100 people living in the same area (average of 1996-98, source ISTAT). 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. South is a dummy equal to one if the firm is located in a region south of Rome.

### Panel A: Provincial variables (N=95)

	Mean	Median	Standard Deviation	1st percentile	99th percentile
GDP per capita in 1951	3824.412	3661.079	1374.889	2094.002	8379.316
GDP per capita in 1991	15530.56	16072.5	3810.31	8917.045	25720.48
Bank branches per millions inhabitants (1985)	0.28	0.259	0.179	0.036	1.152
Change of bank branches (1985-95)	0.109	0.065	0.138	0.006	0.999
Loan rate (84-85)	16.548	16.331	1.223	14.476	19.61
Deposit rate (84-85)	8.335	8.34	0.556	6.13	9.76
Rate spread (84-85)	8.213	7.683	1.459	5.806	11.457
Change in deposit rate (86-94)	-3.411	-3.44	0.438	-4.78	-2.16
Change in rate spread (86-94)	-0.681	-0.8	0.778	-2.336	1.16
Proportion of bad loans (84-85)	0.027	0.025	0.015	0.007	0.085
Change in the proportion of bad loans (86-95)	0.012	0.004	0.031	-0.053	0.098
Return on assets	0.704	0.616	0.405	0	2.04
Change in return on assets	-0.279	-0.255	0.423	-1.551	0.913
Variability of bad loans across banks (84-85)	6.713	5.795	4.323	0.371	21.933
Change in variability of bad loans across banks (86-95)	-1.485	-1	2.96	-10.723	4.752
Number of firms per 100 inhabitants in 1995 (obs=103)	9.188	9.027	1.548	6.167	12.767
Social capital	80.02	83.017	8.419	62.1	90.817
Growth rate in value added per capita between 1951 and 1999 (%)	0.031	0.032	0.006	0.016	0.043
Total investment in public infrastructure 1926-1951	1.522	1.442	0.837	0.171	3.622

### Panel B: Regional variables (N=19)

	Mean	Median	Standard deviation	1st percentile	99th percentile
Branches per 100,000 inhabitants in the region in 1936	193.73	190.99	110.05	57.05	530.50
Fraction of branches owned by local banks in 1936	0.35	0.37	0.18	0	0.59
Number of savings banks per 100,000 inhabitants in the region: 1936	0.75	0.74	0.17	0.46	0.97
Number of cooperative banks per 100,000 inhabitants in the region: 1936	2.69	1.88	3.19	0	10.17
Incidence of cooperatives	0	-0.36	1	-1.11	2.34

**Panel C: Households sample (N=47,748)**

	Mean	Median	Standard Deviation	1st percentile	99th percentile
Credit rationed	0.026179	0	0.159669	0	1
Financial liabilities	0.644576	0	5.113731	0	10
Number of people living in the household	2.952564	3	1.356721	1	6
Age	53.54373	53	15.20849	25	86
Net disposable income (000 lira)	4.281415	3.49374	3.414256	0.54	16.07994
Net disposable income (squared)	29.98741	12.20622	121.7991	0.2916	258.5644
Net real wealth	21.23139	11.4	43.76575	0	162.4
Net real wealth (squared)	2366.173	129.96	67064.46	0	26373.76
Size of the town	2.452836	3	0.984335	1	4
Years of schooling	8.389168	8	4.682775	0	18
Dummy if male	0.755906	1	0.429553	0	1
Dummy if married	0.726921	1	0.445546	0	1

**Panel D: Firm level data: Survey of Manufacturing Firms (N=14,565)**

	Mean	Median	Standard Deviation	1st percentile	99th percentile
Credit rationed	0.0451232	0	0.207581	0	1
Dummy=1 if state-owned	0.04144828	0	0.199331	0	1
Log of sales	5.459437	5.32301	1.238917	3.135494	8.908965
Dummy=1 if firm has hired employees during the year	0.43165251	0	0.495322	0	1
Dummy=1 if firm has fired employees during the year	0.48966805	0	0.499908	0	1
Ratio of investment over sales at $t - 1$	0.13833931	0.03344481	5.682062	0	0.476459
Employees	675.35961	205	2939.194	23	7398



**Table 4. Effects of the 1936 banking regulation on the banking structure before deregulation**

The dependent variable is the number of bank branches per 1000 inhabitants in 1985. 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 constant is also included in the regressions (coefficient not reported).

	Number of bank branches on population		
	I	II	III
Fraction of bank branches owned by local banks in 1936	0.431** (0.166)	0.365** (0.172)	0.325* (0.181)
Number of savings banks per 1000 inhabitants in the region in 1936	-1.359 (4.769)	-2.942 (5.883)	-3.841 (5.658)
Number of cooperative banks per 1000 inhabitants in the region in 1936	-7.556* (3.967)	-5.035 (4.917)	-3.901 (4.813)
Bank branches per 1000 inhabitants in the region in 1936	0.537*** (0.141)	0.427** (0.164)	0.368** (0.161)
Log of provincial value added pro capita in 1951		0.085 (0.122)	0.063 (0.125)
South dummy			-0.036 (0.032)
Observations	95	95	95
R-squared	0.268	0.272	0.274

**Table 5. Effects of the 1936 banking regulation on entry after liberalization**

The dependent variable is the difference in the number of branches (in thousands of units) between 1985 and 1995. 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 constant is also included in the regressions (coefficient not reported).

	Change in the level of branches 85-95			
	I	II	III	IV
Fraction of bank branches owned by local banks in 1936	.171 (.105)	.235 (.149)	-.068 (-.126)	-.120 (-.183)
Number of savings banks per 1000 inhabitants in the region in 1936	-8.427** (3.828)	-8.079 (4.956)	-15.404** (6.226)	-20.415** (8.492)
Number of cooperative banks per 1000 inhabitants in the region in 1936	-2.790 (2.719)	-3.003 (3.423)	7.050** (3.197)	11.848* (5.858)
Bank branches per 1000 inhabitants in the region in 1936	.201** (.096)	.152*** (.110)	-.358** (.152)	-.598** (.265)
Log of provincial value added pro capita in 1991		.547** (.207)	.709*** (.237)	.996*** (.262)
South dummy			-.207*** (.060)	
Observations	95	95	95	61
R-squared	0.063	0.207	0.315	0.387

**Table 6. Effects of the 1936 banking structure on interest rate spread**

In Panel A all the dependent variables are rates in 1986 and are expressed in percentage terms. In Panel B all the dependent variables are percentage changes in rates between 1986 and 1994. 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 constant is also included in the regressions (coefficient not reported).

**Panel A: Level of interest rates and spread 1986**

	Loan rate (86)			Deposit rate (86)			Rate spread (86)		
	I	II	III	I	II	III	I	II	III
Fraction of bank branches owned by local banks in 1936	-3.387*** (1.014)	-1.082 (1.320)	-1.076 (1.324)	0.743 (0.636)	0.171 (0.894)	0.206 (0.860)	-4.130*** (1.099)	-1.253 (1.097)	-1.282 (1.091)
Number of savings banks per 1000 inhabitants in the region in 1936	-38.288 (50.436)	14.863 (51.366)	15.053 (51.546)	64.473*** (21.489)	51.265** (21.628)	52.356** (21.191)	-102.761* (52.842)	-36.402 (48.188)	-37.303 (47.995)
Number of cooperative banks per 1000 inhabitants in the region in 1936	126.744*** (33.563)	54.354 (38.481)	53.237 (37.200)	-14.829 (15.975)	3.160 (19.939)	-3.229 (20.979)	141.572*** (33.954)	51.194 (39.874)	56.466 (37.788)
Bank branches per 1000 inhabitants in the region in 1936	-5.629*** (1.661)	-2.088 (1.875)	-2.073 (1.874)	0.838 (0.789)	-0.041 (0.701)	0.041 (0.721)	-6.467*** (1.627)	-2.046 (1.981)	-2.114 (1.982)
South dummy		1.481** (0.616)	1.480** (0.618)		-0.368 (0.338)	-0.377 (0.340)		1.849*** (0.524)	1.857*** (0.534)
Number of bankrupt firms per 1000			0.001 (0.009)			0.008** (0.003)			-0.007 (0.010)
Observations	95	95	95	95	95	95	95	95	95
R-squared	0.543	0.621	0.621	0.266	0.290	0.313	0.619	0.704	0.707

Panel B: Changes in deposit rate and spread, 1986-1994

	Change in deposit rate (86-94)			Change in rate spread (86-94)		
	I	II	III	I	II	III
Fraction of bank branches owned by local banks in 1936	0.012 (0.377)	-0.085 (0.333)	0.168 (0.388)	-0.710 (0.768)	-1.780* (0.933)	-1.836 (1.044)
Number of savings banks per 1000 inhabitants in the region in 1936	-72.346*** (15.796)	-74.572*** (14.861)	-86.067*** (13.872)	44.476 (35.940)	19.805 (36.239)	-13.042 (32.455)
Number of cooperative banks per 1000 inhabitants in the region in 1936	-4.048 (13.034)	-1.016 (13.573)	12.428 (15.244)	-19.123 (23.422)	14.478 (28.615)	45.213 (29.998)
Bank branches per 1000 inhabitants in the region in 1936	0.448 (0.269)	0.299 (0.486)	-0.050 (0.409)	1.547 (1.096)	-0.097 (1.307)	-1.375 (1.117)
South dummy		-0.062 (0.175)			-0.687 (0.432)	
Observations	95	95	61	95	95	61
R-squared	0.198	0.199	0.294	0.091	0.133	0.071

## **Table 7. Effects of the 1936 banking structure on access to credit**

In panel A 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. The first two columns refer to the first two SHIW surveys (1989-1991), while the last two columns also include the last two SHIW surveys (1998-2000). In panel B the left hand side variable is a dummy equal to 1 if a firm is credit constrained (i.e., declares it has been turned down for a loan or discouraged from applying) and zero otherwise. The first two columns include observations from the period 1988-1996, while the last two columns includes observations from the period 1988-2000. In panel C the left hand side variable is an indicator variable measuring usury in 1995 (Columns I, II, and III) and the number of usury crimes reported in 1995 (Columns IV, V, and VI). 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 constant is also included in the regressions (coefficient not reported).

Panel A: Household Sample

	1989-91		1989-91 – 1998-2000	
Share of branches from local, non-national banks: 1936	-0.0232** (0.0093)	-0.0236 (0.0153)	-0.0261*** (0.0090)	-0.0334*** (0.0110)
Number of savings banks per capita in the region: 1936	-1.9746*** (0.5776)	-1.9914** (0.7596)	-2.0542*** (0.6346)	-2.3166*** (0.7601)
Number of cooperative banks per capita in the region: 1936	0.6777* (0.0103)	0.6959 (0.0113)	0.8493** (0.3487)	1.1210** (0.4960)
Number of branches per inhabitant in the region: 1936	(0.0161) (0.3544)	-0.0318 (0.6531)	-0.0196 (0.0188)	-0.0354 (0.0251)
Share of branches from local, non-national banks: 1936 * dummy if after liberalization			0.0224 (0.0188)	0.0221 (0.0189)
Number of savings banks per capita in the region: 1936 * dummy if after liberalization			2.1739** (0.8762)	2.1823** (0.8686)
Number of cooperative banks per capita in the region: 1936 * dummy if after liberalization			-1.1916 (0.6983)	-1.1935 (0.6944)
Number of branches per inhabitant in the region: 1936 * dummy if after liberalization			0.0456 (0.0309)	0.0467 (0.0309)
percentage of firms bankrupts	0.0003 (0.0001)	0.0003 (0.0001)	0.0000 (0.0001)	0.0000 (0.0001)
Percentage of bad loans in the province	0.0005 (0.0012)	0.0005 (0.0012)	0.0003 (0.0013)	0.0004 (0.0012)
Financial liabilities	0.0073*** (0.0024)	0.0073*** (0.0024)	0.0002 (0.0001)	0.0002 (0.0001)
Number of people living in the household	0.0068*** (0.0016)	0.0068*** (0.0017)	0.0051*** (0.0010)	0.0052*** (0.0010)
Age	-0.0007*** (0.0002)	-0.0007*** (0.0002)	-0.0008*** (0.0001)	-0.0008*** (0.0001)
Net disposable income (000 lira)	0.0007 (0.0018)	0.0007 (0.0018)	-0.0009 (0.0006)	-0.0009 (0.0007)
Net disposable income (squared)	-0.0000 (0.0000)	0 (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Net real wealth	-0.0003*** (0.0001)	-0.0003*** (0.0001)	-0.0001* (0.0000)	-0.0001* (0.0000)
Net real wealth (squared)	0.0000* (0.0000)	0.0000* (0.0000)	0.0000 (0.0000)	0.0000 (0.0000)
Size of the town	0.0032** (0.0014)	0.0032** (0.0013)	0.0029** (0.0012)	0.0027** (0.0012)
Years of schooling	-0.0004 (0.0006)	-0.0004 (0.0006)	-0.0001 (0.0004)	-0.0001 (0.0004)
South		-0.0004 (0.0112)		-0.0061 (0.0066)
Observations	16451	16451	29102	29102
R-squared	0.023	0.023	0.015	0.015

Panel B: Firm sample

	1988-96		1988-2000	
Share of branches from local, non-national banks: 1936	-0.0861*** (0.0202)	-0.0880*** (0.0243)	-0.0868*** (0.0190)	-0.0825*** (0.0230)
Number of savings banks per 1,000 inhabitants: 1936	-1.9421** (0.8797)	-1.8547* (0.9369)	-1.8986** (0.8831)	-2.1019** (0.9843)
Number of cooperative banks per 1,000 inhabitants: 1936	1.2326** (0.5380)	1.2294** (0.5442)	1.2265** (0.5431)	1.2344** (0.5339)
Number of branches per 1,000 inhabitants: 1936	-0.0140 (0.0290)	-0.0138 (0.0285)	-0.0144 (0.0291)	-0.0149 (0.0302)
Share of branches from local, non-national banks: 1936 * dummy if after liberalization			-0.0151 (0.0308)	-0.0161 (0.0311)
Number of savings banks per capita in the region: 1936 * dummy if after liberalization			2.4434* (1.2991)	2.3946* (1.3054)
Number of cooperative banks per capita in the region: 1936 * dummy if after liberalization			-0.4538 (1.2119)	-0.4543 (1.2126)
Number of branches per inhabitant in the region: 1936 * dummy if after liberalization			0.0182 (0.0605)	0.0192 (0.0606)
Size	-0.0122*** (0.0011)	-0.0122*** (0.0011)	-0.0110*** (0.0010)	-0.0110*** (0.0009)
Percentage of foreign sales	0.0005 (0.0158)	0.0005 (0.0158)	-0.0029 (0.0092)	-0.0029 (0.0092)
Dummy =1 if firm is state-owned	0.0415*** (0.0097)	0.0413*** (0.0097)	0.0367*** (0.0108)	0.0369*** (0.0109)
Dummy=1 if firm has hired workers during the year	0.0318*** (0.0066)	0.0318*** (0.0066)	0.0169** (0.0078)	0.0168** (0.0078)
Dummy=1 if firm has fired workers during the year	0.0484*** (0.0053)	0.0484*** (0.0053)	0.0300*** (0.0057)	0.0299*** (0.0056)
Ratio of investment over sales at $t - 1$	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0001)	-0.0002*** (0.0000)
Dummy =1 if firm is locate in the south		-0.0014 (0.0064)		0.0032 (0.0047)
Observations	9186	9186	14565	14565
R-squared	0.03	0.03	0.026	0.026

Panel C: Usury indicators

	Usury indicator (1995)			Number of denounced crimes (1995)		
Fraction of bank branches owned by local banks in 1936	1.478*** (.349)	-1.412*** (.402)	-1.441** (.572)	-.071** (.029)	-.071** (.031)	-.027 (.048)
Number of savings banks per 1000 inhabitants in the region in 1936	-22.352* (12.637)	-21.939* (12.550)	-22.676 (14.946)	.862 (1.529)	.858 (1.535)	1.976 (1.721)
Number of cooperative banks per 1000 inhabitants in the region in 1936	56.694*** (11.813)	54.654*** (12.263)	55.561*** (16.999)	2.401** (.918)	2.419** (.991)	1.042 (1.816)
Bank branches per 1000 inhabitants in the region in 1936	-2.279*** (.505)	-2.208*** (.479)	-2.255*** (.656)	-.100** (.041)	-.101** (.040)	-.030 (.086)
Log of provincial value added pro capita in 1991		-0.0000 (0.0000)	-0.0000 (0.0000)		0.0000 (0.0000)	0.0000 (0.0000)
South dummy			-.021 (.220)			.032 (.033)
Observations	95	95	95	95	95	95
R-squared	0.750	0.752	0.752	0.147	0.147	0.179



**Table 8. Effects of the 1936 banking structure on loan profitability**

In the first three columns of Panel A the dependent variable is the average proportion of non-performing bank loans in a province in 1984-85. In the last two columns of Panel A the dependent variable is the change in the percentage of non-performing loans over the period 1986-1995. 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 constant is also included in the regressions (coefficient not reported).

	Proportion of bad loans (84-85)			Change in bad loans (86-95)	
Fraction of bank branches owned by local banks in 1936	-0.002 (0.010)	0.019 (0.017)	0.019 (0.016)	-0.079*** (0.016)	-0.099*** (0.034)
Number of savings banks per 1000 inhabitants in the region in 1936	1.505*** (0.447)	1.984*** (0.441)	1.988*** (0.442)	-3.904*** (0.621)	-4.348*** (0.996)
Number of cooperative banks per 1000 inhabitants in the region in 1936	0.160 (0.263)	-0.492 (0.381)	-0.518 (0.389)	3.086*** (0.436)	3.691*** (0.967)
Bank branches per 1000 inhabitants in the region in 1936	-0.045*** (0.012)	-0.013 (0.016)	-0.013 (0.016)	-0.083*** (0.028)	-0.112** (0.050)
South dummy		0.013* (0.007)	0.013* (0.007)		-0.012 (0.017)
Proportion of firms that go bankrupt in a year			0.035 (0.121)		
Observations	95	95	95	95	95
R-squared	0.107	0.150	0.150	0.545	0.553

### **Table 9. Effects of the 1936 banking structure on the variability of bad loans**

The dependent variable is the cross sectional variability of the proportion of bank bad loans across banks in a certain province. The first three regressions refer to the average of the 1989-1990 period, while the second three is the average of the 1991-1995 period. 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 constant is also included in the regressions (coefficient not reported).

	Variability of bad loans			Change in variability of	
		(89-90)		bad loans (91-95)	
	I	II	III	IV	V
Fraction of branches owned	-5.337*	-5.497*	-2.373	-2.942	-3.003
by local banks in 1936	(2.797)	(2.857)	(3.700)	(1.844)	(2.770)
Number of savings banks per 1000	-94.615	-98.866	-27.457	-171.625	-173.006*
inhabitants in the region in 1936	(138.725)	(140.875)	(150.288)	(102.704)	(98.439)
Number of cooperative banks per 1000	449.762***	473.807***	374.441***	-88.557*	-86.631
inhabitants in the region in 1936	(68.311)	(79.271)	(110.779)	(44.880)	(69.646)
Bank branches per 1000 inhabitants	-20.052***	-20.390***	-15.598**	8.126***	8.033**
in the region in 1936	(3.412)	(3.624)	(6.121)	(2.453)	(3.573)
Proportion of firms that go bankrupt in a year		-0.029	-0.029		
		(0.034)	(0.037)		
South dummy			2.017		-0.039
			(1.951)		(1.021)
Observations	94	94	94	94	94
R-squared	0.383	0.388	0.400	0.084	0.084

**Table 10. Effect of the 1936 banking structure on number of firms**

The dependent variable is the number of firms present per 100 people living in the province (average of 1996-98, source ISTAT). South is a dummy equal to one if the firm is located in a region south of Rome. Social capital in 1990 is the average participation to national referenda, measured at the provincial level. 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 constant is also included in the regressions (coefficient not reported).

	Number of firms per 100 people in province			
	I	II	III	IV
Log of provincial value added pro capita in 1951	2.964*** (0.765)	1.493 (1.170)	0.594 (0.976)	-0.299 (0.779)
South dummy		-0.971 (0.585)	-0.059 (0.672)	0.532 (0.357)
Social capital in 1990			0.088*** (0.028)	0.080*** (0.022)
Fraction of bank branches owned by local banks in 1936				-0.127 (1.248)
Number of savings banks per 1000 inhabitants in the region in 1936				211.673*** (49.032)
Number of cooperative banks per 1000 inhabitants in the region in 1936				-66.609** (31.137)
Bank branches per 1000 inhabitants in the region in 1936				3.001** (1.278)
Observations	103	103	103	103
R-squared	0.259	0.285	0.336	0.461

**Table 11. Effect of the 1936 banking structure on firms' growth**

The left hand-side variable is the annual rate of growth in sales. All regressions include industry and time dummies. Internally financed growth is the maximum rate of growth that can be internally financed. Value added per capita in 1951 is the 1951 per capita value added in the province expressed in 1990 liras. Judicial inefficiency is the number of years it takes to have a first-degree judgment in the province. South is a dummy equal to one for regions south of Rome. The F test is for the null that the coefficients of the four indicators of the banking structure in 1936 are jointly equal to zero; the p-value of the test is reported in brackets. Standard errors, reported in brackets, are adjusted for regional clustering. (\*\*): coefficient significant at less than 1%; (\*): coefficient significant at the 5%.

	Whole sample	Small firms	Middle firms	Large firms	Very large firms
Internally financed growth	0.097*** (0.009)	0.085*** (0.009)	0.078*** (0.009)	0.095*** (0.023)	0.088*** (0.018)
Fraction of bank branches owned by local banks in 1936	0.084** (0.029)	0.074** (0.031)	0.107*** (0.023)	0.069 (0.035)	0.055 (0.039)
Number of savings banks per 1000 inhabitants in the region in 1936	2.082 (1.196)	1.901 (1.380)	2.648*** (0.879)	1.707 (0.890)	2.262 (1.214)
Number of cooperative banks per 1000 inhabitants in the region in 1936	-1.972 (1.323)	-2.121 (1.500)	-1.731* (0.862)	-0.588 (1.131)	0.595 (1.271)
Bank branches per 1000 inhabitants in the region in 1936	0.110* (0.064)	0.127* (0.073)	0.064 (0.046)	0.003 (0.054)	-0.070 (0.064)
Value added per capita in 1951	0.000 (0.000)	0.000 (0.000)	-0.000* (0.000)	-0.000* (0.000)	0.000 (0.000)
Judicial inefficiency	0.001 (0.002)	0.001 (0.002)	0.002 (0.002)	0.003 (0.003)	0.003 (0.004)
South dummy	0.009 (0.020)	0.010 (0.024)	0.011 (0.013)	-0.014 (0.010)	-0.020 (0.013)
Log of sales	0.014*** (0.002)	0.030*** (0.002)	0.000 (0.003)	0.002 (0.002)	0.004 (0.004)
F test (p-value)	4.87*** (0.008)	5.57*** (0.004)	7.42 (0.001)	2.87 (0.521)	1.95 (0.146)
Observations	252,101	61,446	17,244	4,182	1,865
R-squared	0.060	0.100	0.114	0.098	0.086

**Table 12. Effect of the 1936 banking structure on aggregate growth**

The dependent variable is the average annual rate of growth of value added in real terms between 1951 and 1991. 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 constant is also included in the regressions (coefficient not reported).

	Average annual rate of growth of value added (1951-91)					
	I	II	III	IV	V	VI
Log of provincial value added pro capita in 1951	-0.011*** (0.003)	-0.020*** (0.002)	-0.020*** (0.002)	-0.018*** (0.001)	-0.018*** (0.002)	-0.019*** (0.001)
Investment in infrastructure over value added	-0.001 (0.002)	-0.001 (0.001)	-0.001 (0.001)	-0.000 (0.001)	-0.000 (0.001)	-0.000 (0.001)
South dummy		-0.009*** (0.001)	-0.006*** (0.002)		-0.002 (0.002)	0.001 (0.001)
Social capital			0.000*** (0.000)			0.000*** (0.000)
Fraction of bank branches owned by local banks in 1936				0.019*** (0.003)	0.015*** (0.004)	0.014*** (0.003)
Number of savings banks per 1000 inhabitants in the region in 1936				0.000* (0.000)	0.000 (0.000)	0.000 (0.000)
Number of cooperative banks per 1000 inhabitants in the region in 1936				-0.001*** (0.000)	-0.000*** (0.000)	-0.000*** (0.000)
Bank branches per 1000 inhabitants in the region in 1936				0.000*** (0.000)	0.000*** (0.000)	0.000*** (0.000)
Observations	95	95	95	95	95	95
R-squared	0.303	0.685	0.726	0.777	0.783	0.814

**Figure 1: Number of Bank Branches per 1000 inhabitants in 1936**

The darker areas indicate regions with more bank branches.

