Finance–led divergence in the regions of Italy

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Italy's enduring North–South divide is a striking example of convergence failure.[2] When the new kingdom was proclaimed in 1861, a gap in economic development was evident between its regions. The (mostly Northern) architects of unification expected it to diminish over time; the South, it was their conviction, had been held back by the backward political and economic institutions of the Bourbon regime, and would flourish when integrated into the unified liberal state. Yet the first half-century of unity produced not convergence but a *widening* of the gap in per capita incomes, from 15–25 percent to 55 percent by 1911.[3] Neither fascist economic planning nor the impact of two world wars halted this divergence; by 1951 Southern output per capita had fallen still further behind, dropping from 78 percent to only 53 percent of the national average.[4] Active regional policy and rapid growth during Italy's 'economic miracle' did reverse the trend for a time, but since the 1970s, the South's per capita output has remained stuck at about 67 percent of the national average.[5] The struggle of generations of policy makers, economists and historians to

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[2] South is defined throughout this article as the former Kingdom of the Two Sicilies, consisting of mainland Italy south of a line drawn northeast from Rome and Sicily, as well as the island of Sardinia. This bisection hides great diversity within the regions thus defined but nonetheless yields a fairly sharp contrast between them, while allowing sufficiently large samples of banks for comparative statistical analysis.

[3] The range for 1861 is the widely cited estimate in R. Eckaus, 'The North-South differential in Italian economic development', *Journal of Economic History*, 21 (1961). The 1911 figure is based on the estimates of V. Zamagni, *Industrializzazione e squilibri regionali in Italia* (Bologna, 1978), table 58, pp. 198/9. Southern living standards did improve markedly in absolute terms over this period, however, and some convergence is evident in a physical quality of life index: G. Federico and G. Toniolo, 'Italy', chapter 10 in R. Sylla and G. Toniolo (eds.), *Patterns of European Industrialization* (New York, 1991).

[4] A. Esposto, 'Estimating regional per capita income: Italy, 1861–1914', *Journal of European Economic History*, 26 (1997), table 4, p. 596.

[5] Year 2000 regional GDP per capita can be found at the National Statistical Institute's web site: www.istat.it, under *Conti nazionali e territoriali*.

understand the roots of the Southern Question has generated numerous hypotheses, few of which have been eliminated from contention. There is no consensus on a ranking by power and plausibility of these candidate explanations, which range from agglomeration effects, infrastructure, emigration and resource endowment, through fiscal and tariff policy, to rent-seeking, incentive structures of state intervention, culture and criminality.

The specific role of finance has not received much attention in the debate on the historical origins of Italian regional divergence. This contrasts with the economic literature on international differences in prosperity and growth, where a finance-led growth school is increasingly influential.[6] A robust and economically significant correlation between financial development and per capita GDP growth is documented by an increasing number of studies. Typical measures of financial development include the ratio of liquid liabilities of the banking system to GDP, stock market liquidity, or bank branches and deposits per capita. Initial levels of these indicators are good predictors of subsequent growth rates, even controlling for other determinants of growth, such as initial income levels, investment in human capital, or openness to trade.[7] Recent contributions address lingering doubts about causality by using time-series evidence, exploiting inter-industry variation in recourse to external finance, and focusing on those differences in financial develop-ment that can be attributed to exogenous differences in legal traditions.[8] Evidence of a finance-growth nexus has also been found within countries, for example among the US states, in both historical and more recent periods.[9]

Can the finance-led approach help explain Italy's continuing regional disparities? For the contemporary period, yes. The banking system in particular is less well developed and functions differently in the South. The region has fewer bank branches per capita and possesses relatively fewer large institutions than the North. Southern banks appear to be less efficient and to exercise monopoly power in

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[6] See the recent presidential address to the Economic History Association by R. Sylla, 'Financial systems and economic modernization', *Journal of Economic History*, 62 (2002).

[7] R. Levine, 'Financial development and economic growth: views and an agenda', *Journal of Economic Literature*, 35 (1997); R. Levine and S. Zervos, 'Stock markets, banks, and economic growth', *American Economic Review*, 88 (1998).

[8] The legal approach is represented by R. Levine, 'The legal environment, banks, and long-run economic growth', *Journal of Money, Credit and Banking*, 30 (1998) and R. La Porta et al., 'Legal determinants of external finance', *Journal of Finance*, 52 (1997); the time-series approach is employed in P. Rousseau and P. Wachtel, 'Financial intermediation and economic performance: historical evidence from five industrialized countries', *Journal of Money, Credit and Banking*, 30 (1998); inter-industry differences in reliance on external finance are the focus of R. Rajan and L. Zingales, 'Financial dependence and growth', *American Economic Review*, 88 (1998).

[9] Examples include P. Rousseau, 'Share liquidity and industrial growth in an emerging market: the case of New England, 1854–1897', National Bureau of Economic Research Working Paper Series on Historical Factors in Long Run Growth, 117 (1999); J. Jayaratne and P. Strahan, 'The finance-growth nexus: evidence from bank branch deregulation', *Quarterly Journal of Economics*, 111 (1996); and H. Bodenhorn, *A History of Banking in Antebellum America* (Cambridge, 2000).

segmented local markets for small and medium-sized borrowers.[10] Direct evidence on the importance of financial development is provided by Ferri and Mattesini's study of provincial growth rates for the years 1951–90. They find that a province's initial endowment of bank branches per capita has a significant positive effect on subsequent growth rates, even controlling for initial income, investment in human capital, industry mix and infrastructure.[11]

If financial development is at least partially responsible for non-convergence in recent years, perhaps it can explain the progressive divergence observed during the years from Unification to World War I. Lack of reliable data on regional per capita incomes for the period precludes an econometric test in the spirit of Levine or Ferri and Mattesini. However, the development of the banking system is now well documented, at least for the years 1890–1910.[12] As these years coincide with Liberal Italy's most intense phase of industrialization and regional divergence, the situation is propitious for a test of the finance-led divergence hypothesis.[13]

I

By 1890 the South had a fledgling banking system. To be sure, there were fewer banks than in the North, and they were smaller and of more recent origin. But all categories of financial intermediary had established a presence in the South: private

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[10] Higher operating costs and interest rates at Southern banks cannot be entirely explained by regional differences in risk and loss rates: G. Galli and M. Onado, 'Dualismo territoriale e sistema finanziario', in *Il sistema finanziario nel Mezzogiorno* (Rome, 1990), Contributi all'analisi economica del Servizio Studi, numero speciale; R. Faini, G. Galli and C. Giannini, 'Finance and development: the case of Southern Italy', *Center for Economic Policy Research Discussion Paper Series* (1992), p. 674. It should be noted that the 1990s were a decade of rapid change and some North–South convergence in banking, as documented in F. Panetta, 'Evoluzione del sistema bancario e finanziamento dell'economia nel Mezzogiorno', *Temi di discussione del Servizio Studi* (2003).

[11] Initial endowment with bank branches was at least partially exogenous to economic conditions because of regulatory controls. Significance in this study is more statistical than economic as the estimated effects of financial development are modest. G. Ferri and F. Mattesini, 'Finance, human capital and infrastructure: an empirical investigation of post-war Italian growth', *Temi di discussione del Servizio Studi* (1997), p. 321.

[12] A comprehensive database of banking information was compiled by the Bank of Italy and published as F. Cotula et al. (eds.), *I bilanci delle aziende di credito 1890–1936*, Collana Storica della Banca d'Italia – Statistiche, vol. III (Rome-Bari, 1996). A CD accompanies the volume.

[13] The timing and nature of Italian industrialization (gradually accelerating, cyclical, or discontinuous) are matters of longstanding debate, but there is no doubt that the period from the mid 1890s to World War I was one of very rapid development. See S. Fenoaltea, 'Notes on the rate of industrial growth in Italy, 1861–1913', *Journal of Economic History*, 63 (2003), for a recent summary and contribution. The extent and timing of divergence are similarly difficult to pin down. Esposto, *Estimating*, and S. Fenoaltea, 'La crescita delle regioni d'Italia dall'Unità alla Grande Guerra: una prima stima per gli anni censuari', *Quaderni dell'Ufficio Ricerche Storiche* (Bank of Italy) (2001), are two recent views consistent with the claim advanced here that rapid divergence dates from the later years of Liberal Italy.

bankers, note-issuing banks, joint stock banks, cooperative banks, savings banks and postal savings banks. Little systematic information relating to private bankers is available, but it is known that in 1888 they numbered roughly one thousand – only about one fourth of them in the South.[14] Six banks shared the legal monopoly on note issue in Italy circa 1890, reduced to three from 1894.[15] These institutions had roots in the pre-unification period and a mixed public–private nature. The primary channel through which they provided credit to the private sector was through the discount and re-discount of commercial effects, dealing with other banks and private bankers, but also directly with the most reputable commercial and industrial borrowers.[16] In the years around 1890 the South may have accounted for something like 35 percent of the volume of discounts and advances extended by the issuing banks directly to the public (i.e. excluding rediscounts to banks and private bankers). This figure is not dramatically out of line with the region's likely share of national economic activity.[17]

[14] A. Polsi, 'Sportelli bancari e sistema creditizio in età giolittiana', *Storia e Problemi Contemporanei*, 16 (1995), table 5, p. 54. The exact numbers are 736 for the North-Centre, 224 for the South.

[15] The note-issuing banks were the Banca Nazionale nel Regno d'Italia, the Banco di Napoli, the Banca Nazionale Toscana, the Banca Romana, the Banco di Sicilia, and the Banca Toscana di Credito, in order of 1890 total assets. Total assets from R. De Mattia, *I bilanci degli istituti di emissione italiani dal 1845 al 1936, altre serie storiche di interesse monetario e fonti* (Rome, 1967), table 2, p. 272. In 1893 the *Banca* Nazionale was merged with the two Tuscan banks to form the *Banca d'Italia*, which took on the liquidation of the insolvent Banca Romana. The banks of issue were thus three from 1894.

[16] The note-issuing banks provided smaller volumes of credit to the private sector through current accounts and advances as well, which is evident in their balance-sheet data: De Mattia, *Bilanci*. Up to 1893 they also made long-term real-estate loans (*credito fondiario*), often via quasi-independent sections or institutes funded through the issue of special securities (*cartelle fondiarie*). These appear as important balance sheet items for the Banca Nazionale / Bank of Italy in the 1890s, but in fact the bank was steadily winding down its *credito fondiario* operations in accordance with 1893 legislation mandating strict adherence to short-term lending by the banks of issue. Real estate lending is harder to track for the number two issuing bank (Banco di Napoli), in whose accounts it appears to have been largely subsumed under anodyne rubrics such as 'diverse credits' or kept off the books entirely. Suggestive data on the Banco di Napoli, as well as an account of the 1885 origins of the Banca Nazionale's *sezione di credito fondiario* as a desperate attempt to avoid further losses on commercial credit to speculators in urban construction, can be found in A. Confalonieri, *Banca e industria in Italia, 1894–1906*, vol. I (Milan, 1974), pp. 141–2. The Bank of Italy's post-1893 liquidation of these holdings is discussed in several documents in F. Bonelli (ed.), *La Banca d'Italia dal 1893 al 1913. Momenti della formazione di una banca centrale*, Collana Storica della Banca d'Italia – Documenti, vol. IV (Rome-Bari, 1991).

[17] Regional data on bank of issue operations are not available on a comprehensive or annual basis. Episodic government inspections did yield data on provincial or regional discounts and advances for 1892 (Italy, *Annuario statistico italiano 1892*, Ministero di Agricoltura, Industria e Commercio, Direzione Generale della Statistica, pp. 734–5) and 1912 (Bonelli, *La banca d'Italia*, pp. 565–615). Additional information on the share of rediscounts in these figures is provided by Alieri and Cerrito in Cotula et al., *I bilanci*, pp. 305–6. Details of the calculations underlying 35% estimate are available from the author on request.

Between 1861 and 1890, Italy's joint-stock banks increased from a mere eight to over 150. By the 1880s this growth had spread to the South, such that by decade's end the region was home to roughly two-fifths of the national total.[18] The joint-stock banks were a diverse group. At one end of the spectrum were the great Credito Mobiliare and Banca Generale, committed to meeting the needs of large-scale industrial borrowers even when forced by small and inefficient securities markets and the lack of ordinary banking business to hold significant portfolio shares in risky corporate stocks and bonds.[19] At the other end were small deposit banks in provincial cities, adhering more closely to financial orthodoxy: emphasizing short-term commercial credit on the asset side and deposit collection on the liability side. Recent research suggests a continuous shading of bank behavior between these two extremes, such that even medium-sized joint-stock banks may not uncommonly have held equity positions in their clients.[20] The joint-stock banks were thus particularly important in supporting local economic initiative.

Alongside them stood the *banche popolari*.[21] These cooperative banks were hybridized from German roots and transplanted to Italy in the mid 1860s under the aegis of the economist Luigi Luzzatti, later Minister of the Treasury and of Finance. They served a clientele of artisans and entrepreneurs embedded in local communities, where social ties provided information and sanctioning mechanisms that could substitute for the collateral, connections, and financial track record required for access to credit from larger, more remote institutions such as the banks of issue or big-city joint-stock banks. The *banche popolari* differed from ordinary joint-stock banks in norms of governance, typical rules being a one man – one vote in the general assembly of shareholders, shares with fixed, low prices that did not trade publicly, and restrictions on maximum shareholdings. These limits effectively confined the coops to a local sphere of operation. As the commercial code imposed no further constraints on the *banche popolari*, however, their operations resembled

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[18] The 1861 figure is from A. Polsi, *Alle origini del capitalismo italiano* (Turin, 1993), table 1, p. 98; that for 1890 – and henceforth all figures for years after 1890, is my calculation based on the data in Cotula et al., *I bilanci*, pp. 305–6.

[19] For example, in 1881 the Credito Mobiliare's assets totaled 170 million lire, of which 60 million were in corporate stocks and bonds and 30 million lire in current account credits (de facto medium term finance to large borrowers), while only 9 million were short-term commercial effects: Confalonieri, *Banca e industria*, table xv, pp. 436–7.

[20] A. Polsi, 'Financial institutions in nineteenth-century Italy: the rise of a banking system', *Financial History Review*, 3 (1996) argues that even smaller banks were forced by lack of demand for short-term credit to take on longer-term commitments. V. Zamagni, '"Interlocking directorates" in Lombardia 1911–1936: primi risultati da una nuova banca dati', in *Tra Lombardia e Ticino – Studi in memoria di Bruno Caizzi* (Bellinzona, 1995), shows that several Lombard joint-stock banks had directorates (*consigli di amministrazione*) that interlocked with those of industrial and commercial firms in 1911.

[21] See B. A'Hearn, 'Could southern Italians cooperate? *Banche popolari* in the *Mezzogiorno*', *Journal of Economic History*, 60 (2000), for more detail on the *banche popolari* and North–South differences in their diffusion and operation. Polsi, *Alle origini*, ch. 3, provides an overview of the first twenty years of the cooperative banking movement.

those of ordinary joint-stock banks.[22] Cooperative bank numbers grew very rapidly, reaching nearly 700 by 1890. As with joint-stock banks, growth was initially concentrated in the North. It spread to the South in the 1880s, driven in part by the expansion of the Banco di Napoli and its exploitation of new regulatory provisions favoring the rediscount of correspondent cooperative bank assets.[23] Southern *banche popolari* numbered 365 by 1890, actually exceeding their 309 Northern counterparts.

Savings banks were the final major component of the banking system. With roots predating unification in the North, savings banks rapidly achieved a capillary diffusion there. Already by 1877 there were over 300 savings banks and bank branches in the North, and the Cassa di Risparmio delle Provincie Lombarde was the nation's second largest bank after the Banca Nazionale.[24] The savings banks attracted a large volume of deposits, their liabilities constituting at least 20 percent of the entire banking system.[25] In keeping with the spirit of their charters, they invested these funds conservatively, primarily in government securities and agricultural mortgage loans. This made the savings banks islands of stability and reservoirs of liquidity in the system.[26] Savings banks remained relatively uncommon in the South, which in 1891 had only 47 to the North's 172.[27] From 1875 this vacuum was filled in part by postal savings banks, deposits at which were placed at the disposal of the Cassa Depositi e Prestiti. This government fund invested them in public works loans to local government and, increasingly after 1890, Treasury securities. It is uncertain whether

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[22] Limited liability was an important difference from the German model. Luzzatti thought it necessary to encourage some participation by the relatively well-off, without whose support, business, and deposits the cooperatives would be slow to develop. Offering most services to non-members also 'betrayed' the original model.

[23] Note-issuing bank discount rates were regulated by the government. An 1881 experimental policy permitted the Banco di Napoli to charge a lower rate to correspondent cooperatives, a privilege extended to the other banks of issue only four years later. Lower interest rates for cooperatives served two goals: to facilitate the smaller note-issuing banks putting a greater volume of notes into circulation, reaching their legal note-issue ceilings; and promotion of the cooperatives themselves. F. Spinelli and M. Fratianni, *Storia monetaria d'Italia* (Milan, 1991), p. 105.

[24] A. Cova and A. M. Galli, *La Cassa di Risparmio delle Provincie Lombarde dalla fondazione al 1940* (Rome-Bari and Milan, 1991), vol. 1, table 2.11, p. 203. About 100 of these branches belonged to the CARIPLO.

[25] Polsi, 'Financial institutions', table 4, p. 132, provides data on banking sector liabilities by bank category; V. Zamagni, *The Economic History of Italy 1860–1990* (Oxford, 1993), table 4.4, p. 140 gives asset shares. The minimum savings bank share was actually 18.9% of assets, 18.2% of liabilities (in 1870).

[26] The savings banks have generally been seen as somewhat extraneous to the rest of the banking system. However, examples of inter-bank relations involving the savings banks (in a somewhat later period) are discussed in G. Bonaiuti, 'Liquidità e relazioni interbancarie', in G. Conti and S. La Francesca (eds.), *Banche e reti di banche nell'Italia postunitaria* (Bologna, 2000). See also A. Confalonieri, *Banca e industria in Italia dalla crisi del 1907 al agosto 1914* (Milan, 1982), vol. 1, p. 35, pp. 164–81, for details on the (somewhat unique case of) the CARIPLO, which increasingly provided discounts and even medium-term credit to industrial borrowers and cooperated with other banks in the years from 1907.

[27] Italy, *Annuario statistico*.

the postal savings banks, which were present-even in the smallest towns, open daily, and enjoyed the backing of the state, siphoned deposits away from other inter-mediaries or instead coaxed into the financial system wealth that would otherwise have been hoarded.[28] But it is clear that funds they collected were not made available to local entrepreneurs.

Assessing the Southern banking system circa 1890 is a judgment call. The lag in development relative to the North had perhaps cost the region a more dynamic role in the 1880s boom.[29] And the total assets of its young constituents remained only a fraction of those in the North: half a billion lire as against nearly three billion. This disparity would be at best partially ameliorated by incorporating into the figures the banks of issue, for which regional data are lacking. An estimate of direct loans to the public by the banks of issue suggests a more than two-to-one North–South ratio, with even the Banco di Napoli discounting a greater volume of bills in the North than in its home region.[30] On the other hand, all types of intermediaries were present in respectable numbers, and the distribution of assets across bank types was relatively favorable. As shown in Figure 1, those institutions most supportive of local development, the joint stock and cooperative banks, had large shares of total assets.[31] One might argue that a foundation had been laid for future development.
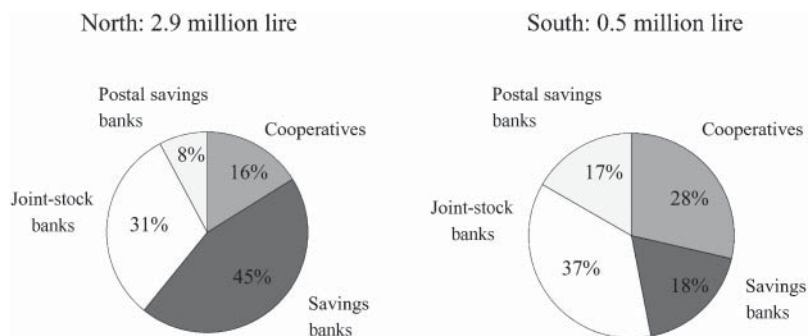

North: 2.9 million lire

Postal savings banks
8%
Joint-stock banks 31%
Cooperatives 16%
45%
Savings banks

South: 0.5 million lire

Postal savings banks
17%
Joint-stock banks
37%
Cooperatives 28%
18%
Savings banks

Figure 1. *Total bank assets by sector, year-end 1890*
Source: Bank of Italy, Ufficio Ricerche Storiche.

[28] See M. De Cecco and G. Toniolo (eds.), *Storia della Cassa Depositi e Prestiti* (Rome-Bari, 2000), pp. xxiv–xxvii, fig. A5, p. 10, and pp. 31–2.

[29] Polsi has calculated the number of bank branches and offices of the savings banks, the joint stock banks, and cooperatives at the beginning of this boom (in 1878); the North-Centre had 642, the South only 102: Polsi, 'Financial institutions', table 3, p. 128.

[30] Estimated direct discounts and advances by the banks of issue are 371 million in North and 168 million in the South for year-end 1892, a ratio of 2.2:1. This compares with estimates for the joint stock and coop banks of 399 and 100 million, a ratio of 4.0:1. See note 17 for sources and further details.

[31] These data and those underlying Figure 2 were kindly provided to me by the Office of Historical Research at the Bank of Italy.

II

The expansion of Southern banking during the 1880s had taken place in the context of a broader economic boom driven by capital inflow from abroad in conjunction with Italy's return to the gold standard in 1883.[32] The magnitude of this influx is revealed by the merchandise balance of trade, which fell from approximate parity in the early 1880s to a deficit in the order of 5 percent of GDP by 1887, while the lira appreciated by about 20 percent in real terms.[33] Abundant credit fueled a prodigious investment boom in these years, which focused on railroads and defense, both stimulated by government demand, and on urban construction, particularly in Rome. From 1884 to 1887, just three of the major players in the Rome development boom invested over 200 million lire.[34] Both the issuing banks and the joint stock banks enthusiastically financed the investment boom. Credit to the private sector by the former more than doubled from 1883 to 1887; that of the latter increased by nearly 60 percent.[35]

Just as foreign capital inflow spurred the 1880s boom, so its outflow precipitated collapse.[36] Foreign investors were unnerved as Italian fiscal deficits began to increase, the interest burden of foreign-held debt grew, a trade war with France erupted, and events like the Baring crisis disturbed international financial markets. From 1887 foreign credit lines to Italian banks were not renewed, and foreign

[32] Capital inflow took the form of a 644 million lire loan to the state, placed abroad by a consortium of French, English and Italian banks, the opening of inter-bank credit lines of similar magnitude, and the increasing marketing of Italian corporate and municipal securities abroad. The size of these flows can be compared to nominal GDP on the order of 10,000 million lire. See Confalonieri, *Banca e industria*, for an overview of the 1880s boom and its monetary origins. The author (p. 22) cites an 1894 estimate by Bonaldo Stringher (director general of the Treasury, later of the Bank of Italy) that short-term inter-bank credit made available from abroad in the mid 1880s was roughly 400 million lire. The actual figure is impossible to estimate accurately because rediscounted assets disappear from Italian bank balance sheets.

[33] Real effective exchange rates in P. Ciocca and A. Ulizzi, 'I tassi di cambio nominali e "reali" dell'Italia dall'unità nazionale al sistema monetario europeo (1861–1979)', in: *Ricerche per la storia della Banca d'Italia*, vol. 1 (Bari-Rome, 1990). The merchandise trade balance was minus 524 million lire in 1887. The data can be found in S. Fenoaltea, 'International resource flows and construction movements in the Atlantic economy: the Kuznets Cycle in Italy, 1861–1913', *Journal of Economic History*, 48 (1988), where the weakness of other components of balance of payments estimates is discussed.

[34] Confalonieri, *Banca e industria*, p. 32, referring to the Banca Tiberina, Società Generale Immobiliare and Impresa dell'Esquilino.

[35] Data for the issuing banks are from G. Di Nardi, *Le banche di emissione in Italia nel secolo XIX* (Turin, 1953), table 91, p. 390. Data on other banks are from Confalonieri, *Banca e industria*, table v, p. 419. See also note 16 for discussion of forays by the banks of issue into *credito fondiario* in this period.

[36] This account of the crisis is based primarily on Confalonieri, *Banca e industria*. See also G. Toniolo, *An Economic History of Liberal Italy 1850–1918* (London, 1990), ch. 9, for a good English-language summary.

investors attempted to reduce holdings of Italian assets.[37] As the lira–franc exchange rate edged above the gold export point, the issuing banks resorted to a variety of quasi–legal expedients to forestall note conversion into specie.[38] Credit restriction inevitably followed; from 1887 growth in credit to the private sector from both the banks of issue and the rest of the banking sector abruptly stopped, stagnating through at least 1893–4. Net investment fell by 65 percent from 1887 to 1892, bringing an end to the economic expansion.[39] Falling property values from 1887 spelled the end of the urban real estate boom and quickly revealed its speculative nature. Numerous bankruptcies undermined the solvency of the banks that had directly financed the bubble, leading to government–promoted salvage operations headed by the issuing banks, in particular the Banca Nazionale.[40] Southern cooperative banks heavily dependent on the rediscounting facilities of the note–issuing banks found themselves under pressure as the latter restricted credit, and a number of failures ensued.

Late 1892 saw confidence in the nation's banks at home and abroad further undermined by a scandal involving the Banca Romana, the note–issuing bank most closely tied to the real estate bubble, when a secret government investigation that had uncovered pervasive accounting fraud and regulatory violations at the bank was leaked to the public. The price of the *rendita italiana* and with it the value of the lira collapsed, leading to abandonment of the gold standard. The Credito Mobiliare and Banca Generale, those champions of industrial finance and the nation's largest joint stock banks, suffered continuing losses and falling share prices. Under growing pressure in late 1893, neither found a lender of last resort in the Banca Nazionale, preoccupied with its own difficulties after the unsatisfactory outcome of earlier interventions. Both banks failed by early 1894, the Generale along with a number of smaller institutions in the midst of a run on deposits.[41]

One outcome of the crisis was the liquidation of the Banca Romana by the newly founded Banca d'Italia (Bank of Italy), which merged the Banca Nazionale with the two smaller Tuscan issuing banks.[42] The banks of issue were reduced to three: the

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[37] The price of the *rendita italiana*, the main Italian government security traded abroad began to fall from 1887. G. Tattara, 'Paper money but a gold debt: Italy on the gold standard', *Explorations in Economic History*, 40 (2002), provides high-frequency data on *rendita* prices. The government succeeded in borrowing abroad after 1887, but only by switching to short-term debt.

[38] Di Nardi, *Banche di emissione*, p. 348. The banks of issue did not raise interest rates to attract foreign capital. Government approval was required for any change in the discount rate, and was not forthcoming.

[39] The net investment figures are reported in Toniolo, *Economic History*, p. 89.

[40] In 1887 and 1888 the Banca Nazionale participated in salvages of the Impresa dell'Esquilino and the Banca Tiberina, for example. Both enterprises were heavily involved in real estate speculation, and both were in turn heavily indebted to important joint stock banks (the Banca di Torino and Banco di Sconto e Sete, respectively, both of Turin) as well as to the banks of issue. For a fascinating account of how the Banca Nazionale was drawn first into supporting speculative activity and then into salvage operations, see P. Di Martino, 'L'esito fallimentare di un intervento di ultima istanza: la Banca nazionale e i salvataggi del 1889', *Imprese e Storia*, 25 (2001).

[41] Confalonieri, *Banca e industria*, ch. 2.
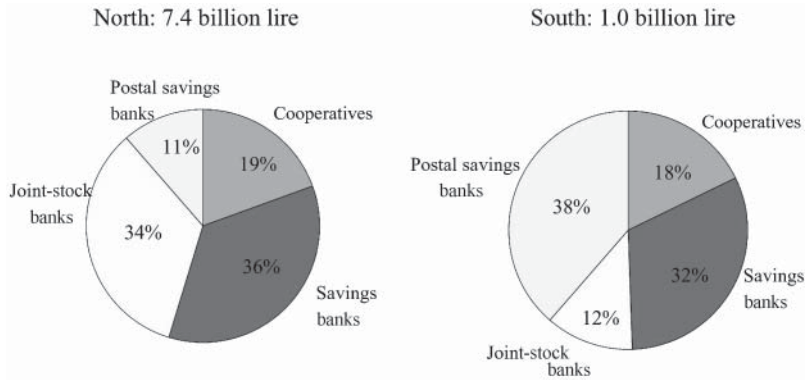
[42] See note 15.

Figure 2. *Total bank assets by sector, year-end 1910*
Source: Bank of Italy, Ufficio Ricerche Storiche.

Bank of Italy, the Banco di Napoli and the Banco di Sicilia. But what were the long-run, regional aspects of the crisis? In the North, they do not seem to have been great. The savings and cooperative banks weathered the storm relatively unscathed, while the joint-stock banks resumed their rapid growth in the later 1890s, with the celebrated new universal banks in the vanguard (particularly the Banca Commerciale Italiana and Credito Italiano). As shown in Figure 2, total assets of Northern banks had more than doubled by 1910, widening the North–South gap.[43]

The shares of the joint-stock and cooperative banks – those particularly important for local development – increased in this Northern total. The contrast with the South is dramatic: Southern joint stock and cooperative banks collapsed. Though total assets of Southern banks came close to doubling, the share of joint-stock and cooperative banks fell from 65 percent of the total to only 30 percent. While assets of these types of banks almost tripled in the North, from 1.4 to 3.9 billion lire, they actually shrank in the South, from 0.35 to 0.30 billion lire (Table 1). The increase in total Southern bank assets was mostly accounted for by increased deposits at postal savings banks. Southern depositors evidently learned not to trust private banks, had long memories, and sought the security of a government guarantee of their savings. But the postal savings banks provided at best a very indirect support for the local economy. So by 1910 the South's banking sector was both relatively smaller and much less favorably structured than it had been two decades before.

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[43] The regional disparity in credit provision evident in Figure 2 would not be materially diminished by including the operations of the banks of issue. It is possible to estimate direct lending by the banks of issue to the public (net of credit to banks and private bankers) in the form of discounts at year-end 1912 as 204 million lire in the North, 135 million in the South. While these loans are remarkably evenly distributed across the regions, they are quantitatively insignificant in comparison with the over 2,000 million total discounts by the joint-stock and coop banks. For the sources underlying these estimates, see note 16.

Table 1. *Year-end total assets of joint-stock and cooperative banks*

	Cooperative	Joint stock	Total
North 1890	479	913	1,392
North 1910	1,457	2,402	3,859
Ratio	3.04	2.63	2.77
South 1890	146	202	348
South 1910	178	82	261
Ratio	1.22	0.41	0.75

Source: Author's calculations based on data in F. Cotula et al. (eds.), *I bilanci delle aziende di credito 1890–1936*, vol. III, Collana Storica della Banca d'Italia – Statistiche (Rome-Bari, 1996).

This suggests a provisional hypothesis. On the eve of Italy's most rapid phase of industrialization a crisis struck the Southern banking system – a crisis that might be regarded as an exogenous shock, rather than an internally generated and necessary purgative, given its origins in high finance, international capital markets, and national fiscal and commercial policies. Because that system was young and immature, the crisis had greater effect than in the North, permanently diverting the course of financial development in the South. This deprived the region of those institutions most supportive of local economic development, contributing to the region's relative failure in industrialization. The remainder of the paper evaluates the evidence in favor of this hypothesis of finance–led divergence.

III

Table 1 displays the evolution of joint stock and cooperative bank assets as documented in the Bank of Italy's 1996 data base. The dataset includes the balance sheets of all joint stock and cooperative banks in every fifth year from 1890 to 1910. (For most joint stock banks and the larger cooperatives, information is available on an annual basis.) The data also include bank names and locations, charter dates, and the dates of first and last available balance sheets. These facts were supplemented with separate information on (1) banks being liquidated that continued to publish balance sheets and appear in the data without a change of designation, and (2) notice of the legal act of founding or dissolving a banking company, published by law in the *Bolletino ufficiale delle società per azioni* (*BUSA*).[44] With further assumptions and

[44] The *BUSA* had several parts, of which *Parte I, Atti costitutivi e modificativi etc.* (the annual *riassunto/indice*) was the source of my dates of founding and dissolution: Italy, *Bollettino ufficiale delle società per azioni, Parte I: atti costitutivi e modificativi etc.* (Ministero di Agricoltura, Industria e Commercio, Direzione Generale della Statistica, various years). The *BUSA* series from which the Bank of Italy research team drew balance sheet data is the *Situazioni mensili dei conti delle società che hanno per principale oggetto l'esercizio del credito*. Data on banks known to have been in the liquidation process were kindly provided to me by the *Ufficio Ricerche Storiche* at the Bank of Italy.

Table 2. *Bank asset mortality rates (annual average %)*

	Cooperative	Joint stock	Total
North	1.02	4.50	2.99
South	2.93	4.12	3.35

Source: Author's calculations based on data detailed in note to Table 1.

interpolations, the augmented dataset permits the calculation of annual bank asset vital rates: mortality, fertility, and growth.[45]

Table 2 and Figure 3 present estimated asset mortality rates, which were rather high on average. The crisis of 1893–94 shows up clearly in the data (lagging a year due to the method of identifying bank failures). Banks with assets amounting to more than a quarter of total joint stock and cooperative assets failed in the North in the first year, with a further 13 percent loss the next. Quite surprising is the lack of any mortality spike for the South during this crisis. The only such peak comes in 1909, when nearly a quarter of the South's assets were lost with the failure of the Credito Meridionale and the absorption of the failing Società di Assicurazioni Diversi by the Banco di Roma (acting at the behest of the Bank of Italy and the Banco di Napoli).[46] Average mortality *is* higher in the South because of a dramatic difference in cooperative bank experience, but the crisis of 1893–94 simply does not show up.

Can much of the North–South divergence in total assets be attributed to higher average mortality in the South? A counterfactual calculation in which the North's

[45] Estimation of mortality presented several challenges. Death years were assumed to be given by the earliest available of four possible indicators: (1) the end of the Bank of Italy (BI) database record for a given bank, generally the last point at which mention of the bank was found in one of several official sources; (2) the year after the last published balance sheet entered in the BI data; (3) the year in which notice of dissolution of a banking company was published (in some cases, publication happened in the calendar year following the actual decision); and (4) the first year that an institution shows up in the BI list of banks in liquidation. For only a few banks could death dates during the period 1890–1910 not be ascertained with confidence. Typically problems arose in two cases: cooperative banks sampled only in every fifth year; and banks with a last balance sheet and end of record in 1910, after which year the quality of the original data deteriorated markedly and many banks simply disappeared from the records. The former were assumed to have failed in the year following their last balance sheet and end of record. The latter were assumed to have failed after 1910, hence outside our sample period.

  Total assets (and all other balance-sheet items) refer to the end of the year in general. When death year assets were not available, typically due to the 'fifth-year problem', they were inferred by interpolation or extension of the previous trend in most cases. Reported asset mortality rates relate the total assets of failing banks to total bank assets at the end of the previous year.

  A bank can 'die' without having 'failed' according to the definitions and method used here. This is unlikely to have often been the case. It is worth noting that the BI database permits one to follow a bank through changes of name, location and category, so these events are not falsely identified as deaths.

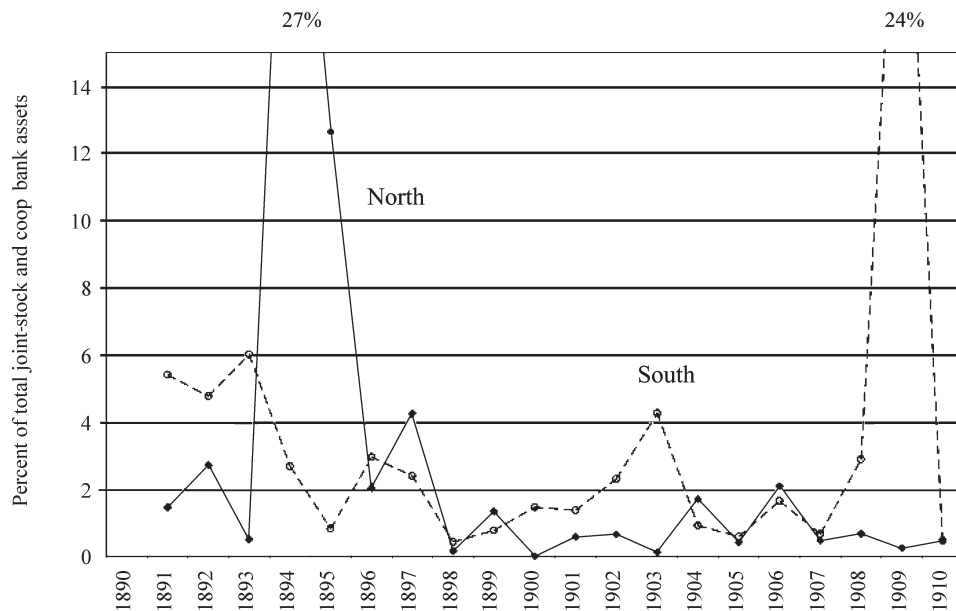[46] On the *Società di Assicurazioni Diverse*, see Confalonieri, *Banca e industria*, pp. 140, 243.

Figure 3. *Assets of failing joint-stock and cooperative banks*
Source: Author's calculations based on data in Cotula et al. (eds.), *I bilanci delle aziende di credito 1890−1936*, and other sources as detailed in note 44. For detail on methods see text and note 45.

mortality rates for joint-stock and cooperative banks founded before 1890 ('old banks') are applied to the South, while all other demographic factors are held constant at their actual Southern values, implies Southern total assets in 1910 would have been 25 percent greater than their actual value.[47] This is an important effect, but not one that comes close to explaining the actual growth gap of 269 percent.[48] If we exclude great banks such as the Credito Mobiliare and the Banca Commerciale from all calculations, reasoning that they were institutions of a national scope and clientele despite their Northern headquarters, then the mortality difference is larger, the growth gap smaller.[49] Counterfactual calculation in this case shows that a larger

[47] The old bank mortality rate differences closely mirror the overall mortality figures reported in Table 2, which also include new banks. Details of the counterfactual calculation method are available from the author in a separate companion piece.

[48] Northern assets grew to 2.77 times their initial value, while those in the South fell to 0.75 of theirs. To maintain a constant relative position, Southern assets in 1910 would have had to be 2.77/0.75 = 3.69 times their actual value. Thus the growth gap to be explained is 269%.

[49] The 'great banks' excluded in this and several subsequent calculations are the following: Banca Generale, Credito Mobiliare, Banca Tiberina (until their failures), Banca Commerciale Italiana, Credito Italiano, Società Bancaria Milanese/Italiana (after their foundings) and Banco di Roma (throughout). These institutions were chosen on the basis of total assets.

Table 3. *Assets of newborn banks as a percent of total: annual averages*

	Cooperative	Joint stock	Total
North	0.41	1.59	1.05
South	0.43	0.62	0.43

Source: Author's calculations based on data detailed in note to Table 1.

but still modest share can be explained – 45 percentage points of a 187 percent gap. This small proportion means that mortality is only part of the story.

Perhaps fertility explains more of the North–South divergence. Table 3 and Figure 4 summarize data on asset birth rates. Clearly the North enjoyed higher birth rates, due mainly to events in a few individual years. The spikes in the Northern birthrate are heavily influenced by the founding of several well-known institutions such as the Banca Commerciale Italiana in 1894, the Credito Italiano in 1895, and the Società Bancaria Milanese (later Italiana) in 1898.[50] Overall the North's annual average is more than double the South's, an advantage stemming entirely from the joint- stock bank sector, where the ratio is nearly three to one. There are seven years in which no joint-stock bank at all is founded in the South. No sign of a decisive
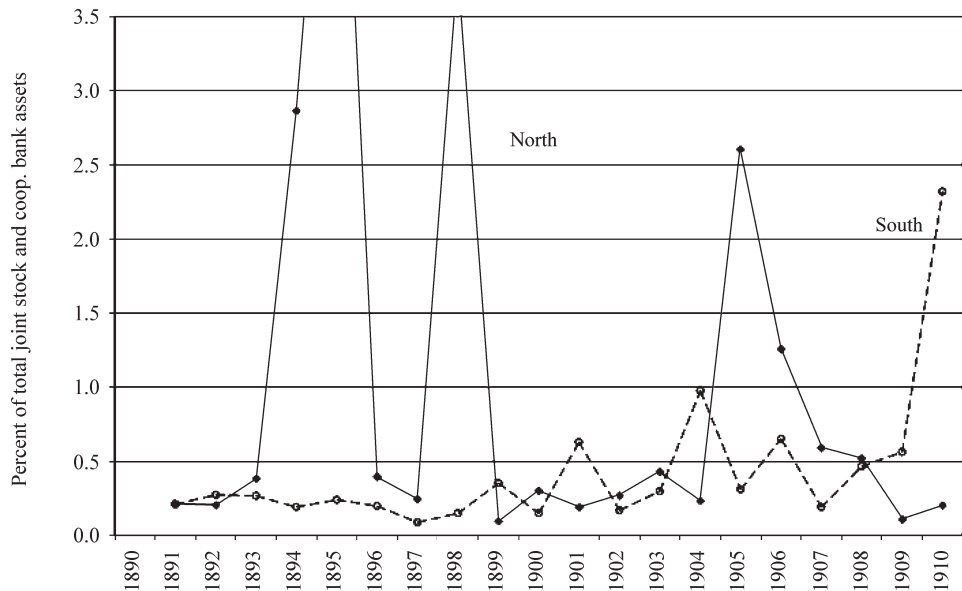
Figure 4. *Assets of newborn joint-stock and cooperative banks*
Source: Author's calculations based on the source as for Figure 3.

[50] The 1905 spike is caused by the less-well-known Banco della Liguria.

Table 4. *Old bank survivor asset growth rates (%)*

	Cooperative	Joint stock
North	4.8	5.4
South	3.1	−0.9

Source: Author's calculations based on data detailed in note to Table 1.

drop in the Southern series in connection with the crisis of the early 1890s is evident. In accounting for the impact of fertility differences, infant mortality and newborn growth rates must also be considered. Small number problems complicate reliable estimation of these rates by region, sector and birth-year, but the North appears to have enjoyed a clear advantage on these measures.[51] How much of the growth gap is explained by joint effects of fertility, infant mortality, and newborn growth rates?[52] The counterfactual calculation is sensitive to the inclusion or exclusion of the great mixed banks. If they are excluded, fertility and allied effects explain together some 47 percentage points of the 187 percent growth gap, which is similar to the contribution of mortality. So fertility was important but not by itself decisive.[53]

The remaining factor is the growth rate of banks already present in 1890. Regional figures are summarized in Table 4.[54] Old bank survivor growth rates were clearly higher in the North, decisively so for joint-stock banks whose average growth rate of 5.4 percent implies a near tripling after 20 years. In the South, by contrast, survivors shrank slowly, on average. It is worth noting that old bank mortality was sufficiently high to reduce total assets of banks founded before 1890 over the 20-year period in both regions. So even in the North, net growth was accounted for by new banks. The reduction in old bank assets was slight for

[51] Net newborn asset growth rates to 1910 (net of infant mortality) were calculated for each year (joint stock) or each five year birth cohort (coops). As these growth rates reflect both the ageing process of individual banks and the economic conditions of particular time periods, they are not really comparable. To gain some sense of regional differences, however, consider the following averages (over all four such cohorts for the coops): for *banche popolari* 21% in the North, 14% in the South; for joint stock banks 11% in the North and −3% (!) in the South. This last figure results from years in which only a single bank was founded, which later failed.

[52] The problem of zero-birth years and negative asset growth years in the South complicates the counterfactual simulation reported. High Northern fertility inevitably has little effect when applied to years in which Southern net growth rates were zero or negative, for example. For this reason only the results of the *joint* counterfactual are reported.

[53] Given the enormous success of the great mixed banks founded in the 1890s it is not surprising that when they are included, the calculation yields a counterfactual increase of 198% in Southern 1910 assets – almost all of the required 269% increase necessary to eliminate the growth gap.

[54] These rates refer to the average annual growth rate of all pre-1890 banks that survived each year, rather than referring to the smaller subset of only those banks that survived the full 20 years. This choice was dictated by the overall growth decomposition procedure. The figures for cooperative banks are, as usual, based on five-year sub-period survival.

the North, a dramatic 72 percent in the South. How much of the growth gap is explained by old bank survivor growth rates? Excluding the great banks, the counterfactual calculation suggests this factor can explain 56 percentage points of the 187 percent gap. As with birth and death rates, this factor alone is important but not clearly more so than the others.[55]

The data on bank asset vital rates suggest several conclusions: (1) there is – surprisingly – no evidence of a decisive impact of the crisis of the early 1890s on the Southern banking system; (2) individual large banks have a major impact on overall vital rate estimates; (3) no single demographic factor was the key to explaining divergence in regional assets; and (4) the South suffered a disadvantage on every indicator and throughout the period, suggesting it was a chronically and comprehensively less healthy environment for banks.

IV

The impact of large banks on asset vital rates suggests that an analysis differentiated by size may be fruitful. We begin by examining the regional size distributions of banks. Kernel density estimates of the distributions of the logarithm of bank assets are presented and compared in Figures 5, 6, and 7.[56] An approximately normal distribution of log total assets is apparent for the North.[57] Apart from a setback in 1895 (not depicted), the distribution shifts steadily to the right as mean and median bank size increase (approximately doubling over the period).[58] Most of the increase in total Northern assets was therefore due to larger banks, rather than more banks (numbers of which increased by about 25 percent). The Southern distribution behaves rather differently: it displays much less growth (a mere 7 percent increase in mean bank assets, all in the final five-year period); it is clearly not normal in 1890 or 1910; and it increasingly lacks an upper tail, indicating an absence of large institutions.

A normal distribution of the logarithm implies a right-skewed distribution of the level of bank assets, i.e. one with a long upper tail. Such skewed distributions have

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[55] A small sectoral composition effect, as usual favoring the North, has been neglected in this decomposition of the growth gap. It is also worth noting that the effects of mortality, fertility, and old bank growth are complementary, such that individual effects do not add up to the total growth gap while their combined, joint effect does.

[56] Kernel density estimation is essentially a smoothing procedure applied to a histogram. The questions of interest are how wide a window (bandwidth) around the point being estimated to consider and what weighting scheme (kernel) to apply to the frequencies surrounding the point within the window. These densities were estimated using the Epanechnikov kernel and a bandwidth of 0.35. The procedure was applied to the logarithm of total assets.

[57] The hypothesis of log-normality cannot be rejected for any of the smoothed distributions except 1905, which has a leptokurtic distribution – one that is too peaky.

[58] Mean bank size (level, not log) increased by 80%, median by 107%. It is worth noting that the variance of the log distribution was approximately constant. For no pair of years can the hypothesis of constant variance be rejected.
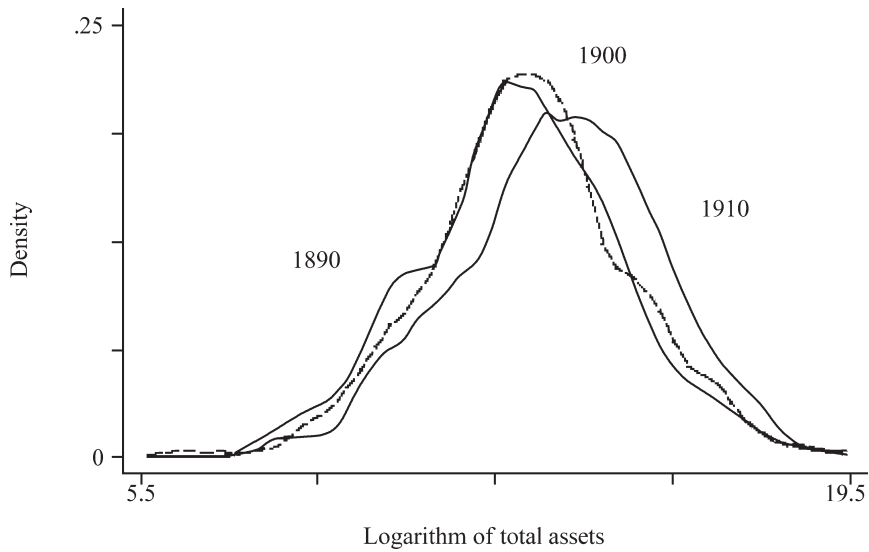
Figure 5. *Estimated bank-size distributions: North*
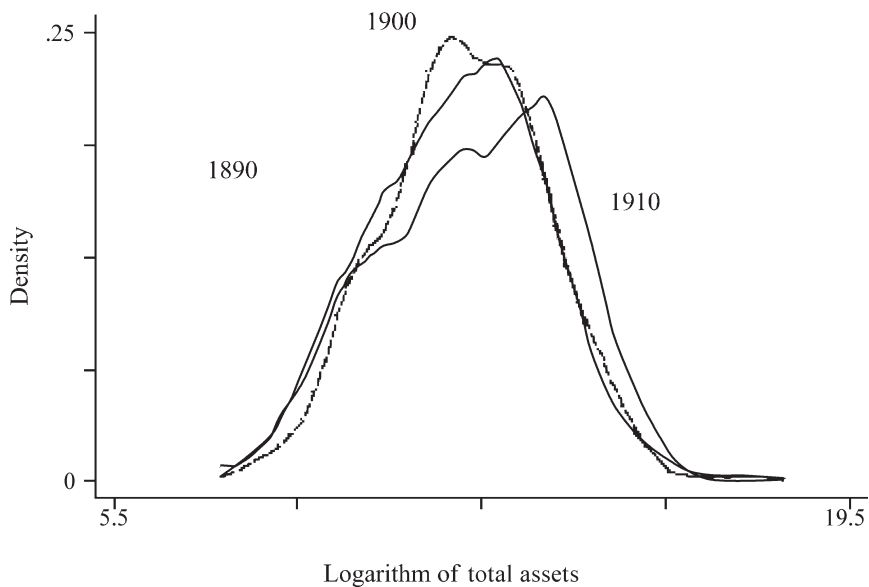*Source*: Author's calculations based on the source as for Figure 3.

Figure 6. *Estimated bank-size distributions: South*
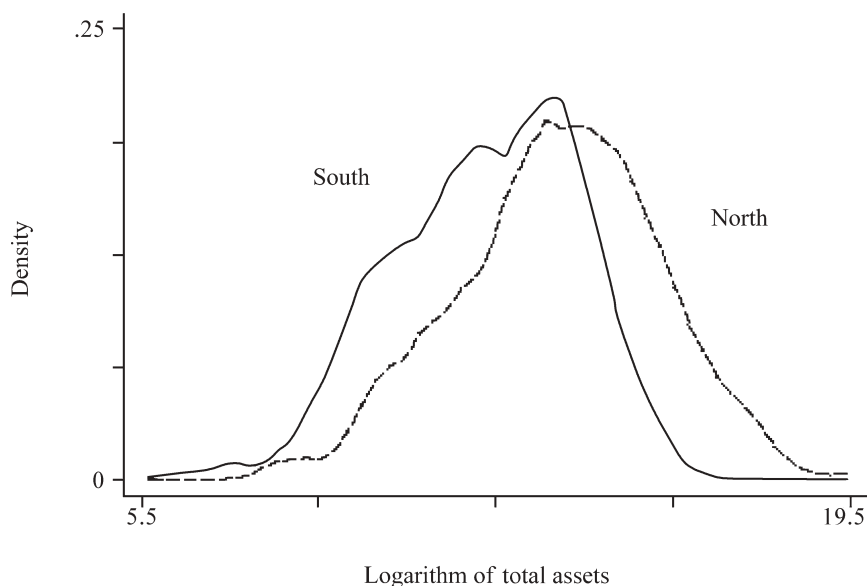*Source*: Author's calculations based on the source as for Figure 3.

Figure 7. *Estimated density of log total assets in 1910*
Source: Author's calculations based on the source as for Figure 3.

been widely observed among economic variables. Income, wealth, plant size and firm size can often be quite accurately described by the log–normal, Pareto, or similar distributions. Static cost theory cannot easily explain such distributions, and was judged 'both irrelevant ... and empirically vacuous' by prominent early contributors to the literature.[59] Explanations came instead to focus on stochastic evolutionary mechanisms. A cornerstone of such efforts was Gibrat's Law of Pro-portionate Effect, which says that the probability distribution of possible growth rates for a firm is independent of size of the firm. Combined with an assumption about new entry of small firms at a constant rate, this generates the prediction of a skewed distribution of constant variance but an increasing mean. Recent research indicates that Gibrat's Law does not fully characterize firm life cycle patterns, which instead display decreasing growth probabilities with size (and age), but increasing survival probabilities.[60]

Before considering such life-cycle data (in Section V below), it is worth con-sidering economic (rather than purely statistical) explanations for the coexistence of banks of different sizes. Even in contemporary financial systems, where concentration has increased dramatically in recent decades, size distributions are not collapsing around one efficient bank size; a role persists for banks of differing sizes,

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[59] H. Simon and C. Bonini, 'The size distribution of business firms', *The American Economic Review*, 48 (1958), p. 608.
[60] A nice summary of the literature is J. Sutton, 'Gibrat's legacy', *Journal of Economic Literature*, 35 (1997).

including small, local banks. Yet there has been little work on bank size distribu-tions.[61] A plausible model for Italy circa 1890–1910 can be derived from basic assumptions concerning information, governance, and state intervention. (1) Infor-mation problems were severe, according to recent research in Italian banking history. The new firms, technologies, and markets of the period were difficult to evaluate in the absence of a 'track record', as were local entrepreneurs, who sought to reduce risk by diversifying family activity into numerous different lines of business and to maximize access to credit (as well as protect family wealth from creditors) by obfuscating their financial situation.[62] In this context, most banking was 'relationship banking', requiring personal knowledge of the borrower and his business, which gave banks embedded in local communities informational advan-tages over outsiders.[63] (2) Governance was complicated by the implied need for managerial discretion. A bank growing larger through greater numbers of customers required a greater number of discretion-exercising loan officers, leading eventually to principal-agent problems as monitoring their activities became impossible under the information and communication technologies of the day.[64] At some point, these effects offset conventional economies of scale and scope in banking, though growth via relationship banking with smaller numbers of large clients would remain a viable strategy. (3) The actions of central and local government in Italy segmented banking by category, establishing and fostering the viability of locally oriented institutions such as cooperatives and savings banks in a pattern typical of European polities with

[61] Recent contributions include D. Robertson, 'A Markov view of bank consolidation', Office of the Comptroller of the Currency, *Economic and Policy Analysis Working Paper* (2001) and T. Hannan and S. Rhoades, 'Future U.S. banking structure: 1990 to 2010', *The Antitrust Bulletin*, 37 (1992). The theory sketched here partly follows suggestions in H. Ennis, 'On the size distribution of banks', *Federal Reserve Bank of Richmond Quarterly*, 87 (2001).

[62] Overviews of local banking and how local banks fit into the larger banking system in Italy in this period, emphasizing information problems even for 'community-embedded' Northern bankers and entrepreneurs, can be found in G. Conti, 'Le banche e il finanziamento industriale', in *L'industria*, vol. 15 of *Storia d'Italia, Annali* (Turin: 1999); and idem, 'Processi di integrazione e reti locali: tipologie del credito e della finanza', in Conti and La Francesca, *Banche e reti di banche*. See pp. 423–8 in the latter for the multiple activities of local entrepreneurs in particular. T. Guinnane, 'Delegated monitors, large and small: Germany's banking system, 1800–1914', *Journal of Economic Literature*, 40 (2002), offers a recent overview of theories of intermediation and their application in historical context.

[63] Conti, 'Processi di integrazione', pp. 428–34. Of an earlier period contemporaries wrote that 'it is enough to travel fifteen or twenty kilometers . . . to find the porfolio full of paper of every quality that cannot be disposed of, because it is not known outside the town where it was issued.' G. Piluso, 'Mercati settoriali e squilibri regionali', in G. Sapelli (ed.), *Capitalismi a confronto: Italia e Spagna* (Soveria Mannelli, Catanzaro, 1998) p. 101, quoting Plebano and Saguinetti, *La questione bancaria e il servizio di Tesoreria* (Florence, 1869).

[64] See Piluso, 'Mercati settoriali', pp. 116, 153 (note 150), for discussion and examples of governance issues in the Banca Generale and Banca Commerciale. The Banca Nazionale's policy of expansion through coopting local bankers led to similar problems: Di Martino, 'L'esito fallimentare'. See Conti, 'Processi di integrazione', p. 429, on related issues in the Bank of Italy.

influential peripheries.[65] Legal restrictions prohibited mergers and acquisitions that crossed boundaries, limited them within the cooperative category, and made no provision for them among savings banks.

These considerations imply market segmentation (geographic and/or sectoral) and limits to growth by branching or by mergers and acquisitions. Local markets with few or small borrowers could constrain growth on the asset side or force banks to channel funds out of local credit and into assets relatively free of information problems, e.g. government securities or deposits with other banks. The model has less clear implications for the liability side, but local capital and deposits would constrain growth in the absence of inter-bank credit channels or access to inter-regional capital markets. In such a world, a stable distribution of banks of different sizes, serving different clienteles in different markets, might be expected to persist. If we use cities as proxies for local credit markets, we can conduct an informal test of the model, checking whether regional city size distributions parallel those for banks. They do not. The South's city size distribution in 1911 is log-normal, unlike that of banks. Moreover, its mean and median exceed those of the North, though greater population density in the North meant a greater number of total cities there. So this (admittedly crude) proxy for local market sizes suggests they could explain fewer banks in the South, but not the absence of large banks there.

The contrast is highlighted in Table 5, in which banks have been allocated to size intervals based on log total assets. The first category includes banks with from 0 to 9.0 log assets (ca. 8,000 lire in levels), Class 2 those with from 9.0 to 9.5 log assets (8,000 to ca. 13,500 lire), Class 3 those between 9.5 and 10.0, and so on. These increments of one half in log assets imply increases of 65 percent in asset levels. Banks in the top size class exceed 17.5 in log assets, ca. forty million lire in levels. (The zero class is explained below.) A growing regional disparity in the upper reaches of the distribution is evident. In 1910, the South had no banks at all in the top three size classes, and only five in the next two. The North had 92 banks in these same five classes. The largest institutions, such as the Banca Commerciale, might be seen as monopolizing the business of the nation's largest borrowers from a Northern location, without implying any detriment to the South. But the data show that the South lacked not only these great banks, but the entire range of large banks. The North's 90-odd large banks are responsible for 85 percent of total Northern bank

[65] This draws on the work of Daniel Verdier. See D. Forsyth, 'Introduction', in D. Forsyth and D. Verdier (eds.), *The Origins of National Financial Systems: Alexander Gerschenkron Reconsidered* (New York, 2003); D. Verdier, 'Explaining cross-national variations in universal banking in nineteenth-century Europe', in Forsyth and Verdier, *Origins*, and, on Italy in particular, A. Polsi, 'The early development of universal banking in Italy', in Forsyth and Verdier, *Origins*. The segmentation of Italian markets brought about by legal distinctions between and restrictions on the several types of bank are also a focus of Piluso, 'Mercati settoriali'. See the same source, pp.114–17, 125, on how the switch from diffusion through new unit banks to the spread of ever-larger branch networks did not occur before the very end of the nineteenth century in Britain or France either.

Table 5. *Regional bank-size distributions*

Size class	North					South				
	1890	1895	1900	1905	1910	1890	1895	1900	1905	1910
0	321	277	257	226	207	236	261	296	279	325
1	7	14	10	10	8	7	12	9	19	11
2	7	1	7	11	2	9	14	13	14	9
3	9	12	9	6	9	20	18	19	26	17
4	14	26	20	11	13	31	23	26	21	20
5	18	17	22	21	17	24	33	27	30	20
6	18	26	24	19	23	42	40	28	32	25
7	29	37	27	34	20	55	48	36	29	31
8	40	51	45	35	36	51	54	39	46	28
9	45	44	52	52	33	48	44	41	30	27
10	46	44	46	51	49	51	42	43	38	43
11	41	40	44	43	58	33	20	30	28	28
12	34	34	38	56	43	24	20	17	24	35
13	20	24	33	35	52	15	10	9	13	18
14	22	19	22	30	44	8	6	7	5	11
15	16	12	13	20	28	3	1	2	4	3
16	11	11	10	14	24	2			1	2
17	8	5	8	12	12			1	1	
18	7	4	5	5	14	1	1			
19	5	3	5	9	14	1	1	1		1

Source: Author's calculations based on data detailed in note to Table 1.

assets (45 percent excluding the four great universal banks).[66] Thus, much of the regional divergence in total bank assets is driven by the fortunes of large banks.

V

The life-cycle patterns underlying a statistical model based on Gibrat's Law, or some other general characterization of stochastic firm evolution, can be investigated directly through the estimation of *transition probability matrices*. To the nineteen discrete size classes displayed in Table 5, a further 'zero' category is added to include banks that will eventually be born or have already died.[67] A bank's life is a series of transitions between these categories (or 'states'): birth is movement from the 0 category to any other; growth is moving up a category; death is transition to the zero state, and so on. A probability is associated with each possible transition between a

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[66] The Banca Commerciale, Credito Italiano, Banco di Roma and Società Bancaria Italiana.
[67] Total categories are limited to 20 by the software in use: user-written code for the Stata program.

pair of states. If these probabilities are constant over time and depend only on the state presently occupied by the bank, the sequence of states a bank occupies is described by a simple first-order Markov process. Such a process is characterized by a transition probability matrix $\mathbf{T}$, each element $\mathbf{T}(i, j)$ of which gives the probability of moving from the state represented by row i to the state represented by column j. (The probabilities in a row therefore sum to one.) Transition probabilities can be estimated by the observed relative frequencies of transitions in the sample.[68]

Estimated five-year transition matrices for each region are presented in tabular form in the appendix. Diagonal elements give the probability of remaining in the same state. Elements above/to the right of the diagonal indicate transitions to larger size categories. Cells below/to the left of the diagonal correspondingly indicate shrinkage. As transit into the zero state means the death of the bank, mortality rates can be read down the first (leftmost) column. Transit from the zero state means a bank's birth. It turns out (fortuitously) that the number of banks in the zero state roughly equals the total number of banks in operation in each observed year. Therefore, reading along the first row gives births into each size category, approximately as a percentage of total banks in the system. Summaries of the transition matrix probabilities are presented graphically in Figures 8 and 10 as well as in Table 6.

The life experience of a typical Northern bank was dominated by growth. The probability of growth by at least one size class averages over 48 percent per five-year period across all categories. It displays no systematic size dependence other than being quite small for category 1. The most likely growth is transition to the next-higher size category, but two-class transition probabilities in the 10–20 percent range are not uncommon. As category midpoints rise by 65 percent for each class, such growth is quite substantial. 'Stasis' is the next most likely outcome in the North. The high probabilities for growth or stasis are seen in Figure 8 as the steep ridge running diagonally away from the reader.[69] Shrinkage and death, by contrast, were unlikely, with probabilities generally less than 10 percent outside the smallest categories. (Mortality averages 25 percent in categories 1–4.) Graphically, death rates are shown as the low ridge (higher for smaller banks near the graph's origin) along the left axis. A natural interpretation of the perilous existence of small banks is that category 5 (assets of at least 36,000 lire) represents a threshold size for viability. Birth rates (again as a percentage of total banks in the system), also show size dependence in the

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[68] In fact, these are the maximum likelihood estimators. The estimates reported here consider the entire 20-year period as a whole. Every bank is observed in each of five fifth-years (1890, 1895, etc.), yielding four transitions per bank. Separate transition matrices for each five-year period would of course permit more detailed description, contrasting early crisis with later growth in the North, for example. Unfortunately, the small sample at hand precludes reliable estimation of multiple transition matrices, *a fortiori* the estimation of a regime-switching model, which would in principle be most interesting.

[69] The origin of the graph, closest to the viewer, is the probability of a 0–0 transition. The associated spike is not meaningful here and has been suppressed in the graph.
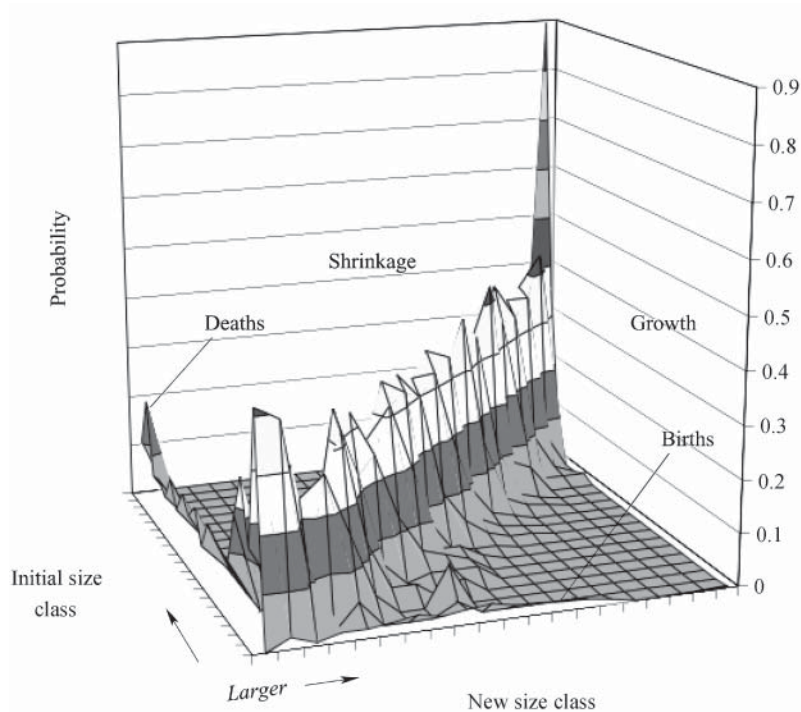
Figure 8. *Transition probabilities: North*
Source: Author's calculations based on the source as for Figure 3.

North, being clearly greatest in the medium–small categories 5–9, though non-negligible in all classes up to 15. (For reference, categories 9 to 11 contained the Northern mean and median throughout the period.)

How was the distribution evolving over time? The transition probability matrix can be used to generate *n*-step-ahead transition probabilities, i.e. the probability of being in category *j*, *n* periods in the future, beginning from category *i*. (This is done by multiplying the transition matrix **T** by itself *n* times, or **T***ⁿ*.) Four-step-ahead (20-year) transition probabilities for the North are depicted in Figure 9. The tall peak in the far corner represents the probability of remaining in the largest category, having started there. The clearly-off-center diagonal 'wave' represents the probabil-ity of having grown by one or more categories. The 'wall of death' on the left-hand side indicates the chances of a bank having died (and remaining dead: dead banks enter the pool of potential births in the 'zero' category, making resurrection possible). These probabilities are quite high: around 20 percent even for those banks in the middle and larger size classes with the lowest estimated chances of failure. A fair bit of 'turbulence' (bank destruction and creation) is thus implied. Still, growth is the dominant message in this picture. The average probability of having grown at

Table 6. *Summary of transition probabilities*

| | Size classes | | | |
	1–4	*5–9*	*10–14*	*15–19*
Birth				
N	1.6	2.7	1.8	0.2
S	2.4	2.3	0.2	0.0
Death				
N	25.4	8.1	8.7	9.7
S	35.9	18.4	14.2	21.7
Shrinkage				
N	8.3	9.0	8.8	6.4
S	8.9	16.2	16.8	25.8
Stasis				
N	27.3	32.1	30.4	48.8
S	34.9	32.7	40.5	45.0
Growth				
N	41.1	50.8	52.1	43.8
S	22.6	32.5	28.8	9.4

Source: Author's calculations based on data detailed in note to Table 1.

least one size class after four periods is 62 percent. The conditional probability of growth, given survival over the four periods, is approximately 60/80 = 75 percent.[70]

To recover the implied long-run, steady-state distribution, one can solve algebraically for that state vector which, when (pre-)multiplied by the (transpose of the) transition matrix, yields itself. Alternatively, many-step-ahead transition probabilities are informative in this regard. Either approach reveals that the Northern transition matrix generates a stable long-run distribution. The mean is predicted to grow substantially (more than doubling), but all banks do not end up in the largest size class.[71] The reason, in this exercise, is that banks are never born into the highest size classes, but must endure long enough to grow into them, and must continue to survive non-trivial probabilities of failure once having arrived there. An alternative simulation, in which categories are defined as percentages of mean bank size rather than by the absolute level of total assets, also yields a stable long-run distribution in which a place remains for banks of widely varying dimensions.

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[70] The low ridge along the right axis indicates the cumulative probability of having been born or reborn from the pool of potential new banks. It is not directly meaningful here.

[71] Starting with the actual distribution, one can iterate forward using the transition matrix. The 10-step-ahead distribution is already approximately the same as the algebraically derived steady state. In deriving the mean, the minimum (maximum) class was assigned a value 0.5 below (above) the lowest (highest) size threshold. This likely understates the true log mean for the maximum category.
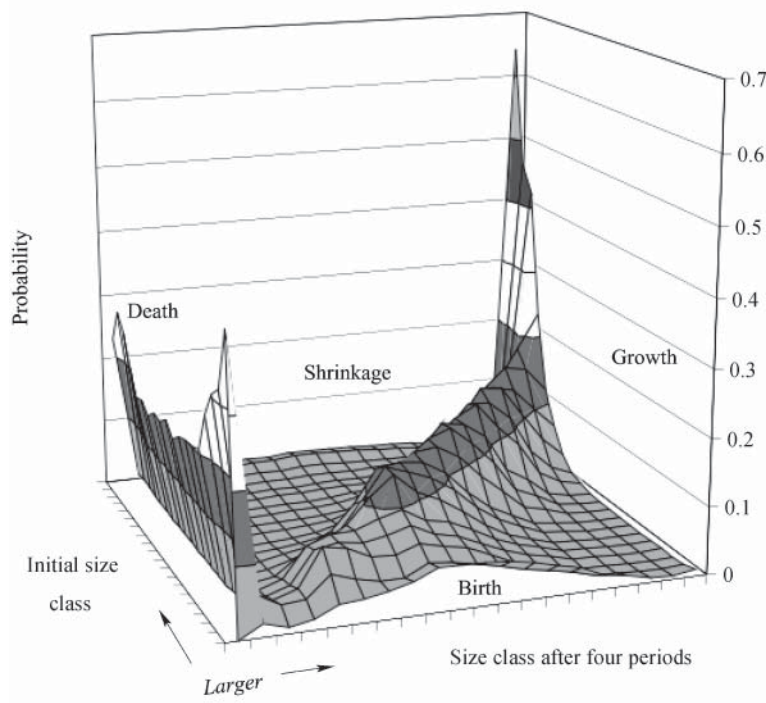
Figure 9. *Four-step-ahead transition probabilities: North*
Source: Author's calculations based on the source as for Figure 3.

    The Southern transition matrix has rather different properties than the Northern. Mortality rates are dramatically higher across most size classes. They average 22 percent, nearly twice the North's 12 percent average (this despite two Southern categories with a single bank that did not fail, hence mortality of 0 percent). As in the North, mortality is highest for small banks, but the decrease with size is more gradual and less suggestive of a minimum viable size, as depicted clearly in Figure 10. Compared with the North, shrinkage is also a relatively high-risk event, particularly for larger banks; the few banks in categories 15–19 have a 26 percent chance of shrinking.[72] Stasis probabilities do not differ dramatically from those in the North, but are high relative to growth chances, which they substantially exceed in three of four size ranges. Southern growth probabilities are only about half those in the North. This makes the central ridge in Figure 10 steep and narrow along the stasis diagonal, compared with that for the North. The ridge is especially narrow towards the far corner, displaying graphically the low 9 percent average growth probabilities for categories 15–19. More evident from the appendix matrix than the graph is the

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[72] Note that shrinkage can be a stage of failure due to the method of identifying transitions here. If a bank shrank dramatically in 1905 (a fifth-year) but did not officially fail until 1906, it would be recorded with two separate transitions: shrinkage in 1900–5, and failure in 1905–10.
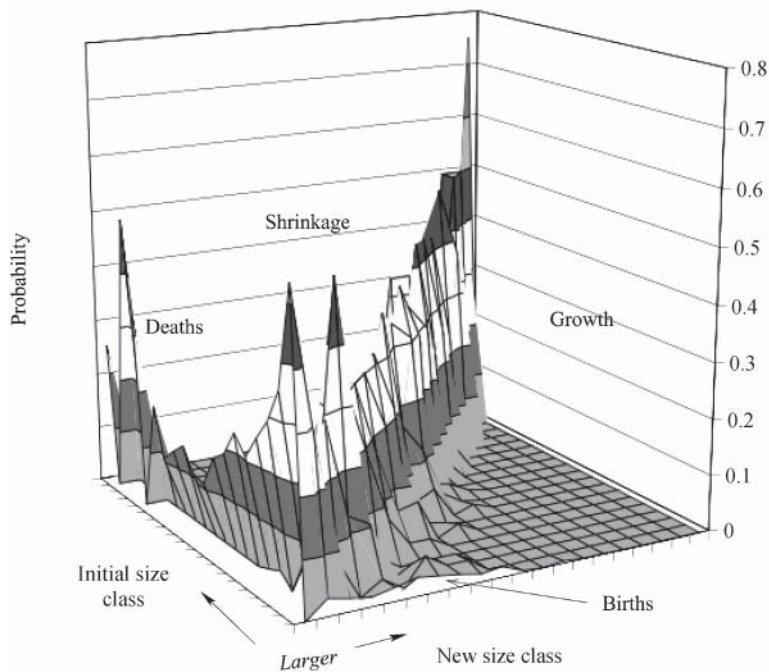
Figure 10. *Transition probabilities: South*
Source: Author's calculations based on the source as for Figure 3.

fact that transition probabilities into the three largest size classes are actually zero in the South; these states are completely inaccessible from below. What is more, the next-lower category (16), though accessible from below, has a zero survival probability. Thus, category 15 (assets in the 5 to 9 million lire range) is effectively the highest that could be reached in the South. Finally, Southern births were concentrated in the smaller size classes, relative to Northern. Almost no Southern banks began life above category 9, while Northern births were not uncommon up to category 13.

Southern four-step-ahead transition probabilities accentuate these differences and are graphed in Figure 11. Immediately obvious is the emergence of a 'wall of death' on the lefthand horizontal axis. The cumulative probability of death (and no rebirth) over four periods averages 43 percent: twice the Northern average. The size dependence of cumulative mortality rates is again evident. Again in contrast to the North, if death is avoided, growth is *not* a near-certain proposition; below the wall of death, the surface is turbulent, with non-trivial chances of shrinkage. The zero transition probabilities into the highest states are of course reflected here as well. In fact, cumulative growth probabilities fall off steadily above category 9 (just above the mean and median). In the long run, the transition probability matrix predicts a stable distribution. In contrast to the North, however, this long-run steady state has no banks in the largest size categories, shows no increase in mean bank size from 1910,
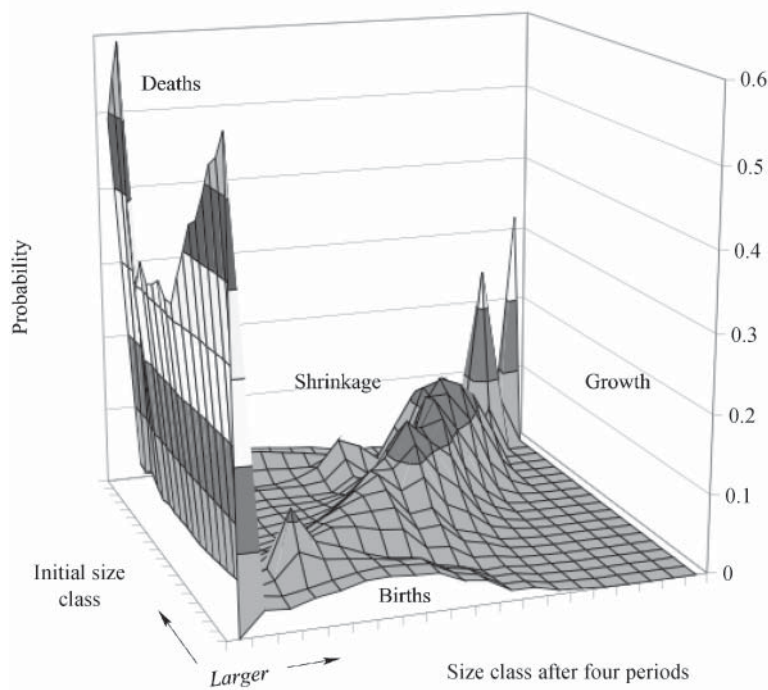
Figure 11. *Four-step-ahead transition probabilities: South*
Source: Author's calculations based on the source as for Figure 3.

and implies a net loss of some 75 banks by the tenth period (50 years).[73] Summariz-ing, the South's size distribution had a lower mean and lacked an upper tail because Southern banks were born smaller and less frequently, grew more slowly – especially in the moderately large size classes, and died earlier.

<div align="center">VI</div>

Not only the greatest banks, but the entire range of large banks was missing in the South. Did such large institutions have a unique role in the Northern system, where they were numerous? This section examines the balance sheets of large banks to discern any unique features and compare them with the predictions of the model – for example that bank growth could be constrained by local markets on the asset side, diverting additional funds gathered into holdings of low-risk, low-information cost securities. For comparison purposes, four groups of banks are defined: (1) the handful of great mixed banks discussed previously;[74] (2) the remaining large banks in

[73] In fact, the probabilities of being in the largest size categories are not quite zero for banks that began life in them. Growing into them from below is of course impossible, as we have already seen.
[74] See note 49.

Table 7. *Average asset shares by bank size*

	Small banks N	Small banks S	Large banks	Great banks
Assets				
Cash	4.3	4.6	2.9	4.0
Bills of exchange	61.3	58.5	33.1	20.3
3 months or less	26.1	37.8	18.4	15.2
exceeding 3 months	34.2	19.3	13.0	2.9
foreign	0.2	0.1	0.4	2.2
Advances	1.1	2.8	1.4	0.1
against securities	0.5	0.5	0.9	0.0
against goods	0.3	2.1	0.4	0.0
Riporti *(contango loans)*	1.1	0.3	8.7	15.1
Long-term loans	1.3	3.0	1.6	2.5
mortgages	0.9	1.5	1.1	2.5
unsecured, to individuals	0.4	1.3	0.2	0.0
Securities	7.7	4.9	20.8	12.3
national government	5.0	3.1	12.8	3.0
provincial & municipal govt.	0.7	0.4	3.0	0.4
corporate bonds and shares	1.4	0.7	4.0	8.7
Real property	1.5	1.3	1.7	5.5
Current accounts	10.9	4.2	17.9	28.1
guaranteed	4.4	1.6	5.7	1.1
diverse	3.8	1.8	5.6	12.0
correspondents	4.5	1.4	8.9	21.3
Furnishings & start-up costs	1.0	2.0	0.2	0.2
Bills for collection	1.9	1.5	0.9	0.4
Non-performing loans	1.2	5.1	0.7	0.1
Tax collection	0.7	1.2	0.6	0.0
Balance due from shareholders	1.1	2.9	0.5	0.3
Diverse assets	4.2	6.9	8.5	10.3

Source: Author's calculations based on data detailed in note to Table 1.

categories 15–19, numbering between 35 and 92 depending on the year; and (3, 4) the residual smaller banks in each of the two regions, numbering at least 300 per region. Asset and liability structures are presented in Tables 7 and 8 by group. The tables report the simple averages across banks of each item's share in total assets or liabilities averaged over the entire sample period.[75]

The story of the great universal banks is well known. The balance-sheet figures are consistent with the standard characterization of this group as willing (under the

[75] Only items and sub-items with a share of at least 1% for at least one group are reported. Variation over time within groups is of course evident in the data, but is not such as to undermine the group differences reported here.

Table 8. *Average liability and income shares by bank size*

	Small banks N	Small banks S	Large banks	Great banks
Liabilities				
Capital	25.1	45.0	15.5	29.1
nominal share value	20.6	38.9	11.4	25.4
reserves	4.4	6.0	4.1	3.7
Savings	43.9	32.4	39.4	8.0
savings deposits	35.1	19.9	29.9	5.6
savings certificates	8.8	12.5	9.5	2.4
Current accounts	21.7	12.1	30.9	40.6
interest-bearing	14.1	7.8	18.6	11.9
non-interest-bearing	2.9	2.7	3.6	8.8
correspondents (1900-10 only)	6.7	2.1	13.0	31.5
Foreign exchange acceptances	1.5	1.3	0.8	5.7
Riporti *(contango debts)*	0.9	0.3	2.5	4.9
Diverse debts	4.1	5.5	9.8	13.0
Bills received for collection	1.0	1.0	0.5	0.3
(Bills rediscounted)	(12.2)	(15.0)	(4.0)	(0.8)
Income and expenses				
Income & profits	4.8	5.4	3.2	3.3
Expenses & losses	3.2	3.7	2.0	2.0
Net profit on assets	1.6	1.8	1.1	1.3
Return on capital	6.4	4.0	7.5	4.9

Source: Author's calculations based on data detailed in note to Table 1.

press of circumstance) to take on risk, and seeking to meet all the needs of their clients 'from cradle to grave'. The great banks had the lowest share of short-term commercial assets (discounted bills): only 20 percent of assets on average.[76] By contrast, they had quite high shares of risky advances and *riporti*, or contango loans: 15 percent and rising over time.[77] They also had the highest holdings of corporate stocks and bonds at 9 percent, and the highest share of assets in current accounts, a typical instrument for renewable, *de facto* medium-term credit and one that was risky in the sense that it could not be rediscounted. 'Correspondent' current accounts, the most important sub-item here, represented loans to large firms as well as balances owed by correspondent banks. On the liability side, the great mixed banks did not gather a significant share of resources from savings deposits (deviating from the theoretical ideal of the universal bank) but relied instead on capital and on current

[76] This share rose to some 32% over time, but remained lower than in the other categories.
[77] In a *riporto* or contango loan, the bank purchases securities from the borrower, who agrees to repurchase them at a specified time and price. With a *riporto*, the bank owned the securities; if in need of liquidity it could sell them on the market or temporarily via *riporto passivo* to another bank. *Riporti* were also taxed less heavily than advances, particularly for larger sums. See P. D'Angelo, *La Tecnica Bancaria* (Rome, 1915), pp. 380–407, 443–77.

account deposits, especially from bank and large firm correspondents. Diverse debts, foreign exchange acceptances, and *riporti* were further non-trivial sources of funds for the great banks, which had almost no recourse to rediscounting with the banks of issue or other large banks.

Small banks have been depicted in the literature as operating in segmented, local markets on the basis of personal knowledge of borrowers and the ability to monitor them. They are supposed to have provided mostly short-term commercial loans to local industrialists and merchants and to have enjoyed the trust of local savers. Through their correspondent relationships, they enabled large banks to offer effective payments and collection services on a nationwide basis, themselves gaining access to funds through rediscounting. This characterization is borne out by the balance-sheet data. Assets of the small banks were dominated by short-term commercial credit in the form of discounted bills of exchange, which made up about 60 percent of the total.[78] *Riporti*, advances and corporate securities were all relatively unimportant. Other security holdings were relatively small and dominated by government bonds. Current account shares were much smaller and much less dominated by correspondent relations. It is worth noting that, despite the apparently less risky nature of their assets, the small banks carried a distinctly larger share of non-performing loans on their books than the great banks. On the liability side, the small banks drew the largest share of their funds from savings deposits and savings certificates: some 30–40 percent, compared with less than 10 percent for the great banks. Most other sources of funds are correspondingly less important: current accounts – especially non-interest-bearing and/or with correspondents, *riporti*, foreign exchange acceptances, and diverse debts. Substantial recourse was had to rediscounting, equivalent to about 20–25 percent of the portfolio of bills.

Can Northern and Southern small banks be regarded as pursuing the same strategies, as playing – or at least attempting to play – the same roles in the local economy? Judging from the balance-sheet data, the answer is yes. In the first place, the small banks of the two regions are more like each other than like the large or great banks. Both have much larger asset shares in their portfolio of discounted bills than the other banks; both have substantially smaller holdings of securities; both have much smaller asset proportions in advances and *riporti*; both extend less credit via current accounts; on the liability side both collected relatively few current account deposits and relied relatively heavily on rediscounting. Second, some of the admittedly important contrasts between them reflect differences in the local economy and in bank performance more than differences in strategy. On the liability side, for example, the South's smaller shares in savings and in current account deposits reflect the diffidence of small savers, who preferred the postal savings banks, and the paucity of large institutional depositors. Rather than pursuing a different strategy, Southern small banks simply experienced difficulty raising funds in any way, ending up with a

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[78] The potentially important short- vs. long-term breakdown in the data is unfortunately not reliable and will not be discussed further.

much less leveraged position and consequently lower return on capital. Similarly, two striking differences on the asset side are current account credits and non-performing loans. These too can be interpreted as reflecting the nature of local demands for credit and small bank performance in a difficult environment. (The balance sheets themselves of course cannot reveal whether higher shares of non-performing loans should be attributed to exogenously greater risk in the South, weaker information-generating and sanctioning mechanisms there, management incompetence, borrower malfeasance, or even different accounting practice.[79]) If small Southern banks attempted, broadly speaking, to operate like those in the North but had less favorable results on the asset side, and considerably less success attracting deposits on the liability side, perhaps their fortunes more reflected than caused slow local development.[80]

What of the big banks? These institutions have not been studied as a group. Judging from the balance-sheet data, they seem in some ways to have simply occupied a middle ground between the small banks and the great. Their holdings of bills of exchange, their extension of credit through *riporti*, and their current account shares all take on intermediate values, for example. Yet one feature does clearly distinguish the big banks on the asset side: the very large share (21 percent) of securities, most of which are national or local government bonds (16 percent). This could be interpreted as lending stability to the overall portfolio, offsetting the risk of large loans to big borrowers in the form of *riporti* or current account overdrafts. Or it could be seen as a natural outlet for surplus funds gathered that could not be profitably invested locally. In the narrower terms of the model, this would suggest growth driven on the liability side beyond the constraints of the local market on the asset side. This notion is further supported by the most salient feature of large-bank liabilities, their great success in attracting local funds, which gave them far and away the lowest share of capital (alternatively – the highest leverage ratio) of the four groups. In contrast to the great banks, the large banks were just as successful in attracting savings deposits as were the small banks. But they also attracted a significant volume of current account deposits, both in ordinary interest-bearing accounts and in correspondent accounts. This suggests an abundance of local business and banking funds and the desire to

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[79]   See A'Hearn, 'Southern Italians', for an effort to puzzle out some of these competing explanations for the *banche popolari*. Some regional differences at the sub-item level are revealing, such as greater Southern reliance on savings certificates, which offered greater security to the bank by reducing the likelihood of large and sudden withdrawals, at the cost of higher interest. This is suggestive of the difficulty Southern small banks experienced in winning over depositors. A more problematic difference for the argument advanced here that small banks in both regions adopted similar strategies are higher interest rates in the South. (Direct evidence on interest rates is available in the BI database, and can be inferred here from the higher rate of income and profit in Table 8.) Were high interest rates necessary to offset losses, or did high interest rates permitted by market power cause adverse selection?

[80]   That financial market structure and bank operations are reflections more than causes of the nature of local economies is a recurring theme in Piluso, 'Mercati settoriali', e.g. pp. 101–3, 155–6.

hold them as current accounts, perhaps a function of the level of regional develop-
ment. It is not surprising that the large banks made very little use of rediscounting.
They also stand out as the most profitable in terms of return on capital, reflecting a
high leverage ratio and low losses.

   A final question about the big banks regards how they got that way. Time is an
important part of the answer. In 1910, the average age of the big banks was 28 years,
as against only 17 for the small banks and 18 for the great banks. The large banks got
big by slowly growing to that size over a long period, along the way earning the trust
they enjoyed by surviving moments of difficulty like the crisis of 1893–4. Their
relatively conservative asset policy had perhaps also been selected in this fashion.
This points to the gradual amassing of local deposits as the local economy developed,
rather than the injection of venture capital or outside funds pushing local develop-
ment otherwise constrained by the availability of funds. All in all, the evidence
seems consistent with the model sketched previously, in which banks are con-
strained on the asset side by the number and size of local borrowers in a segmented
market. Growth beyond these constraints was driven by accumulation of local
deposits, and resulted in surplus funds being diverted into safe assets such as govern-
ment securities. Thus it would seem that the large banks reflected more than caused
the development of the local economies in which they were situated.

VII

The finance-led growth approach fails as a monocausal explanation for regional
divergence in Italy around the turn of the (last) century. True, the South had been
less financially developed than the North since before unification; and the promising
expansion of Southern banking begun during the 1880s was cut short by a financial
crisis on the eve of Italy's most intense phase of industrialization. It is true as well that
the South's joint stock and cooperative banks withered over the succeeding decades.
But the new, more detailed evidence developed here fails to sustain the initial
promise of a banking-led explanation of development failure.

   The new time series on bank asset vital rates fails to show a dramatic impact of the
crisis of the early 1890s in the South. The region is revealed instead to have been a
chronically and comprehensively unhealthy environment for banks. Throughout
the period it had lower fertility rates, slower growth rates, and higher mortality rates.
The chronic and comprehensive nature of these disadvantages at least suggests that
economic development was determining financial development as much as vice
versa.

   Analysis of the size distribution of joint stock and cooperative banks reveals
a little-remarked feature of Southern financial development. Much of the regional
gap in bank assets resulted from the South's lack of an entire range of large banks.
Transition probability matrices show that the lower mean and missing upper tail of
the South's distribution resulted from Southern banks being born smaller and
less frequently, enjoying slower growth – especially in the larger size classes, and
suffering higher mortality – especially in the smaller categories.

Finally, balance-sheet data show that the large banks the South lacked appear to have reflected more than caused development in their Northern local markets. They did not act more decisively than other banks to raise risk capital and bring in outside funding to invest in credit for local business. Rather, they grew large by slowly accumulating a large volume of deposits as their local markets grew. In terms of the model sketched out above, growth was likely constrained on the asset side by segmented local markets in conjunction with limits imposed by managerial diseconomies. Accordingly, growing volumes of funds were prudently diverted into low-risk assets such as government securities. While not clearly rejecting the finance-led growth model as relevant to Italian regional divergence, the evidence here certainly fails to provide much support. Disparities in banking development reflected more than caused differences in regional economic growth.

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APPENDIX

Table 1. *Five-year transition probabilities (percent) from row state to column state – North*

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0	70.4	2.1	0.6	1.8	1.8	2.3	3.1	2.2	2.8	3.2	2.3	2.2	1.8	1.6	0.9	0.1	0.2	0.2	0.1	0.3
1	41.5	39.0	12.2	0	4.9	0	0	0	2.4	0	0	0	0	0	0	0	0	0	0	0
2	15.4	7.7	23.1	26.9	15.4	3.8	0	0	7.7	0	0	0	0	0	0	0	0	0	0	0
3	26.5	2.9	5.9	11.8	32.4	11.8	2.9	2.9	0	2.9	0	0	0	0	0	0	0	0	0	0
4	18.3	0	1.4	7.0	35.2	22.5	5.6	1.4	2.8	2.8	2.8	0	0	0	0	0	0	0	0	0
5	8.2	0	0	0	9.6	32.9	24.7	12.3	5.5	4.1	2.7	0	0	0	0	0	0	0	0	0
6	8.2	0	0	1.2	1.2	4.7	25.9	31.8	18.8	3.5	3.5	1.2	0	0	0	0	0	0	0	0
7	9.2	0	0	0	0.8	0.8	10.8	35.0	32.5	7.5	1.7	0.8	0.8	0	0	0	0	0	0	0
8	10.3	0	0	0	0	1.2	0.6	4.8	34.5	29.7	10.9	4.8	1.8	0.6	0.6	0	0	0	0	0
9	4.7	0	0	0	0	0	0	3.1	6.2	32.1	32.6	16.6	3.1	1.0	0.5	0	0	0	0	0
10	10.4	0	0	0	0	0	0	0	2.2	6.6	35.7	34.1	7.7	2.2	1.1	0	0	0	0	0
11	7.4	0	0	0	0	0	0	0	0	1.8	5.5	25.8	39.9	14.7	3.1	1.2	0.6	0	0	0
12	10.1	0	0	0	0	0	0	0	0	0.6	0.6	6.3	33.3	34.6	11.9	1.9	0.6	0	0	0
13	5.4	0	0	0	0	0	0	0	0	0.9	0	3.6	3.6	30.6	43.2	7.2	5.4	0	0	0
14	10.0	0	0	0	0	0	0	0	0	0	0	1.1	5.6	5.6	26.7	34.4	13.3	1.1	1.1	1.1
15	5.1	0	0	0	0	0	0	0	0	0	0	0	1.7	1.7	6.8	40.7	33.9	8.5	1.7	0
16	6.8	0	0	0	0	0	0	0	0	0	0	0	0	2.3	2.3	9.1	36.4	36.4	6.8	0
17	6.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3.1	37.5	43.8	9.4
18	20.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5.0	40.0	35.0
19	10.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89.5

Figures in the table give the percentage probability of a bank beginning in the size class denoted by the column state five years later. Size classes defined in text. Example: a bank beginning in the small size class 2 has a 15.4% chance of dying, a 7.7% chance of shrinking to the lower size class 1, a 23.1% chance of remaining in the same category, a 26.9% chance of rising to the next higher size class 3, etc.

APPENDIX

Table 2. *Five-year transition probabilities (percent) from row state to column state – South*

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
0	78.1	3.1	2.2	1.7	2.4	3.3	2.7	2.1	1.4	1.9	0.4	0.1	0.5	0.1	0.1	0	0	0	0	0
1	53.5	27.9	6.98	0	2.3	0	4.7	2.3	2.3	0	0	0	0	0	0	0	0	0	0	0
2	35.4	6.3	29.2	12.5	10.4	0	2.1	2.1	2.1	0	0	0	0	0	0	0	0	0	0	0
3	29.3	0	7.32	51.2	9.8	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	25.3	2.0	2.02	9.1	31.3	19.2	7.1	2.0	2.0	0	0	0	0	0	0	0	0	0	0	0
5	20.9	0.9	0.91	3.6	10.9	30.0	17.3	6.4	7.3	0	1.8	0	0	0	0	0	0	0	0	0
6	23.7	0	0	0.7	4.3	11.5	30.2	20.1	7.2	1.4	0.7	0	0	0	0	0	0	0	0	0
7	19.0	0	0	0	0.6	2.5	14.1	31.9	21.5	3.7	5.5	0	1.2	0	0	0	0	0	0	0
8	17.0	0	0	0	0	0.5	0.5	13.2	37.4	16.5	11.5	2.7	0.5	0	0	0	0	0	0	0
9	11.3	0	0	0	0	0	0.6	2.5	14.5	34.0	30.8	3.1	2.5	0.6	0	0	0	0	0	0
10	11.8	0	0	0	0	0	0	1.2	1.2	13.0	39.1	29.6	4.1	0	0	0	0	0	0	0
11	15.6	0	0	0	0	0	0	0	1.83	3.7	11.9	33.9	29.4	3.7	0	0	0	0	0	0
12	13.4	0	0	0	0	0	0	0	0	3.7	1.2	9.8	43.9	23.2	4.9	0	0	0	0	0
13	10.9	0	0	0	0	0	0	0	0	0	0	0	19.6	43.5	26.1	0	0	0	0	0
14	19.2	0	0	0	0	0	0	0	0	0	0	0	0	15.4	42.3	23.1	0	0	0	0
15	0.0	0	0	0	0	0	0	0	0	12.5	0	0	0	0	0	50.0	37.5	0	0	0
16	33.3	0	0	0	0	0	0	0	0	0	0	0	0	33.3	33.3	0	0.0	0	0	0
17	50.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	0	0
18	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50.0	50.0	0
19	25.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	75.0

Figures in the table give the percentage probability of a bank beginning in the size class denoted by a row to find itself in the size class denoted by the column five years later. Size classes defined in text. Example: a bank beginning in the small size class 2 has a 35.4% chance of dying, a 6.3% chance of shrinking to the lower size class 1, a 29.2% chance of remaining in the same category, a 12.5% chance of rising to the next higher size class 3, etc.