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Título de la comunicación: The Fall of the Madrid Big Banks (1960-2000): The Role of Innovation (Technological and Financial)

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THE FALL OF THE MADRID BIG BANKS (1960-2000): THE ROLE OF INNOVATION (TECHNOLOGICAL AND FINANCIAL), by José L. García-Ruiz (Complutense University of Madrid) (jlgarciaRuiz@ccee.ucm.es)

The crisis of the Spanish financial system that started in 1977 put an end to the long-standing hegemony of the Madrid big banks (Hispano, Banesto, Central). In a few years, *Banco Santander* took control of these institutions: in 1993 acquired *Banco Español de Crédito* (Banesto) and in 1999 acquired *Banco Central Hispano*, formed in 1991 from the merger of Central and Hispano. These operations allowed Santander to increase its size in order to be a global player in a subsequent stage.

The aim of this paper is to describe and to measure the role of innovation (technological and financial) in the fall of the Madrid big banks, something which has never been explained in a satisfactory way. Banking was a very traditional industry everywhere up to c. 1960, but since then processes of liberalization, internationalization and innovation (technological and financial) were triggered and the financial institutions had to face truly new challenges, even for those like the Spanish, who operated in a market with limited competition.

The main conclusion of the paper is that neither technological innovations nor financial innovations seem to have played a key role in the demise of the Madrid big banks. The traditional ‘boring banking’ (Krugman) of the Northern banks (Santander, Bilbao, Vizcaya) won the match in the tumultuous years of the late twentieth century that brought about a new configuration of the Spanish banking industry.

Keywords: big banks, twentieth-century Spain, technological innovation, financial innovation, boring banking.

1. Introduction

The ‘financial repression’ that followed World War II delayed the modernization of the financial sector in regard to the real sector of the economy in the Western world (McKinnon, 1973; Shaw, 1973). Until the 1960s there was no modernization process, which was characterized by (i) internationalization, (ii) technological innovation, through computerization, and (iii) financial innovation, thanks to progressive liberalization. For Charles P. Kindleberger (1984), the starting point of this modernization was the internationalization involved in the spontaneous appearance of a ‘Euromarket’ for currencies in the late 1950s, when European banks, particularly in London and Switzerland, began to trade in dollars. Between 1960 and 1970, the number of foreign banks in OECD countries increased from 175 to 527, reaching 1,165 in 1980 (Bröker, 1989, pp 153-154); if subsidiaries are included the figures rise to 564 in 1970 and 1,664 in 1980 (Tschoegl, 1987, p. 68).

The computerization of banking, from its accounting to the business service aspects, was also a process that began in the 1960s (Bátiz-Lazo, Maixé-Altés and Thomes, eds, 2011). Initially, computer systems had a centralized structure with a powerful mainframe computer located in a data center, but since the late 1970s regional and local computers began to be more important, since they favored decentralization of decisions (the management methods were conditioned by new technologies, but still we

do not know to what extent). At the same time, speed and security in the transmission of data improved, while new fiber lines greatly reduced costs. The process was rapid, because in 1973 the Society for Worldwide Interbank Financial Telecommunication (SWIFT) was founded, with 239 banks in 15 countries ready to exchange international money orders in an automated way (although the first message was sent in 1977).

The consequences of computerization were beyond the capacity and speed of data transmission and induced substantial changes in (i) banking activities, (ii) the structure of the banking sector and (iii) the organization of the banks. Computerization favored financial ‘disintermediation’ since new players (insurance companies, real estate companies, department stores, etc.) could perform banking functions exploiting the new technologies. The competitive response of the banks was to generalize the ‘personal loan’ (with no collaterals). In addition, new technologies favored — especially before the fall of costs of computing and the Internet era — the rise of scale economies, so that big banks improved their chances against the smaller-sized competitors. Finally, a reorganization of the staff was unavoidable, increasing commercial tasks to the detriment of administrative tasks and facilitating the incorporation of women (Wardley, 2011).

Financial liberalization also progressed in the 1960s, but very slowly and only in Europe (Bröker, 1989). Germany promulgated a more liberal banking law in July 1961, but controls on interest rates and restrictions on access of foreign banks remained; in fact, until 1984 there was not a true liberalization of the German financial system. France advanced on the path of liberalization in 1966, but the leading French banks continued to be nationalized. Most of the financial repression fell on the price of money. In the late 1960s, all countries regulated interest rates in one way or other; even in the mid-1980s only Germany, Italy and the Netherlands maintained a total freedom. In some countries such as Austria, Belgium and Switzerland interbank agreements were legalized, and many other discretionary controls were kept. Banking reforms of the 1970s were more concerned to end the specialization and move towards universal banking (Denmark, 1974; Belgium, 1975; Germany, 1976; The Netherlands, 1978; Great Britain, 1979), without neglecting the safety and stability issues.

The process accelerated when the response to the oil crises that ended the Golden Age in the West was based on neoliberal thought, which proposed boosting the economy through a deepening of the processes of internationalization, technological innovation and liberalization. The result was greater market integration, but also a fall in margins and increasing instability. In addition, the outbreak of the debt crisis of Latin America in 1982 made international financial flows stay away from underdeveloped countries, a traditional destination for foreign investment, and be redirected to the West, contributing to its ‘financialization’ (excessive weight of the financial sector).

Technological innovation of the period was marked by the extraordinary spread of Automated Teller Machines (ATMs): around 1990, there were more than 100 ATMs per million inhabitants in many European countries, including Spain (Dermine, ed, 1990; Canals, 1994). This innovation had had its origin in the Anglo-Saxon world in the 1960s, but now many European companies were competing in this and other fields of telecommunications applied to banking, where not all the new products were successful: for instance, the bank terminal at home, launched in 1980 by the First Interstate Bank, of Los Angeles, did not achieve the intended dissemination. Until the advent of Internet in mid-1990s banking at home would not be a reality.

As before personal loans, the spread of ATMs was partially a response to the risk of disintermediation (the aim was also to cut costs in the distribution of cash). The next step was to develop strategies of 'global finance', that is, the formation of large groups to provide commercial banking, investment banking, equity investments in financial (e.g., insurance companies) and non-financial companies and all kind of services. To facilitate these strategies banking laws were enacted in Germany (1984) and Great Britain (1986, 1987), where for the first time the possibility was raised of 'securitized' loans, turning them into marketable securities. This erased the boundaries between commercial banks and investment banks and also the boundaries between banks and stock exchanges (The Institute of Bankers, 1986; Giannola, ed, 1990; Grossman, 2010).

Processes as described could not be done without major restructuring, fulfilling the motto coined in 1985 by the Cuban-American economist Carlos F. Díaz-Alejandro 'Goodbye Financial Repression, Hello Financial Crash'. According to Reinhart and Rogoff (2011, p. 159), the Spanish financial crisis that began in 1977 was the first of the five great crises experienced by the developed world after the Second World War (the other would be the Norwegian of 1987, the Finnish of 1991, the Swedish of 1991 and the Japanese of 1992). Removal of financial repression in Spain was a gradual process that took 15 years between 1974 and 1988 (although it had a rapid initial phase) (Lukauskas, 1997; Pérez, 1997), but the Spanish economic structure revealed itself to be very weak against the two challenges it faced in those years: (i) oil crises and (ii) entry into the European Economic Community (EEC).

Among the countries affected by the crisis was not the United States, because despite some deregulatory steps having been taken since 1974 the venerable Glass-Steagall Act of 1933, with its radical separation between commercial banks and investment banks, resisted its critics well (Benston, 1990). Commercial banks had advanced toward the promising 'financial high-tech, large scale production' model, able to develop automatic banking and home banking, as alternatives to the traditional bank office, offer 24 hour full services and manage a huge amount of magnetic cards, but financial liberalization had made little progress. The Glass-Steagall Act was an obstacle for investment bankers on Wall Street, who lamented not being able to take advantage of the promising new commercial banks. They pressed and, in 1999, the Financial Services Modernization Act (or Gramm-Leach-Bliley Act) was passed, an openly deregulatory law that would lead to many excesses in the twenty-first century (Levine, 2010).

2. The decline of the Madrid banks

The Spanish banking system was born out of the 'Disaster of '98', that is, the colonial crisis that put an end in 1898 to the Spanish Empire. The Disaster was followed by a successful stabilization plan designed by Raimundo Fernández-Villaverde that obtained a stable value for the peseta. This explains why, between 1892 and 1902, about 1,000 million pesetas came from the West Indies to Spain, along with the US compensation for the cession of the Philippines and Puerto Rico (Sardà, 1987 [1948], pp. 193-196). Much of this money would serve to create new financial institutions in the early years of the new century, at a pace that resembled the '*febre d'or*' of the 1880s or the years that followed the 1856 Banking Law, but this time with much more lasting effects. Up to 50 banks were created between 1899 and 1914, the outstanding cases

being *Banco Hispano Americano* (Hispano) (1900) and *Banco Español de Crédito* (Banesto) (1902) in Madrid (Tedde, 1974; García-Ruiz, 2007a; García-Ruiz, 2007b).

The expansion was not exempt from risks and 13 of the 50 banks created were liquidated within the period. But neutrality observed by Spain during World War I caused an export boom that increased again the number of banks, from 52 in 1915 to 91 in 1920 (Muñoz, 1969, p. 46). Among the new financial institutions there emerged the third major bank with headquarters in Madrid: *Banco Central* (Central) (1919) (Tortella, 2007). Soon afterwards, in 1926, *Banco Popular de los Previsores del Porvenir* (Popular) was established, as a bank promoted by an insurance company that wanted to participate in the booming financial market of the Spanish capital city at that time (Tortella, Ortiz-Villajos and García-Ruiz, 2011).

In Table 1 it can be seen that the results of the progress of private banking in the first two decades of the twentieth century were (i) a substantial increase in the ‘bancarization’ of the Spanish economy (measured by the weight of bank deposits to GDP) and (ii) the rapid fall of the disproportionate weight of the central bank (Bank of Spain) (57.3 per 100 in 1900!). The consolidation of the Spanish banking system led to the enactment in 1921 of a new Banking Law (the Cambó Act of the minister Francesc Cambó), which largely favored self-regulation through a *Consejo Superior Bancario* (Higher Council for Banking) dominated by the large institutions.

TABLE 1. Market shares in deposits of the financial institutions in Spain, 1900-2000 (percentages and total in million of current pesetas)

	Bank of Spain	Private banks	Savings banks	Rural cooperative banks	Postal savings bank	TOTAL DEPOSITS	%GDP Prados	%GDP Maluquer
1900	57.3	31.5	11.2			1,186	11.56	7.93
1910	33.3	48.2	18.5			1,368	11.71	8.21
1920	22.9	63.7	13.3			5,058	17.21	12.53
1930	9.2	71.5	19.4			9,442	26.80	19.33
1942	17.8	67.7	14.5			23,763	34.28	20.40
1950	5.3	75.4	19.2			72,644	40.47	27.31
1960	6.0	70.2	22.3		1.6	333,061	52.57	48.71
1970		65.5	32.5		2.0	1,852,001	75.19	66.47
1980		62.5	33.3	2.4	1.8	11,810,224	77.65	72.89
1990		50.5	43.4	4.0	2.0	38,476,742	75.28	72.46
2000		43.0	50.8	6.2		84,798,125	84.06	80.86

Notes: There is no available information for 1936-1941. The Bank of Spain ceased to be a deposit bank after the Banking Law of 1962. Public banks did not admit deposits. In the source there is no data for the rural cooperative banks before 1971 or for the postal savings bank before 1952. The postal savings bank was integrated within Argentaria (the holding company of the public banks) and merged in 1999 with BBV to form BBVA. **Sources:** Deposits, Titos (2003); GDP Prados, Prados (2003); GDP Maluquer, Maluquer (2009).

The first leader of the Spanish private banks was Hispano, which held that position until the late 1940s, when it was overtaken by Banesto. At the end of the dictatorship of General Franco in 1975, Banesto maintained its leadership but Central and Hispano were close behind it and the three Madrid institutions represented 40.2 percent of total deposits of the Spanish private banks. In the second level were situated the banks from the North, which included two Basque institutions (Bilbao, Vizcaya) and

Banco de Santander (Santander). Popular, which had received a considerable boost from the 1950s due to its relationship with Opus Dei (an ultra-Catholic organization that since the mid-1950s succeeded in placing its members in high positions of the Spanish Administration, including the Government since 1957), and *Banco Urquijo* (Urquijo), an institution with Basque origins that in 1944 had signed the ‘Pact of The Jarillas’ (*Las Jarillas* was the rural state where the pact was signed) with Hispano, by which Hispano and Urquijo should act in the future symbiotically: the first mainly as a commercial bank and the second exclusively as an industrial investment bank. This explains the loss of market share of the Urquijo against other institutions that had chosen to be ‘mixed’ (universal) banks (on Urquijo, see Puig and Torres, 2008) (Table 2).

TABLE 2. The major financial institutions in Spain, 1920s-1975 (% deposits in their sector) and estimation for 2012 (% total deposits)

	Private banks (groups)					Savings banks					All 2012
	1922	1934	1947	1975		1928	1940	1955	1975		
Banesto	7.0	17.2	21.2	14.2	La Caixa	17.7	25.7	28.1	14.8	Caixabank	14.9
Central	7.0	9.4	14.9	13.2	Madrid	5.3	3.6	3.2	6.8	Santander	11.8
Hispano	21.6	23.2	28.5	12.8	Barcelona	12.1	9.5	10.1	5.4	BBVA	11.5
Bilbao	12.0	12.1	9.6	9.8	Zaragoza	2.9	4.6	6.0	5.4	Bankia	9.8
Vizcaya	7.0	8.9	8.4	6.9	Valencia	5.7	4.9	4.0	4.5	Sabadell	7.5
Santander			2.5	6.0	Bilbao	10.5	6.0	3.7	2.8	Popular	6.7
Popular			2.0	4.3	Guipúzcoa	7.1	5.6	4.0	2.8	Banesto	4.6
Urquijo	7.4	5.8	2.7	1.7	Vizcaína	4.5	4.0	3.8	2.6		

Notes: There is no information in the source for Popular and Santander in 1922 and 1934, when both banks were small. In the ranking of savings banks only those that have remained continuously among the biggest are quoted, that is, not considering the market shares of León (3.6) in 1928 and Diputación de Barcelona (3.8) in 1975. In 2012, Caixabank was the new brand name of La Caixa, Santander had taken over the old Madrid big banks (Hispano, Banesto, Central) and BBVA to Bilbao and Vizcaya and Bankia had gathered the savings banks of Madrid and Valencia (among others), while Sabadell, which had its origins in an old Catalan bank (founded in 1881) had absorbed Urquijo. **Sources:** 1920s-1975, private banks in Pueyo (2003) and savings banks in Comín (2011); 2012, Banco Santander (2012), where there is only information for the seven biggest institutions.

By 1960, deposits of financial institutions were around 50 percent of GDP. This figure had increased fivefold since 1900, in a process of constant growth that had faced serious difficulties in the 1930s: crisis in the Second Republic (1931-1936) and catastrophe in the Civil War (1936-1939). The subsequent dictatorship of General Francisco Franco lasted until the dictator’s death in 1975, with two distinct stages before and after the Stabilization and Liberalization Plan of 1959. The ‘First Francoism’ (1939-1959) was a period of brutal political repression and strong economic interventionism, where five forms of financial repression were introduced into banking: (i) status quo, implemented for the whole sector in 1939-1940 but that was sometimes relaxed in favor of the large institutions; (ii) hostility towards foreign banks, even when their activities were not forbidden; (iii) ‘invitation’ to invest large amounts of resources in public funds, although an obligatory investment coefficient was not published (it existed for savings banks since 1926); (iv) requirement of low interest rates, but accepting interbank agreements in this regard; and (v) increasing role of the public banks to respond to failures in the credit markets, despite private banks were shareholders of many public banks until 1962. The Banking Law of 1946 (the Benjumea Act of the minister Joaquín Benjumea) that dominated the period worked in this cryptic manner with private banks and the Bank of Spain, which was not

nationalized but subject to greater control by the Government (e.g., the external aspect of monetary policy was put in the hands of the Ministry of Trade) (Pons, 2002).

Neither the dictatorship of General Franco sympathized with banks, nor did the banks sympathize with the dictatorship, because the totalitarian regime was incompatible with the liberal approach of the Spanish bankers (García-Ruiz and Tortella, 2003; Tortella and García-Ruiz, 2004). The economic openness that followed the ‘pre-stabilization biennium’ (1957-1958) and, above all, the Stabilization and Liberalization Plan (1959) satisfied the bankers, but liberalization focused on the real sector and the financial repression was kept essentially until the end of the dictatorship. At least, in this new stage the financial repression was officially declared: a law of 26 December 1958 authorized the first investment requirement ratios, ministerial orders of October 1964 began to set interest rates without backing previous interbank agreement and the Banking Law of 1962 (the Navarro-Rubio Act of the minister Mariano Navarro-Rubio) nationalized completely the Bank of Spain and the public banks — except *Banco Exterior* for reasons never clarified — and forced the specialization of the banks by splitting them into commercial banks and industrial investment banks. This law eliminated the status quo of 1939-1940, but the creation of new banks was put in the hands of the *Consejo Superior Bancario* and the opening of new branches in the framework of rigid annual plans. Financial repression had still the basic elements defined by the theory.

In 1965, Central and Hispano proposed a merger to form the first Spanish megabank. The Ministry of Finance supported the operation, but Franco objected to the emergence of a ‘monster bank’ and went on to say: ‘I prefer bank nationalization to these monopolies’ (Franco-Salgado-Araujo, 1976, pp 458-459). The merger did not take place and gave wings to those who supported greater state intervention on the banks (mainly, the Falangists). But far from increasing financial repression, on 9 August 1974 the minister Antonio Barrera-de-Irimo launched a reform: (i) to reduce the specialization between commercial banks and industrial investment banks; (ii) to allow the savings banks to share the official clearing houses with the banks in order to advance towards a harmonization of the functions of both institutions; (iii) to ease the establishment of new banks and the expansion of branch networks; (iv) to allow foreign capital to take a stake of up to 15 percent in new banks with a special status (from October the entry of foreign capital was also allowed to take over banks in crisis); and (v) to liberalize interest rates of operations with a term of more than two years.

On 20 November 1975 General Franco died and there began a transition to democracy, where the policy makers did not hesitate to go further in the line of the Barrera-de-Irimo Reform, allowing the savings banks to operate as banks (August 1977) and the banks to grant mortgage loans without restrictions (March 1981), as savings banks had been doing. Between the two dates, a decree of June 1978 resumed the authorization of branches of foreign banks —in 1977, only four branch offices of foreign banks operated, accounting for 0.7 percent of the deposits, while the Spanish financial system had 65 operating branches abroad. Spain was heading towards its integration into the EEC — it was admitted in 1986 — and could not remain aloof from the liberalizing wings blowing in Europe.

The coincidence of the necessary liberalization with the oil crises meant that, between 1977 and 1985, more than half of banks and about a third of the resources and bank employees were affected by serious problems. The cost of bank restructuring amounted to almost 1.5 billion pesetas of 1985, of which 75 percent came from the public sector (Cuervo, 1988, p. 212). The socialization of losses proved controversial

because, regardless of the crisis in the real sector of the economy, there had been clear signs of mismanagement by many bankers. While other financial crises occurred simultaneously in Europe, there is no doubt that the Spanish crisis was the most serious, which can be explained to some extent by the fact that Spain had been left out of the waves of mergers and acquisitions that had taken in Europe since the 1960s (Fanjul and Maravall, 1985, found scale economies in the Spanish banking system of that time). On the contrary, both the Navarro-Rubio Act and the Barrera-de-Irimo Reform (1974) had allowed the registration of a considerable number of small and medium banks that were not sound institutions.

Today, the Spanish banking system has two flagship institutions at the international level: Santander and BBVA. Their existence proves that the pessimistic forecasts of two reports on the Spanish financial system, one when the country gained entry to the EEC (Arthur Andersen, 1986) and another in the preliminary times of the European Union (Dixon, 1991), have not been fulfilled. For the first report, the Spanish banks should succumb by their excessive operational costs (an extensive and non competitive network, high staff costs), lack of training of their managers and an excess of regulation. For the second report, foreign banks would enjoy very good opportunities to expand through Spain due to the lack of competitiveness of the local banks in the European Single Market.

More optimistic was Jack Revell, the socialist economist who founded the Institute of European Finance at the Welsh Bangor University. He found in 1984 that the Spanish banks enjoyed adequate capitalization and in 1987 that there would be a future for them if the best managed institutions (Popular, Santander, Vizcaya) merged with the big but failing banks from Madrid (Banesto, Central, Hispano). Revell was right in general, but erred in the combinations that proposed (Vizcaya-Central, Santander-Banesto, Popular-Hispano, to which could join Bilbao, which was in a position of intermediate efficiency), because what happened was that the Basque banks gathered to give birth to BBVA and Santander took over all the Madrid banks, except Popular, which chose to follow an independent path (on the ‘struggle for independence’ of Popular, see Tortella, Ortiz-Villajos and García-Ruiz, 2011).

In August 1980, the magazine *Dinero* canvassed the views on mergers and takeovers of the bankers that ran the large Spanish institutions. Against mergers and takeovers were Banesto (José M. Aguirre-Gonzalo believed in specialization), Popular (Luis Valls-Taberner believed in the specificity of his bank), Vizcaya (Ángel Galíndez thought that efficiency had nothing to do with size) and Santander (Emilio Botín II adored small, operational and agile banks). By contrast, in favor of business integration were Bilbao (for José A. Sánchez-Asiaín urged to seek the optimum size), Hispano (for Luis de Usera two or three large banks were enough to attend the Spanish market) and Central (for Alfonso Escámez mergers within the EEC seemed inevitable).

Sánchez-Asiaín acted in agreement with his positions and, on 30 September 1987, took the first step by proposing to Pedro de Toledo, newly appointed chairman of Vizcaya, an understanding. Not finding the necessary receptivity, two months later, Sánchez-Asiaín turned his eyes towards the Madrid banks, those marked by Revell as easy prey. Sánchez-Asiaín explored Hispano, in administration since 1985, but ended up making a takeover bid to Banesto, which was friendly at first but then became hostile (González, Anes and Mendoza, 2007, Chapter VI). The operation failed due to the action of two major shareholders (Juan Abelló and Mario Conde) who had taken control of the institution. Shortly thereafter, on 17 May 1988, a document of intent for a ‘pure

and simple' merger of Banesto and Central was signed, after rejecting the merger of Banesto with Hispano and Popular (Banco Español Central de Crédito, 1988).

But the *Banco Español Central de Crédito* was never a reality and in the following years Banesto was managed in such a questionable way that, on 28 December 1993, the Bank of Spain had no option but to put the bank into administration (García-Ruiz, 2012). The intervention was followed by a trial that ended with heavy prison sentences for Mario Conde (over 20 years) and his collaborators. Banesto was reorganized by the *Fondo de Garantía de Depósitos* (Deposit Guarantee Fund) — with a cost of 193,000 million pesetas to the public purse — and then sold at auction. Banesto was acquired by Santander in April 1994. This bank has been headed since 1986 by Emilio Botín III, who broke with the conservative tradition of his family in some way — as we have seen, her father, Emilio Botín II, believed that 'small is beautiful' — and ended up absorbing all the once great Madrid banks: in 1994, Banesto (but maintaining the brand), and, in 1999, Central and Hispano, who had previously merged in 1991 (Santander became Santander Central Hispano to 2007) (Martín-Aceña, 2007). In the ranking of 2012, Santander appears second in deposits, behind Caixabank (La Caixa), but the final integration of Banesto, agreed in December of that year, would put Botín's bank in the lead.

3. The modernization of Spanish banks: technological innovation

The introduction of technological innovations in banking is done to improve and expand the service, but also to save staff costs and stay out of labor disputes. However, according to available censuses, the workforce of the Spanish banks expanded rapidly in the 1940s and 1950s, but did so at an even greater pace in the 1960s, when double; growth continued in the 1970s, reaching a total workforce of over 180,000 employees in 1980 (Table 3). According to the *Instituto Nacional de Estadística* (National Institute for Statistics), the average earnings per hour worked in the financial institutions sector had risen from 30.04 pesetas in 1963 (start time of the series) to 86.08 pesetas in 1970 and 518.80 pesetas in 1980, that is, an increase of 17.3 times in nominal terms. Thus, by 1980, the Spanish banks had increased its workforce 2.6 times since 1963, with a salary cost per hour worked that had increased 2.7 times in real terms (discounting the high inflation of the period with the index of the cost of living of the Institute).

TABLE 3. Number of bank offices and bank employees in Spain, 1919-1990

	Bank offices	Bank offices of the five big banks	Bank employees (in thousands)
1920	351 (1919)	160 (1921)	
1930	2,013 (1936)	856 (1931)	18.3 (1933)
1940	2,013 (1936)	959 (1941)	33.6 (mid-1940s)
1950	2,368	1,427	47.2
1960	2,805	1,673	69.0 (1963)
1970	4,402	2,473	131.8
1980	13,348	6,891	180.3
1990	16,989	7,631	158.2

Note: The number of bank offices in 1919 is without counting foreign banks. In the source there is no information on employees for 1920. **Source:** Tortella and García-Ruiz (2013), p. 137.

From the 1960s, the computerization of banking was a worldwide phenomenon that quickly spread and reached a country such as Spain. How then to explain the explosion of labor costs that was happening simultaneously? The only way to understand the phenomenon is by paying attention to the development of the branch network: from 2,805 in 1960 to 13,348 in 1980. Clearly, Spain had implemented a retail banking model characterized by proximity, which given the low density of most of its territory involved high overhead costs. In the 1980s, the number of offices continued to grow (in 1990 it was nearly 17,000), but at least the number of employees was cut by more than 20,000. Very small bank offices proliferated in Spain. In the twenty-first century, savings banks expanded with a similar strategy and, in 2007, shortly before the outbreak of the Great Recession, there were 977.5 inhabitants per branch in Spain and 2,720 in the European Union (Vives, 2012, p. 396). At that time, the low penetration of the broadband and the poor financial education was leading people to prefer to operate in ATMs rather than at home on Internet.

But how was the introduction of technological innovation in the Madrid big banks, which is our subject of study? Unlike savings banks, where since 1971 there was a *Comité de Organización, Automatización y Servicios* (Committee for Organization, Automation and Services), within the *Confederación Española de Cajas de Ahorro* (Spanish Confederation of Savings Banks), who coordinated the process throughout the sector (Bátiz-Lazo and Maixé-Altés, 2011), the *Comité Técnico Interbancario* (Interbank Technical Committee), of the *Consejo Superior Bancario*, established in 1963, sponsored the V European Meeting on Automation (1966) and then forgot about the issue and concentrated its interest on publishing 62 papers on bank norms and procedures until 1993—which were continued by the series ‘*cuadernos*’ (notebooks) of the employers’ associations of the financial system.

Therefore, we have not centralized information about the computerization of the banks and must go to the archives of each institution to try to rebuild the process in each case. Unfortunately, of the four cases referred to (Banesto, Central, Hispano, Popular), we have only detailed information on the implementation of technological innovation for Popular, which between 1955 and 1975 passed on by the three classic stages in regards to process information (beyond the introduction of the telephone or typewriters): (i) machining, (ii) automation and (iii) teleprocessing. The source is the study *Unos años en la vida de un banco*, prepared by Popular in 1976 to commemorate its fiftieth anniversary, which never saw the light of day, but which is kept in the archives.

Popular’s mechanization began in March 1955, when *Cartera Central* (Central Portfolio) was created to centralize in Madrid the operations with bills of exchange in provinces, which was achieved with Burroughs and Addo machines. The success of this experiment led to the creation of a *Servicio de Organización* (Unit of Organization), which would design methods for the rationalization and would be responsible for their implementation in the branches. The first instruments were a multi-leaf form (to facilitate control) and a notebook with instructions on organization (to guide the managers). In 1957, the accounts between branches were suppressed in order to implement a scheme where all the accounts should be kept only with the Head Office and conducted by an Accounting Center. In the following years, the main branches mechanized the services of checking accounts, commercial risks and cash.

The centralization of operations corresponded well with the reorganization of 1959 which changed the geographical structure of the bank with three zones (North, South, Catalonia) to one where only five functions were distinguished: resources,

investments, personnel, organization and computerization. The reorganization was advised by Antonio Valero, founder of IESE Business School, and Miguel Siguán, an expert in industrial psychology. The Annual Report of the bank for 1959 said the step had been imposed by “the technique and the experience” in large organizations.

The machines used in machining were Burroughs, Olivetti (Electrosoma and Divisoma), Addo (x 5,000, x 6000, x 7000), Ascota, Olympia and NCR (41). In Madrid, the centralization of the current accounts began with the urban agencies and then spread to the Head Office, where the absence of public facilitated the task. In June 1960, the centralization of the current accounts reached the cities of Barcelona and Valencia. By then, the centralization of the accounts with banks was well in progress; this centralization had started in July 1959 addressing the case of the leading bank (Banesto). In early 1962 all the operations with bills of exchange related to Madrid were incorporated into *Cartera Central*.

On 23 to 26 April 1962, in Aranjuez (Madrid) the First Workshop of the Department of Organization was held, aiming to evaluate the work done. The findings in terms of improvement in productivity were very positive, but it was clear that Popular needed to take another step and adopt automation, which would bring (i) further cost reductions and (ii) improvements in the available information for the decision makers. A specialist, José Miguel Rincón Vega (University of Deusto), presented at the workshop the main concepts of the new data processing systems.

Two years later, in May 1964, the consultants appointed by the bank issued the report *Estudio económico previo para la instalación de un conjunto electrónico* (Preliminary Economic Study for Installing Electronic Equipment). In April 1965, the new *Dirección General de Sistemas sobre Automatización* (Division of Automation Systems) called on staff competition to provide analysts, programmers and operators of electronic computers. In the following month, premises in María de Molina Street were acquired to locate the computers. On 26 October 1965 the first contract was signed with IBM to acquire a 360/30 (32 K) computer and medium speed magnetic tapes. Before the end of the year the *Servicio de Preparación de Datos para el Proceso* (Unit of Preparation for Data Processing) and the *Centro Electrónico de Proceso Automático de Datos* (Electronic Center for Automatic Data Processing) were also under way. The *Servicio* would collect data from the head office and the branches for their treatment by the *Centro*.

In mid-1966, everything was ready for the IBM 360/30 computer, which arrived in November. In the following month, three pilot offices began operations with checking and savings accounts to test the computer. The experiment was successful and moved Popular to create in 1967 ‘*Centros de Zona*’ (Zone Centers) in Barcelona and Valencia, which also would be equipped with IBM 360/30 computers. The new equipment would arrive on 20 November 1967, while IBM was requested to upgrade the memory of the computers and to provide faster tape drives and printers. Automation or computerization was complemented by advances in mechanization, such as the system of the ‘xerocopy’ (Polish term translated into Spanish as *xerocopia*, meaning the photocopy of the bill of exchange that was sent to the drawee as billing notice), which in August 1967 began to be used in Madrid, Barcelona and Valencia.

Data on current accounts were progressively incorporated into the new computers throughout 1968. In accounting and portfolio management Audit machines were used to create punched cards that could be read by computers. In November, a new contract was signed with IBM to acquire two 360/40 computers with large capacity

discs and double speed tapes to replace the 360/30 system of the Madrid Center. That same month the payroll of the bank and two subsidiaries (Vasconia, Europeo) was prepared electronically. In the last days of 1968 and early 1969, Popular ceased to keep accounts 'in parallel', that is, by traditional and electronic means at the same time, and relied exclusively on the latter.

In January 1969, the *División de Informática y Contabilidad* (Division of Computing and Accounting) was established as a continuation of the Division of Automation Systems, with four units: Accounting, Planning and Control, Automatic Data Processing and Preparation of Data for the Processing. Its first challenge was computerize risk operations, starting with the 'commercial risk', that is, the discounting. The Centers in Madrid, Barcelona and Valencia gathered the portfolio of bills of the eleven regions into which the bank had divided the national territory. With the computerization of the portfolio, the bank tried to minimize the movement of the bills. In the last months of the year, the computerization of the collection of receipts for private schools began.

In 1970, a Unit for Securities was created to progress in this segment (starting with the Iberduero securities). The bank also had to restructure the accounting to adopt the new rules of the Bank of Spain, which was used to implement a true 'management by computer' that would control costs and returns of each operation. In March 1971, the Division of Computing and Accounting was split into two: the Division of Computing (data preparation, data processing, research and innovation) and the Division of Control (accounting, planning, control). An important step was taken in November 1972 with the creation of the Unit of Shares, whose first mission was to create a master file of the bank shareholders.

In January 1973, the two 360/40 computers of Madrid were withdrawn and replaced by two 370/145 computers (150 K), with 12 tapes 3420, 18 discs 2314 and 3 printers 1403. The renewal of the equipment was completed with a Univac 9400 computer (98 K) and its peripherals (2 tapes, 3 drivers, 1 printer and 1 cards reader) (the first Univac was upgraded to 131 K of memory). A major milestone of 1973 was the launching in Toledo, on 19 September, of a 'permanent cashier' that allowed using a 'multicard' (special card) to get cash 24 hours a day, 7 days a week. It was a Burroughs machine and it has been considered the first ATM in Spanish banking because the (unsuccessful) Bancomat installed by Banesto in 1969 in Madrid was more a 'cash dispenser' (through a punch card) than a true ATM (the 'multicard' had a magnetic stripe at the back that allowed to withdraw cash but also to access a varying range of other services) (on Bancomat or Bankomat, see Bátiz-Lazo, Karlsson and Thodenius, 2013).

The Division of Computing became the Department of Computing in the early days of 1974. It was a year when progress was made in accounts (customers were offered the possibility of receiving statements every six days; the payment of interest on time deposits was automated), portfolio (markers NCR and then Burroughs were introduced; the Audit machines were replaced by other Uniscopes, connected to a Univac computer), accounting (the Audit machines were replaced by a Nixdorf 620 with 17 keyboards) and securities (a Central for Securities was created to respond to new systems of settlement in securities transactions).

In 1975, Nixdorf multi-keyboards expanded their field of operations and were implanted in Barcelona and Valencia (in the version of six keyboards). This led to the withdrawal of Audit machines of perforated band in these places, as well as the IBM

computers that were served by those machines. The portfolio of bills of exchange was fully centralized in Madrid. The Executive Committee on 12 July 1975 approved the purchase of an IBM 370/158 (1,000 K) and its peripherals (6 tapes, 6 discs, 2 printers, 1 card reader of 800 cards per minute and 1 card driller of 100 cards per minute). With the new IBM the aim was to move towards ‘teleprocessing’, whose first step was taken on 11 December 1975 in Barcelona: customer data were taken through a Nixdorf multi-keyboard, then they were transmitted by telephone line to Madrid, then they were processed and then were resent over the same line to a printer in Barcelona, obtaining the corresponding listings of movements and balances.

The source that has served us to describe the evolution of the technological innovation in the case of *Banco Popular* described an interesting state of affairs for all the major Spanish banks in the mid-1970s (Table 4). At that time, Banesto headed the ranking of deposits, but was also leader in productivity (21.5 million in deposits per employee, compared to 19.9 of Santander) and Information Technology (IT) investment (7,350 pesetas per million of deposits, compared to 6,760 of Santander). But the one who was destined to become a megabank with the takeover of the Madrid banks, Santander, was investing more in computerization than Central and Hispano, These stood at the levels of Bilbao and Vizcaya, that is, in an intermediate position, but clearly above Popular, which with its low productivity and IT investment levels did not seem to be well prepared for the competitive battle of the coming times.

TABLE 4. Indicators of productivity (Deposits/Employee) and technological innovation (IT Investment/Deposits) in the seven Spanish big banks, 1974-1975

	Deposits/Employee December 1974 (million pesetas)	IT investment/Deposits December 1975 (thousands pesetas of IT investment per million of deposits)
Banesto	21.5	7.35
Central	21.3	3.65
Hispano	17.9	4.82
Bilbao	17.4	3.59
Vizcaya	19.2	4.13
Santander	19.9	6.76
Popular	14.8	2.92

Note: IT = Information Technology. **Source:** Banco Popular (1976).

The source also lets us know the complete domain of IBM at the initial stages of the implementation of teleprocessing (Table 5). IBM was the sole brand for Central Hispano and Santander and the preferred one for Banesto, Bilbao and Popular; only Vizcaya seemed to rely more on a competitor, Honeywell. The most advanced model was 370/168, which was present in Banesto (3 computers), Hispano (1), Bilbao (1) and Santander (1). Investments in IBM totaled 7,780 million pesetas, well above their immediate followers: Univac, 1,290 million; Honeywell, 700 million; and NCR, 369 million.

TABLE 5. IT investment in the Spanish big banks, 1976

Bank (IT investment in million pesetas)	Brand (investment in million pesetas)	Models (number of units)
Banesto (3,050)	IBM (1,700)	370/168 (3), 360/65 (1), 360/40 (3)

	Univac (1,200)	1.108 (2), 1.110 (1), 1.100/42 (1)
	NCR (150)	Century 200 (5)
Central (1,400)	IBM (1,400)	370/158 (1), 360/65 (2), 360/40 (2), 370/135 (1) and mass storage
Hispano (1,700)	IBM (1,700)	370/168 (1), 360/65 (1), 360/40 (3), 360/30 (1) and mass storage
Bilbao (1,100)	IBM (950)	370/168 (1), 370/145 (1), 260/40 (2)
	NCR (150)	Century 300 (2)
Vizcaya (900)	IBM (200)	370/125 (2), 370/115 (5)
	Honeywell (700)	6660 (1), 435 (7)
Santander (1,400)	IBM (1,400)	370/168 (1), 360/65 (1), 360/40 (2)
Popular (589)	IBM (430)	370/145 (2), 370/158 (1)
	Univac (90)	9400 (2)
	NCR (69)	Century 200 (2)

Note: IT = Information Technology. **Source:** Banco Popular (1976).

In the years of the banking crisis (1977-1985), investment in IT continued apace, as evidenced by a report of the Fundesco Foundation, published in 1988 and entitled *Las nuevas tecnologías de la información y el futuro del sistema financiero español*. Table 6 shows how the installed base of computers in the Spanish banking on 1 January 1987 was composed by 9,500 units, with an estimated value above 128,000 million pesetas. IBM remained as the leading brand, with almost half of the estimated value, followed by NCR that was ahead in ATMs (1,950 units versus 1,528 for IBM). The third brand was Olivetti, an Italian company that was trying to evolve from typewriters to computers, even at the cost of heavy indebtedness, and had manufacturing plants in Spain. It should be noted that we are in a phase of full diffusion of computerization, so these figures for the entire banking sector cannot be compared with those in Table 5.

TABLE 6. Endowment of IT technologies in Spanish banking, 1 January 1987

	Base of computers		Financial terminals		Point of sale terminals		ATMs	
	Units	Value (million pesetas)	Units	Value (million pesetas)	Units	Value (million pesetas)	Units	Value (million pesetas)
IBM	2,119	62,947	27,358	28,237	9,425	8,483	1,528	6,112
Olivetti	1,544	6,628	8,950	10,740	380	1,482	310	403
NCR	1,428	13,610	9,450	15,120	1,675	4,858	1,950	8,385
Nixdorf	1,101	3,724	3,695	11,809	2,402	1,737	710	2,511
Others	3,370	41,406	12,873	12,762	904	926	627	4,029
TOTAL	9,562	128,315	62,326	78,668	14,786	17,485	5,125	21,440

Source: Fundesco (1988).

The teleprocessing started in late 1975 would allow Popular to return to a decentralized organization model in 1987. The model was tested in 1988-1992, and the results were so satisfactory that it was decided to extend it indefinitely. In the 1993 Annual Report, the organization model was characterized as 'flexible and decentralized

but with unity of command, supported by transparent systems of internal and external information’.

Among the large Madrid banks, the best known case is that of Banesto, which in January 1971 managed to finish the computerization of the Telefónica’s coupons, a very singular operation that was a triumph for the Technical Service. In June, Banesto attended an international meeting in Rome that sought to intensify banking cooperation in order to make ‘the automatic data transmission services equivalent to the current phone system’, as stated in the Board of Directors of 23 June 1971 (García-Ruiz, 2013, p. 263). The truth is that during that year technicians from Banesto and Telefónica collaborated to give birth to the first public network in the world based on packet switching (Maixé-Altés, 2013). It was a decisive step towards the ‘real time’ system of teleprocessing. Soon afterwards, in 1973, while Popular launched the first Spanish ATM, the three largest Madrid banks and Santander joined forces to introduce the *Tarjeta-Cheque 4B*, a new payment system that could be used in 2,300 branches and constituted a genuinely Spanish contribution to the world of credit and debit cards.

In view of the above, little doubt can be entertained about the high level of commitment to technology innovation in the Madrid banks shortly before the oil crisis put under pressure some financial institutions (the largest) very committed to the Spanish industry. In the cases of Banesto and Central, the implication was direct and, in the case of Hispano, it was indirect through the ‘Pact of The Jarillas’, the agreement signed in 1944 with Urquijo that had been renovated in 1964 and in June 1973, months before the outbreak of the Yom Kippur War or October War that triggered the oil crisis.

As we explained before, the ‘Pact of The Jarillas’ supposed for Hispano the specialization in commercial banking, while Urquijo did so in industrial investment banking, but both financial institutions will work thereafter as a single group. When the crisis hit Urquijo hard, Hispano announced the suspension of the dividend in December 1984, this being the first time it had happened in the history of Spanish banking. From January 1985 to October 1991, when it merged with Central, it can be said that Hispano was subject to a protracted governmental intervention, where the priority was consolidation and therefore spending on IT was put under the ‘responsible austerity’ policy that ruled for the whole bank (the expression was due to Claudio Boada, the chairman imposed by the authorities).

In Table 4, Central and Bilbao appear with relatively little investment in IT before the crisis. This is because both financial institutions were ‘mixed’ (universal), but more industrial investment banks than commercial banks, and certainly the commercial banks need greater investment in IT or Information and Communication Technology (ICT) to run efficiently the branch networks. Below Central and Bilbao we find Popular, which was quite a pure commercial bank but with a remarkable conservative bias. No data are available, but it is conceivable that, during the crisis, Central, which continued to be a bank with a strong industrial orientation, would keep low the computerization expenses.

Finally, we have the case of Banesto, the bank that had to undergo a severe crisis because of big mistakes made in 1977-1978: in order to maintain its position at the top of the ranking, the CEO of Banesto, Pablo Garnica-Mansi, acquired insolvent banks (Coca, Bandri-Cadesbank) and hired aggressive but incompetent managers (e.g., Javier de la Rosa was named CEO of the subsidiary *Banco Garriga-Nogués*) (García Ruiz, 2012). The governor of the Bank of Spain at the time, José María López de Letona, had to face the restructuration of Banesto, between March 1986 and November 1987, as

CEO imposed by the authorities. Letona understood that Banesto had lost its leadership in ICT of ten years ago and appointed Joaquim Clotet, deputy head of the Division of Computerization, Organization and Accounting of La Caixa, to proceed with the necessary updating (on the leadership of La Caixa in computerization, see Maixé-Altés, 2012).

Clotet presented in October 1986 a report on the computerization of Banesto, where two historical phases can be distinguished: a first stage of ‘great innovation and development’ and a second stage when the gathering of ‘autonomous solutions to different problems without a general system of information became prevalent’. Consequently, the current system was ‘inelastic’ in all areas and suffered from technological backwardness (most of the computers were more than twelve years old). According to Clotet, there was a need for (i) a reshaping of the chart of accounts to allow the accounting by centers, products and customers and a monitoring of the budget of the offices, (ii) a definition of the results obtained with the 40,000 clients with risk above 4 million pesetas and (iii) a design of a new application for data processing oriented towards a management by computer, ‘flexible, with great adaptability to the market of the new technologies and open to all communication systems’. To finance the Clotet Report a total amount of 16,729 million pesetas in investments for 1987-1991 were budgeted.

Mario Conde, who displaced Letona from the command of Banesto, drew up its plan for computerization and got from the Board the approval of investments above 50,000 million pesetas for 1989-1993, with the aim of passing from the 850,000 daily transactions in teleprocessing of 1988 to five million by the end of the period covered. We have no information to confirm that the plan was fulfilled, but it is true that the computerization of the Conde Banesto was highly praised. Possibly, Conde was able to bring the computerization of Banesto to the high level prior to the 1977-1978 management errors, but the fate of the institution he ran could not be other than the intervention by the Bank of Spain, because the figure of provisions and write-downs required amounted to over 600,000 million pesetas (figure of Price Waterhouse).

4. The modernization of the Spanish banking: financial innovation

Financial innovation is almost impossible in non-liberalized markets, since competition is its fundamental impulse. The main competition in markets is through price, but the Spanish banks were deprived of it during Francoism until the Barrera-de-Irimo Reform in August 1974 (Pons, 2002). In the First Francoism, the banks were allowed to come to interbank ‘*arreglos*’ (arrangements) (in 1941, 1949, 1952 and 1960) that would serve as reference for the financial authorities. Then, between 1964 and 1969, the government fixed maximum rates for passive operations and minimum rates for active operations; from 1969, the rates of these operations would also be maximum, but the banks have to publish their preferential rates in the *Boletín Oficial del Estado* (the official gazette) (García Ruiz, 2002).

The financial history has shown that the ‘arrangements’ were systematically breached and that after 1964 the ‘*extratipos*’ (passive rates above the legal maximum to attract deposits) were common. Regarding preferential rates in active operations, their evolution can be followed for 1969-1985 in *Cifras y relaciones significativas de los balances de la banca privada*, a publication from the CSB. Judging by the diversity of declared rates, it can be said that very soon the national banks tended to practice autonomous policies, not coordinated with the rest, although to a lesser extent than the

regional, local or industrial investment banks. It should be added that, since the late 1960s, a sort of ‘financial engineering’ emerged, based on the higher degree of freedom that the industrial investment banks — most of them subsidiaries of the big commercial banks — enjoyed or the launching of imaginative combinations, such as the ‘accounts with insurance’ of Vizcaya and Santander in 1968, institutions that were beginning to challenge the big Madrid banks, increasingly asleep on their laurels.

After 1960 there were no more interbank arrangements, but, at the request of Ignacio Villalonga, chairman of Central, the big bankers used to meet monthly to coordinate their actions apart from the rest of the sector. Villalonga was a supporter of the Austrian School of Economics, but in practice he could not forget who presided over an institution with a bulging portfolio of industrial securities, which management required to avoid ruinous competitions. In 1970, upon his arrival to the chairmanship of Banesto, José M. Aguirre-Gonzalo successfully proposed weekly meetings with lunch included, where the top leader (Banesto and then Central) would act as hosts. These meetings were known as ‘Club of the Big Seven’ (the hosts were Hispano, Bilbao, Vizcaya, Santander and Popular) and had an open character, so monetary authorities were invited to the lunch. Big institutions and authorities shared a common goal: to halt the ‘*extratipos*’ and the ‘special conditions’ (e.g. early withdrawal of interests or principal on time deposits) with which, mainly, medium and small banks attracted deposits. The Club reached consensus to issue a circular urging a stop to the unfair competition from 7 April 1975 and the denouncing of competitors who violate the rules (the text was aimed to circulate only among the bankers, but was published in *Doblón*, July 1975). The success of this and other initiatives was as limited as the arrangements in 1941-1960 and the Club closed its doors in late 1970s.

The transition to democracy that followed the Franco dictatorship deepened the Barrera-de-Irimo Reform. Enrique Fuentes-Quintana (renowned economist, vice-president and head of the government for economic affairs between July 1977 and February 1978) was the promoter of the reforms, which were supported by only two bankers: José Á. Sánchez-Asiáin (Bilbao) and Rafael Termes (Popular) (Fuentes-Quintana, 1991, pp. LXIII y LXIV). The outbreak of the crisis in *Banco de Navarra*, which forced the Bank of Spain to create the Deposit Guarantee Fund in November 1977, helps to explain the reluctance of the other bankers. But the truth is that Spain, once the dictatorial phase had ended, was heading towards its integration into the EEC (the accession took place in 1986) and could not be immune to from the liberalizing winds blowing in Europe.

Shortly before the crisis, about half of the Spaniards had no bank account and the public tended to think that all banks were the same for the absence of real competition (Asociación Española de Banca, 1979). The crisis of 1977-1985 was expensive, but induced a substantial acceleration in the necessary renewal of the financial system. At the end of the crisis, the Spanish banking system started to be in line with others in the major countries of Western Europe (Dermine, ed, 1990; Canals, 1994). Spain had a reasonable number of national banks in relation with its population (around the average of the EEC); the penetration of the foreign banks was small, but comparable to the Danish, the Italian or the Portuguese. Moreover, the degree of ‘bancarization’, measured by the Goldsmith ratio (Financial Institutions Assets / GDP) denoted maturity in the financial system (the contribution to the GDP was 6-7 percent, well above the contribution in many other surrounding countries). Positives were also the adequate capitalization and the high intermediation margins, even if they were the

result of a market power achieved in an institutional framework of restrictive competition (Martínez-Méndez, 1991).

In 1988, Luis A. Rojo, a professor at the Complutense University of Madrid, was appointed deputy governor of the Bank of Spain and wrote a famous article where he said that financial innovation was not a social good without restrictions, because it could adversely affect the average quality of the portfolio of loans and credits and, through off-balance sheet operations, create very important information problems. For Rojo, financial stability was a value to be protected even at the cost of some inefficiency (Rojo, 1988). Shortly afterwards, there was an euphoria that the Bank of Spain did not hesitate to stem through quantitative constraints to the growth of credit — it had reached an annual 20 percent — that were established between mid-1989 and 1990. In the summer of 1992, Rojo succeeded Mariano Rubio as governor and remained convinced that the crisis was always lurking in the years of greatest prosperity, following the puritan model of William McChesney Martin, chairman of the Federal Reserve from 1951 to 1970. No wonder the great innovation of the governor Rojo was the ‘dynamic provisions’, introduced in 1999 to force the banks to accumulate reserves in the boom and low default years to be used when the subsequent and inevitable crisis would be manifest.

Mario Conde knew how to play the media to present himself as an innovative banker, but the truth is that he was not. Emilio Botín III, the strong man of Santander, understood much better what to do and took two key steps: (i) in 1988, he signed a partnership with Royal Bank of Scotland to better withstand competition from foreign banks after the entry of Spain into the EEC; (ii) in 1989, he launched the ‘*supercuenta*’, a call bank account with high yield, in order to increase deposits very quickly, controlling other costs to maintain profit margins. The Banesto’s response was the ‘*cuenta única*’ (1990), whose high yield should be compensated with very strong credit expansion and capital gains from the sale of industrial securities. The strategy was unsuccessful, as evidenced by needs in provisions and write-downs of more than 600,000 million pesetas that forced the intervention in the institution by governor Rojo in late 1993.

Meanwhile, Emilio Botín III was getting enough size to take control of Banesto in 1994 and of Central Hispano in 1999. The next step was to launch the international expansion acquiring Serfin in México (1999) and Banespa in Brasil (2001), while the experience of Central Hispano in Chile and Argentina served to constitute Santander Chile and Santander Río (the base was the venerable *Banco Español del Río de la Plata*) and progressions were made in United States from an experience in Puerto Rico. The acquisition of the British Abbey National Bank in 2004 turned Santander into a true global player, but one very focused on Latin American and the Eurozone (Guillén and Tschoegl, 2008).

The case of BBVA is similar to that of Santander: first, the megabank was established and, then, came the expansion into Latin America. BBVA is the result of the 1988 merger between *Banco de Bilbao* and *Banco de Vizcaya* to form BBV, which would become BBVA after merging in 1999 with Argentaria. Since 1995, BBV got to take control of Latin American financial institutions in Peru, Mexico, Colombia, Argentina, Venezuela, Chile, Brazil and Puerto Rico, but until it became BBVA it was not possible to launch the big operation of 2000-2001 that the control of the Mexican Bancomer represented. In the following years, unlike Santander, BBVA would not show interest for the Eurozone (apart from Spain and Portugal), but it would for the

United States (relying on Bancomer) and Asia (via a partnership with Citic Group) (Arroyo, Larrinaga and Matés, 2012).

Did financial innovation exist in the period 1988-2000? With historical perspective, there was not too much of it. Following the launch of the *'supercuenta'*, Santander preferred the conservative style of the traditional commercial banking, both in Spain and abroad, as did BBV, commanded by traditional Basque bankers such as Sánchez-Asiaín, Emilio Ybarra or Alfredo Sáenz. The latter was vice-president of BBV, chairman of Banesto after the intervention and, then, CEO of Santander in 2002-2013, and he was always a firm supporter of 'traditional banking, from an approach of universal banking', as he explained in the Parliament in 1994 (García-Ruiz, 2013, p. 341). In the merger of 1991 that gave birth to Central Hispano, the leadership was assumed by Hispano, so we can say that the intervention in this bank since 1985 had now spread to Central with that operation. Meanwhile, Mario Conde, chairman of Banesto, presented himself as an alternative to the traditional bankers, but the truth is that his only notable innovation was the grouping of industrial shares in a holding company called *Corporación Industrial y Financiera*, whose sole purpose actually was to achieve the maximum value in a questionable divestment policy.

In the whole banking industry, regarding the attraction of deposits, the most notable thing was the increase in the use of wholesale markets and, regarding lending, the implementation of variable interest rates. Both innovations were introduced in Spain by foreign banks that, before and after they were allowed to open branches with entire freedom in 1993, they preferred control operating expenses and get resources in wholesale markets. The most can be said is that the Spanish financial institutions learned the lesson fruitfully and were able to keep the market share of their teachers (the foreign banks) always in a low level. But this was largely due to a very costly competitive advantage: the extensive network of branches and ATMs that was very appreciated by the Spanish client.

5. Conclusions

One of the most striking subjects of the twentieth-century Spanish banking history is the fall of the Madrid banks (Hispano, Banesto, Central) against the Northern banks (Bilbao, Vizcaya, Santander). The process was developed in the last four decades of the century, which were marked everywhere by the implementation of technological and financial innovations as never before seen in banking. In this paper we have tried to make a first approach to the relationship between the generation and / or adoption of these innovations and the decline of the Madrid large banks that clearly dominated the market by 1960.

Technological innovations corresponded mainly to introduction of computers (in this paper the case of Popular is presented as paradigmatic). Until now progress had been made in the understanding of the process of computerization of the savings banks that, according to the available studies, was exemplary and coordinated thanks to the efficient work done since 1971 by the *Comité de Organización, Automatización y Servicios*. For the authors of these studies it is clear that effective computerization helps to explain that the market share of the savings banks increased from 22.3 percent in 1960 to 50.8 percent in 2000, while private banks fell from 70.2 percent to 43.0 percent in the same period (see Maixé-Altés, 2013, and literature cited there).

However, data presented in this paper show that IT investment had little to do with the decline of Banesto, the Spanish banking leader for decades. Shortly before heading down a path of increasingly serious problems, Banesto had a base of computers which involved an investment of 7,350 pesetas per million deposits, well above the Northern banks (Bilbao, 3,590; Vizcaya, 4,130; Santander, 6,760). Banesto fell because of grave mismanagement in 1977-1978 that led to a sort of intervention in 1986, when was appointed as CEO José M. López-de-Letona, a former minister and governor of the Bank of Spain, who was related to the governor of the time, was appointed as CEO. The computerization had been neglected in the last ten years and López-de-Letona hired an expert from La Caixa, Joaquim Clotet, to proceed with the upgrading, planning to invest about 16,700 million pesetas in 1987-1991. When the cautious López-de-Letona was removed by Mario Conde, the budget for computerization jumped to 50,000 million pesetas in 1989-1993. The huge investment in computerization did nothing to prevent a disastrous management that ended with the intervention of the institution by the Bank of Spain. The cost-benefit analysis should never be forgotten regardless of the dazzling look of the new technologies.

In the cases of Hispano and Central, around 1975, investments in IT were similar to that of Bilbao and Vizcaya. The problem was that these institutions were badly hit by the industrial crisis that followed the oil crisis. For Hispano, this happened indirectly, via its involvement with Urquijo (a large industrial investment bank) since 1944, and for Central, in a direct way. Hispano was intervened in 1985 and his intervention was extended to Central in 1991, when both financial institutions merged. The intervention put the stress in the cleaning up of the banks and their ability to innovate was limited. The acquisition of Central Hispano by Santander in 1999 marked the end of a protracted intervention.

Technological innovation could be implemented within a framework of financial repression, but financial innovation became very difficult before the culmination of a process of gradual financial liberalization that lasted from 1974 to 1988. In any case, Professor Luis A. Rojo, from his positions as deputy governor and then governor of the Bank of Spain, imposed in 1988-2000 a damper on the overly risky financial innovation. Northern banks that took the lead in these years were not characterized by technological innovation or financial innovation. The only remarkable financial innovation by Emilio Botín III was the launch of the '*supercuenta*' in 1989, which was a key element to gain size very quickly and thus be able to compete with the Basque banks that had merged in the previous year to form BBV. All the Northern bankers were very conservative and their international expansion simply followed the Spanish companies that had invested in Latin America in the years before (Berges, Ontiveros and Valero, 2012).

In short, the main conclusion of this paper is that innovation did not play a major role in the leadership succession where the Madrid banks did succumb in the face of the Northern banks. The Madrid big banks collapsed because of their serious management errors: excessive concentration of not very sound industrial securities in the cases of Central and Hispano and ill-considered acquisitions to gain size quickly in the case of Banesto —a mistake compounded by the criminal management of the only banker who in this period presented himself as innovator, Mario Conde. The 'boring banking' (Krugman, 2009) won the match in the Spanish banking of the last decades of the twentieth century.

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