Banking Industry and Monetary Policy: An Overview

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The financial sector and, in particular, the banking industry plays an important role in the allocation of capital resources and risk sharing of future flows in an economy. In the long run, a well-functioning banking sector will facilitate increased growth and welfare, and it will smooth business cycles. These findings have become widely accepted by policymakers and economists, and they stand in contrast to the skepticism about the contribution of financial intermediaries that predominated twenty years ago.

Banks perform a variety of functions. Historically, they have provided money changing and payment processing services. The latter function has gained relevance at the international level owing to the greater integration of financial services. Banks primary function has also been related to the transformation of assets in terms of their maturity, quality, and denomination. Recently, researchers and policymakers have acknowledged that a critical role of banks is to manage and control risks. These functions give banks a central position within the process of saving and investment allocation. However, these functions make banks vulnerable to different sources of shocks, and they have a negative effect on the economy because of banks' central role. Consequently, there is a case for strong regulations in a banking environment. Issues like barriers to entry, market concentration, the borrower-lender relationship, deposit insurance, and the taxation of financial intermediation are at the center of the economic policy discussion to improve the performance of the financial market.

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From a macroeconomic perspective, the nature of banking activities and banks' position as intermediaries makes these institutions relevant for the transmission of monetary policy. Two important channels of monetary policy transmission depend on the functioning of the banking sector: the traditional interest rate channel and the credit channel. The former channel operates when the central bank's adjustments to the nominal interest rate have an impact on the real interest rate (assuming a degree of price stickiness) and thus on the pattern of investment and consumption. This channel will only work, however, if banks transmit the changes in the monetary policy rate to their customers. The credit channel, in turn, assumes some capital market imperfections, such as asymmetric information, that induce a contraction of the quantity of credit when the central bank imposes a restrictive monetary policy.

The papers presented in this book discuss some of these issues. The first group of papers studies the importance of the banking industry in the transmission of monetary policy and the interest rate pass-through from a theoretical and empirical perspective. The second group analyzes microeconomic topics related to regulation and market structure, such as taxation of the financial sector, barriers to entry in the banking sector, and deposit insurance.

1. Monetary Policy and the Banking Industry

In a simple textbook economy, agents hold two types of assets: bonds and money. Agents' portfolios are balanced between these two assets at all times. When the monetary authority controls the quantity of money, therefore, it is also controlling the nominal interest rate in the market. In this so-called money view, banks are agents that issue demand deposit on the liability side of their balance sheet and hold bonds on the asset side of their balance sheet.[1]

In such a framework, monetary policy affects output only if movements in the nominal interest rate are translated into the real interest rate. If there is some level of price stickiness, changes in the nominal interest rate will induce movements in the real interest rate and thus affect real activity in the short run.

1. See Kashyap and Stein (1994) for a complete summary of the two different views of banks' role in monetary policy transmission.

In practice banks introduce a third type of asset: bank loans (Bernanke and Blinder, 1988). Bank balance sheet thus consist of three type of assets: money, bonds, and intermediated loans. Two conditions of the latter, in addition to price stickiness, now create a second channel for monetary policy transmission, namely, the bank-lending channel. These conditions are that bank loans and bonds are imperfect substitutes for both banks and borrowers and that the Central Bank must be able to use the monetary policy to affect the total supply of funds that are available for banks.

This section proceeds as follows. We first review the empirical and theoretical foundations of credit channel, together with the contribution of this volume's papers to the literature. We then discuss the role of banks for the money view and the contributions of the volume in this area.

1.1 Credit Channel: Theoretical Considerations

The empirical side of the bank lending channel hypothesis concentrates on how bank loans and other plausible substitutes react to monetary policy shocks. Evidence of the bank lending channel is found when commercial papers and bank loans are close substitutes (Kashyap, Stein, and Wilcox, 1993).

Bernanke and Gertler (1995) provide a well-organized view of the empirical relationship of monetary policy and aggregates variables that could not be explained using the traditional view of monetary policy. They divide the credit channel into the bank lending channel and the balance sheet effect. They argue, however, that bank lending is becoming less important as a channel for monetary policy transmission owing to changes in regulation, like the ending of Regulation Q, and increasing innovation in financial markets. Their study thus emphasizes the balance sheet effect, which operates through two complementary mechanisms. First, a monetary policy tightening increases interest expenses, reduces net cash flow, and weakens the financial position of firms. Second, an increase in the interest rate reduces the value of the borrower's collateral and, consequently, the borrowing ability of affected firms. In this mechanism, asymmetric information in financial market plays an important role.

Gertler and Gilchrist (1994) provide microeconomic evidence in favor of the above balance sheet effect. They study how small and large manufacturing firms react to a monetary policy shock. A monetary policy tightening causes sales, inventories, and short term debt to

decline for small firms, but they remain unchanged for large firms. The authors conclude that financial factors are behind the difference between large and small firm behavior.

Gertler and Gilchrist's findings are closely related with the idea that financial factors will propagate the effect of a monetary shock. Bernanke, Gertler, and Gilchrist (1996) argue that a negative monetary shock will make external finance more expensive relative to funds raised internally; the difference between these two costs is the external finance premium. Since the net worth of the firm is inversely related to the external finance premium for a given amount of finance required, the shrink in the net worth will reduce the borrower's spending and production. This is the idea of the financial accelerator and the flight to quality, which hinges on the asymmetric information and agency cost features of the financial market. In practice this will mean that large publicly listed firms would be less exposed to the financial accelerator, and they will be the recipients of funds.

Bernanke, Gertler, and Gilchrist (1999) formalize this idea in a dynamic macroeconomic model characterized by asymmetric information and agency cost in the banking sector. Calibrating the model, they show that the financial accelerator mechanism amplifies the response of the aggregate variables to a monetary shock.

Following this theoretical avenue, Simon Gilchrist (in this volume) presents a model that shows the importance of the financial accelerator mechanism in a context of open economies. In his model the macroeconomic effects of a shock depend on the source of the shock and the leverage of the economy. The net worth of firms in a high-leverage economy is more sensitive to demand and supply shocks than is the net worth of firms in low-leverage economies. Shocks raise the external finance premium, which magnifies their effect.

This model would explain why a supply shock in a developed economy has such a large effect in developing countries. Gilchrist associates high-leverage economies with developing countries, which is the case in the recent Asian crisis. The transmission mechanism of the shock is the following. A negative supply shock in the developed country produces a negative demand shock in the developing country; this unexpectedly reduces the real return to capital and the net worth of assets. The effect on the net worth depends on the leverage of the economy. The inverse relationship between the net worth and the external finance premium predicts a reduction in investment and output. The impact of the shock on the net worth is magnified in the less developed economy, owing to the leverage associated to that economy.

With regard to the source of the shock, Gilchrist finds that a symmetric shock to disembodied technology in both countries introduces larger waves in output and investment than a similar shock to embodied technology. The presence of the financial accelerator magnifies the effect in both economies, but it is greater for the economy with higher leverage.

1.2 Credit Channel: Empirical Findings

Two papers in this volume deal with the empirical side of the relationship between monetary policy and macroeconomic aggregates. Angeloni, Kashyap, Mojon, and Terlizzese show similarities and differences in the monetary policy transmission in two large economies: the United States and the euro area. The aim of the paper is to contribute to a better understanding of the components of aggregate demand through which the monetary policy operates. The authors make an important effort to construct comparable data since the euro area only covers a five-year period.

Using VAR models under different specifications, they find that both economies show the same response in output and prices. Specifically, output in both economies has a hump-shaped response to a monetary shock, peaking sometime during the second year. Prices tend to react more slowly, but with a long-term deviation from the baseline situation and with no long-run effect on inflation. The most striking feature found, however, is the response of the different components of aggregate demand, which constitutes what the authors call the output composition puzzle. Briefly, the puzzle implies that in the U.S. economy the consumption-to-investment ratio tends to have a larger reaction than its European counterpart.

Angeloni, Kashyap, Mojon, and Terlizzese try to explain this puzzle based on a dynamic stochastic general equilibrium model with certain specific assumptions that capture what is observed in the data in terms of stickiness and inertia in the inflation rate. They argued that five parameters could explain the difference: the size of investment adjustment costs, the persistence in the interest rate induced by the central bank, the strength of habit persistence, the intertemporal elasticity of substitution, and the share of capital in the production function. However, the data show a much larger difference in consumption and investment reaction than could be accounted for in the model.

Finally, the authors find that investment response is similar in both economies and that the difference comes from consumption decisions.

They show evidence that disposable income is less sensible to monetary policy in the euro area than in the United States. They conjecture that the social benefits in Europe, which are much higher than in the United States, help to smooth the effect of monetary policy on disposable income and consumption.

The paper by Alfaro, Franken, García, and Jara (in this volume) focuses on the bank channel of the monetary policy transmission in Chile. They follow two methodologies. First, they use panel data to check how bank characteristics (size, liquidity, and capitalization) matter for the response of loan supply to movements in the monetary policy rate. Second, they estimate a VAR system to analyze a flight-to-quality hypothesis, by constructing a low/high quality ratio as the ratio of consumer loans to large firm loans.

From the first empirical exercise, they find that monetary policy tightening is consistent with a reduction in the growth rate of total loans, which favor the bank lending channel hypothesis. Bank characteristics may enhance or reduce this effect. For instance, in the case of consumer loans, capitalization and liquidity tend to reduce the effect of monetary policy on the supply of loans. In contrast, the derivative of commercial loans to monetary policy rate is only affected by liquidity. The authors read these results as evidence in favor of the bank lending channel, in the sense that monetary policy tightening operates against consumers and small and medium-sized enterprises (SMEs).

The second exercise produces evidence that monetary policy precedes the low/high quality ratio (in the Granger sense), while the latter statistically precedes macroeconomic activity. From the VAR itself, the authors find that a negative monetary policy shock immediately reduces the low/high quality ratio, which tends to favor the flight-to-quality effect explained above. Gross domestic product (GDP) declines two quarters after the negative shock, reaching its maximum decline one year after the shock. This effect is transitory, as expected. The estimated impulse response shows that if investment and durable consumption replace GDP, both variables decline almost at the same time (one and a half years after the monetary policy tightening).

1.3 Interest Rate Pass-through

The traditional channel of monetary policy does not take into account the banking sector as a vehicle for transmitting the interest

rate. This sector is a key element, however, since a noncompetitive banking sector may not fully pass through or may delay the transmission of the changes in the monetary policy rate to borrowers. This will affect the effectiveness of monetary policy.

The importance of the banking sector for passing through the policy rate is studied indirectly by Hannan and Berger (1991), who model interest rate rigidity as a consequence of collusive behavior in the banking sector. Hannan and Berger provide a stylized model of monopolistic competition that illustrates how firms with market power change prices asymmetrically for ups versus downs.

On the empirical side, the comprehensive work of Cottarelli and Kourelis (1994) shows that the stickiness of the lending interest rate varies widely across the thirty-one countries included in the study. They fit a simple empirical model in which the lending rate is a function of contemporaneous and lag values of the money market rate, lags of the lending rate, and changes in the monetary policy rate. Their main finding is that the degree of interest rate flexibility increases with the elimination of capital flow restrictions, lower barriers to competition, private property in the banking industry, and the existence of short-term instruments. More competition implies a more flexible interest rate.

Several recent country case studies use this methodology; most find that stickiness varies inversely with the degree of competition and financial liberalization.[2] Other papers study specific countries, including Manzano and Galmés (1996) for Spain, Winker (1999) for Germany, and Moazzami (1999) for the United States and Canada. All of these find a certain degree of stickiness in the short run and a higher long-run pass-through coefficient. The type of borrowers, regulation, and changes in the level of competition seem to be the main determinants of interest rate flexibility.

In this volume, Espinosa-Vega and Rebucci compare the speed of the interest rate pass-through in Chile with that of Australia, Canada, New Zealand, the United States, and a group of European economies. They work with an auto-regressive distributed lag specification reparameterized as an error correction model with lending and deposit rates for different terms and denominations.[3] They find that Chile is not very different than these countries. In fact, the long-run

2. See Borio and Fritz (1995) and Mojon (2000) for cross-country comparisons.

3. One of the peculiarities of the Chilean economy is the existence of an indexed unit of account that is widely used in the financial sector for loans and deposit over ninety days.

coefficient is similar to that found in European economies and New Zealand, and somewhat smaller than in Australia, Canada, and the United States. The short-run adjustment was faster than in Australia, New Zealand, and Europe.

For Chile, Espinosa-Vega and Rebucci find no evidence of differences in the speed of instruments denominated in UF (the indexed unit of account) and pesos (nominal). Their work also shows no evidence of asymmetries in the speed of the interest rate pass-through for ups and downs of the monetary policy rate. This finding goes against the Hannan and Berger (1991) hypothesis.

The second paper on this topic, by Berstein and Fuentes, presents a country case study for Chile. The authors' goal is twofold. First, they explore how the banking interest rate responds to changes in the policy rate using aggregate data for the banking system, based on a dynamic model for the lending rate as a function of the money market rate. Second, they analyze whether the speed of adjustment depends on specific characteristics of individual banks. Here they estimate a dynamic panel data model assuming that the coefficient depends on certain bank characteristic, such as size, risk portfolio, and type of borrowers.

Using aggregate data, they find that the short-term pass-through coefficient is around 0.8 for both indexed and nominal interest rate. The long-term coefficient is larger, and the hypothesis of it being equal to 1 cannot be rejected. Large banks or large borrowers may influence these results, since the interest rate used is a weighted average of interest rates in individual banks, in which the weights are based on the size of the loan. An additional limitation is that this approach does not allow controlling for specific bank characteristics.

Next Berstein and Fuentes set up a very simple monopolistic competition model for the banking industry, deriving a mark-up equation for the equilibrium interest rate. The mark-up depends on the borrowers' demand elasticity and the repayment probability of the loan. They add to this structure a quadratic cost function faced by banks when they have to adjust the interest rate. The intuition for this is that if the debtors are too risky, the bank may not fully pass through a money market interest rate increase (in the short run) because it will stifle the debtors. In the long run, however, the interest rate charged will be according to the risk characteristic of the debtor (mark-up equation). They use this model to derive an empirical equation that allows for interaction between the determinants of demand elasticity and probability of repayment with the monetary policy interest rate.

Based on the panel data estimation, they conclude that the short-term pass-through coefficient is around 0.7. The short-term coefficient for the nominal rate depends negatively on the credit risk (measured as unpaid loans). The long-term coefficient is close to 1, and it is positively related to this proxy for credit risk. Both results are consistent with the theoretical model. The coefficients for the indexed interest rate are very similar in size. They are not consistent with the theoretical model, however, since a higher credit risk corresponds with a lower long-run pass-through coefficient.

2. Lender-Borrower Relationship

The interaction between monetary policy and the macroeconomic determinants of the functioning of the economy is review in the studies cited above, which emphasize the transmission of the monetary policy decision to macroeconomic aggregates and interest rates. The microeconomic determinants of an effective monetary policy transmission, in turn, depend crucially on certain aspect of the real/financial interaction between banks and the agents surrounding them. It is now widely recognized at a theoretical level that banks do play an important role in the economy through the provision of liquidity services, maturity transformation, and the pooling of risks (Freixas and Rochet, 1997). However, the very nature of their activities gives rise to frictions that can have real effects on the level of investment and growth. The main source of frictions in the banking industry arises from informational asymmetries.

García, Repetto, Rodríguez, and Valdés (in this volume) explore one source of distortion that could arise from informational asymmetry, investigating whether firm-bank relationships (measured by the duration of lending ties) and the actual bank concentration faced by the firm affect the access to bank financing. They explore the possible consequences of a given market structure faced by potential borrowers for the case of Chile over the 1990–1998 period. They postulate that the availability of credit should be greater if interactions between banks and their clients alleviate distortions generated by lack of information. A priori, multiple banking relationships are not prima facie beneficial for bank clients. Bolton and Scharfstein (1996) and Petersen and Rajan (1995) show that debt renegotiations become more complicated, and greater competition reduces the ability of banks to finance projects during bad times.

A number of studies capture the strength of the relationship between banks and their clients. Hoshi, Kashyap, and Scharfstein (1991) associate large industrial Japanese groups with weaker asymmetric information, finding that groups with weaker links to banks have difficult access to external finance. Others rely on the market assessments of rating agencies (Whited, 1992) or the concentration of ownership within the firm and the age of the firm as an indicator of transparency of information (Schaller, 1993). The latter finds that young firms and firms with more dispersed ownership face large funding costs from external sources. Asymmetric information can severely constrain access to credit among small and medium-sized firms, and it can also harm the efficiency of monetary policy transmission.

García, Repetto, Rodríguez, and Valdés find that low concentration, proxied by the number of banks with which the firm has formal contracts, has a positive impact on the volume of bank lending. In the case of Chile, the longer the duration of the relationship between a bank and a firm, the greater the access to credit from the banking system. Finally, a valuable contribution of their work is the interaction of two unique databases. The first dataset covers information on credit transactions between banks and their clients, including the fraction of outstanding and past-due loans, and the credit risk rating assigned by a bank to a particular credit. The information per customer is matched with data from a survey of manufacturing firms conducted annually by the National Bureau of Statistics.

3. The Impact of Foreign Banking Entry

This volume includes contributions that analyze the effects of foreign bank entry on the efficiency of the banking system and on macroeconomic activity. This section discusses issues related to how foreign bank entry may affect the volatility of aggregate activity. We then summarize contributions related to the importance of foreign bank for efficiency in the banking system, understood as bank margins.

3.1 Foreign Bank Entry and Macroeconomic Stability

Morgan and Strahan (in this volume) study whether foreign bank entry alters the economic volatility of countries or states where regulations that block entry are removed (economic volatility measured

in terms of annual variations in output and investment). They consider the potential negative consequences of opening a banking system to foreign bank entry in terms of the resulting stability of economic activity and bank participation. The effect of foreign bank entry on local markets is relevant not only internationally, as in the case of many developing economies that have opened their banking markets, but also within national boundaries, as in the case of interstate banking in the United States.

The theoretical foundation for their work is based in Morgan, Rime, and Strahan (2003), who extend the macroeconomic model of Holmström and Tirole (1997). Integration of banking markets can have positive and negative consequences for economic volatility. The net effect is ambiguous. Assuming complete mobility of capital across states or countries, a capital squeeze in state (country) A will attract capital from state B if there are good lending opportunities, thereby dampening the impact on investment in state A. Banking allocation in state A will also attract investment by uninformed investors, enhancing the positive effect of integration. However, a collateral shock that has a negative impact on capital invested in country A causes bank capital to move to country B, because of the integration. The reduction in bank capital in country A lowers the level of investment in that country, together with the supply of investment by uninformed capital (large institutional investors).

This latter flight-to-quality effect serves to illustrate the impact of foreign bank presence, or financial service integration in general, on the design of monetary policy. Although collateral shocks are most likely to occur as a result of real shocks (earthquakes, plagues, and so forth), unexpected and large changes in monetary policy can also lead to a significantly decrease in the price of assets. Foreign bank presence can thus reinforce the monetary policy transmission mechanism. In isolated markets, unexpected increases in the monetary policy rate decrease the value of collateral, but this reduction is not enhanced by capital flights to other regions. Banking integration and the sort of dynamics suggested by Morgan and Strahan also highlight the importance of adequate tax and financial policy design, since ill-designed policies in the context of integrated markets can also cause a reduction of bank capital and investment in a country.

At the U.S. level, the authors find that the stabilizing influence of integration across states is large and statistically significant. There is also a positive effect of bank capital inflows on employment growth. The authors control for banking market concentration, since the evidence

indicates that more concentrated markets tend to exhibit less capital volatility. They also control for some possible endogenous components of foreign bank entry and investment volatility.

At the international level, the authors use the share of bank assets held by banks with at least 50 percent foreign bank ownership as a measure of foreign bank integration. They control for banking market concentration as in the U.S. case, as well as for the share of foreign trade over GDP as a measure of integration. They employ instrumental variables to control for the potential endogeneity of the estimation owing to similarities in linguistic, institutional, and regional characteristics of the countries involved. Contrary to the U.S. case, the impact of bank integration on business volatility is quite low at the international level, and the relationship even has a positive sign in some model specifications. A tentative explanation that is explored by Morgan and Strahan suggests that collateral shocks tend to predominate at the international level. To confirm their hypothesis they regress the real growth of GDP and investment on the return on the stock market (as a proxy for entrepreneurial collateral) and the growth rate of bank capital. They find that foreign bank presence amplifies capital shocks in the sample of countries selected.

Morgan and Strahan's results point to a strong link between financial integration and the volatility of economic activity in developing economies. This stands as a word of caution for financial regulators in terms of following a blind path of integration; rather, they may need to perform a careful study of macroeconomic conditions before integrating into foreign banking markets. Certainly, Morgan and Strahan's results are not definitive, but given the potential implications, more research is needed in this area, particularly in light of the fact that government authorities continue to strongly promote commercial treaties.

3.2 Foreign Bank Entry and Bank Margins

The financial system is in charge of allocating resources from agents who supply funds to those who demand funds for investment. In this context bank margins or the bank spread is a key variable for measuring how efficient a banking system is in this resource allocation process. The need for financial intermediaries, which provide this service while charging a spread, is widely discussed in the literature. The early contributions emphasize transaction costs (Benston and Smith, 1976) or asymmetric information and the costs of information and

monitoring (Leyland and Pyle, 1977; Campbell and Kracaw, 1980; Diamond, 1984, 1991; Haubrich, 1989). The more recent literature stresses risk management, transformation of financial risk, and provision of liquidity (Allen and Santomero, 1997, 2001; Scholtens and van Wensveen, 2000).

All these works justify the presence of financial intermediaries and the need for incurring such costs. Under competition, the bank margin should be high enough to pay for financial services plus the risk involved in banking activity. In a related area, a relatively new body of research addresses the impact of foreign bank entry on the domestic banking system. Clarke and others (2002) study the effect of foreign entry on different aspect of the domestic banking system. They conclude that the presence of these banks enhance efficiency. Claessens, Demirgüç-Kunt, and Huizinga (2001) and Jayaratne and Strahan (1996), for the United States, provide evidence that the existence of foreign banks reduces the profitability and margins of domestic banks. They argue that openness to foreign banks increases the contestability of the market.

This evidence is consistent with Levine (1996), who reports that the entry of foreign banks improves the quality and availability of financial services, increases competition, and stimulates the introduction of modern technologies and management tools. Based on extensive research in this area, Levine (1999) finds that the share of foreign bank assets is negatively correlated with the probability of crises in the incumbent markets.

In this volume, Ross Levine analyzes the impact of denying foreign bank entry on bank interest margins. The contribution of this paper is to measure foreign banks' access to the market rather than the degree of foreign bank participation. Levine also controls for the denial of domestic bank entry, to make sure that the barriers to entry are specifically against foreign banks. Otherwise the impediments to foreign bank entry would just be a proxy for barriers to entry in general. Levine uses a rich dataset of 1165 banks across forty-seven countries, controling for bank-specific and country-specific factors. He concludes that when a country tends to establish barriers to foreign bank entry, bank interest margins increase.

Levine uses instrumental variables to test the robustness of the results, since the entry of a foreign bank may also be determined by the margins. This exercise produces another interesting finding. As instruments, Levine chose variables that capture institutional characteristics. The regulation of foreign bank entry proves to be highly

correlated with the institutional characteristics. This exercise confirms the previous finding that foreign bank entry increases the degree of contestability of the domestic market and reduces bank interest margins.

4. Market Concentration, Cross-ownership, and Pricing

Ahumada and Cetorelli (in this volume) review the potential benefits for banks stemming from the relationship in ownership with other financial intermediaries. Specifically, they focus on the Chilean market and study banks that have common ownership with pension fund administrators, the largest providers of external funding in the economy. Pension funds are required by law to diversify their portfolios. Nonetheless, the regulatory requirement for diversification forces pension fund administrators to invest a significant proportion of the funds in the domestic banking system. In addition, regulation restricts, but does not prohibit, the allocation of a proportion of the pension funds in a bank that belongs to the same financial group as the pension fund administrator. This link could generate a competitive advantage for banks related to pension funds in the market for deposits and loans.

Their work is partly based on Berger and Hannan (1989) and Hannan and Berger (1991). They thus control for market characteristics that could influence the pricing behavior of deposit and loans; in particular, they control for the market structure of the industry, proxied by the Herfindahl-Hirschman index of market concentration. They study whether banks with links to pension funds respond to changes in monetary policy differently than banks without such links, both in normal times and during the liquidity shock that the Chilean economy suffered in the aftermath the Asian crisis. Their work is further motivated by the concept of internal capital markets elaborated by Stein (1991) and subsequently extended to developing countries by Tarziján (1999). The latter argues that internal markets provide a tentative explanation for the rise of conglomerates in emerging markets, which are typically characterized by a weak institutional framework, an excessive number of regulations, and shallow capital markets.

The results obtained by Ahumada and Cetorelli indicate that, indeed, during the sample period banks benefited from the pension fund relationship. Related banks exhibited a larger deposit base and enjoyed

higher spreads than unrelated banks. These results hold significantly during the liquidity shock, when affiliated banks grew in size and charged higher spreads while the other banks' spread narrowed. Nonetheless, the overall benefit associated with the existence of financial groups in Chile has fallen over time, since pension fund administrators have gradually been allowed to allocate their resources to foreign markets.

5. Taxation on Financial Intermediation: A Review

The issue of taxation of financial services might seem at odds with the other subjects in the volume. However, it is a critical complement of the different topics discussed at the conference, since distortions introduced by the tax structure have become the center of the financial policy debate on economic growth in the context of increasing global competition and integration of financial services. Honohan provides a detailed perspective on the approaches to policy recommendations on this subject, and he uses the theoretical foundations of this literature to analyze and diagnose the current situation in Chile.

Honohan begins by describing the general framework of financial services taxation reform as emerging from two powerful and conflicting perspectives. In one area are those who advocate a widespread simplification of the tax structure, in the form of a flat tax—such as a value-added tax (VAT) and zero taxation of capital income—or a universal transaction tax. Conventional wisdom in the taxation literature is that capital income taxation generates high efficiency costs, with very few offsetting benefits. In the opposing camp are the proponents of a myriad of corrective taxes designed to offset the market distortions that the financial sector is alleged to have derived mainly from informational deficiencies and market structure conditions. These corrective taxes include deposit insurance, provisions, and minimum capital requirements. Honohan points out that in practical applications, the two camps push their conflicting ideas, resulting in most countries in a tax system that challenges even the most complex rationalizations. The author concludes that the main practical implication of the debate on financial services taxation is that policy design should be guided by a *defensive approach*, in which taxes are implemented on the basis of their ability to resist arbitrage and their sensitivity to inflation surprises.

Honohan shows that Chile is no exception to the general observation that tax policy on financial intermediation is far from being an articulated body. The stamp tax on credit operations is the most characteristic lineament of the tax structure of the Chilean financial system. Introduced in the early 1980s, this tax encompasses all credit transactions related to credit operations, is levied over the capital borrowed, and is short-lived since it applies only to the first twelve months of the loan. Honohan, compares the level of different taxes applied on Chile with an equivalent value-added tax on each transaction, using, for example, a measure of spread to approximate the value-added of the banking industry in the case of the stamp tax. In all cases, the author finds that the equivalent VAT rates are, at best, twice as high as the current VAT rate of 19% for nonfinancial transactions.

The impact of the stamp tax on credit transactions is twofold. First, it complies fully with the defensive approach outlined by the author, in that it is immune to inflation and it limits severe arbitrage. Unlike a capital income tax, the stamp tax works fine against tax evasion, which might be a particularly useful feature in countries where the financial system is large but where, nonetheless, tax elasticities are low. Although critics point out that there are obvious ways to arbitrage this feature of stamp taxes, the evidence consistently shows that transaction taxes are surprisingly resilient as tools for government revenue collection, thereby raising doubts about their distorting effects on the financial sector.

In Chile, the design of the stamp tax generates a bias toward long-term credit, which causes a welfare loss for borrowers who might otherwise have had access to credit at a shorter term. In the same line of argument, other authors suggest that the stamp tax discourages borrower mobility; this could have an effect on monetary policy transmission, since borrowers do not renegotiate loans or change bank lenders to avoid paying the stamp tax. These criticisms have recently been taken into account by the Chilean economic authority, which has modified financial regulation to diminish the so-called bias in an effort to stimulate credit activity.

6. Deposit Insurance: A Review and Its Impact on Systemic Risk

Honohan (2003) postulates that explicit deposit insurance systems are corrective quasi-taxes implemented to neutralize informational

deficiencies enshrined in the banking system. Demirgüç-Kunt and Kane (in this volume) broaden this perspective, pointing out that deposit insurance systems are part of the regulatory efforts of financial authorities to construct a safety net around the financial system. The safety net is a set of institutional arrangements designed to lower the probability of a systemic crisis and, given an episode of widespread instability, to minimize its costs. It comprises not only a deposit insurance system, but also a lender of last resort (a function typically performed by the central bank) and a set of supervisory practices and financial regulations.

The series of banking crises that occurred over the last twenty years left the certainty that they are costly and disruptive. Using alternative measures to approximate the direct and measurable costs of financial crisis, Demirgüç-Kunt and Kane illustrate that these costs exceeded 30% of GDP in Thailand and Korea and approached 50% of GDP in Indonesia. In the case of the 1982 Chilean banking crisis, the most accurate estimates of the losses incurred report figures around 35% of GDP (Sanhueza, 1999). Perhaps as a result of a natural defensive response from the financial policymakers, deposit insurance systems have grown rapidly in the last thirty years, from fewer than ten countries in 1965 to more than seventy countries in 1999, and still more are being implemented.

Implementing a deposit insurance system has been a primary objective of the safety net program in many countries. However, financial policy regulators face a difficult task in designing a deposit insurance system, since there seems to be a critical balance between protecting the integrity of the financial system and avoiding excessive risk taking by depository institutions owing to ill-structured schemes. The contribution of Demirgüç-Kunt and Kane to this volume provides a synthesis of recent work developed by these and other researchers, which clarifies how the design of a deposit insurance system affects banking crises, market discipline, financial development, and crisis management. The paper also evaluates the Chilean deposit insurance system and compares it with results from their cross-country study. The main finding of their work is that the instauration of an explicit deposit insurance system represents a danger in a weak institutional environment. The evidence shows that in that context, a deposit insurance system induces a downgrade in the monitoring of bank risk profiles.

On the issue of financial stability, Demirgüç-Kunt and Kane hold that the first impact of deposit insurance is to enhance the banking system, since it diminishes depositors' willingness to run on a bank

in the event of a crisis. Moral hazard increases, however, when the deposit insurance system aims to protect small depositors. On average, deposit insurance systems increase the probability of a banking crisis when the government administers the system and when the system provides extensive coverage (see Demirgüç-Kunt and Detragiache, 2002).

On the issue of market discipline, the authors find that the absence of adequate monitoring that results from inadequate deposit insurance systems switches the responsibility for controlling bad bank behavior to supervisory institutions. These results highlight the importance of having a strong set of institutions (see Demirgüç-Kunt and Huizinga, 2004). Again, the design of the deposit insurance system is crucial for economic growth, since the perverse incentive created in weak institutional environments distorts real investment decisions, which delays rather than promotes financial development (see Cull, Senbet, and Sorge, 2004). Finally, the authors review the impact of blanket guarantees for a sample of forty crises around the world. Based on Honohan and Klingebiel (2003) they conclude that unlimited guarantees and liquidity support, together with indulgent behavior from regulatory authorities, significantly increase the costs of financial crises.

The Working Group on Deposit Insurance of the Financial Stability Forum (2001) reaches similar conclusions to those outlined by Demirgüç-Kunt and Kane. In particular, their Guidance for Developing Effective Deposit Insurance Systems recommends that an explicit, limited-coverage system is preferable to an implicit protection scheme. They further acknowledge that a deposit insurance system is built to deal with a limited number of bank failures, and it is not expected to cover the demand from depositors in the event of a systemic banking crisis. Nonetheless, the main public policy objective of a deposit insurance system is to contribute to the stability of the financial system and to protect small depositors. The emphasis should be placed on good corporate governance practices and sound risk management policies.

In the case of Chile, Demirgüç-Kunt and Kane observe that two characteristic of the Chilean financial system favor the application of an explicit deposit insurance: Chile features a high level of institutional development relative to other developing countries, and the banking market is highly concentrated. These two features should limit any adverse impact that an explicit deposit insurance system might have on the economy. In all, the current features of the deposit

insurance system in Chile are favorably evaluated according to the empirical evidence presented in their previous work. First, the coverage of term deposits is low and imposes a form of coinsurance. Coverage per depositors is currently near $3,000 dollars. Second, the insurer of term deposits (the government) has no explicit reserve fund. Third, membership is compulsory, as is also recommended by the Financial Stability Forum. A downside of the current design, which the authors mention, is the full coverage of demand deposit by the Central Bank, despite the ceiling imposed on maximum coverage of 2.5 times basic capital; in a situation of financial instability, this could cause depositors to shift their term deposits into demand deposits.

As mentioned by Demirgüç-Kunt and Kane, the Chilean banking industry has become a very concentrated market. In 1995, the top five banks (out of a total of 36) held 49 percent of the market. Today, the largest five banks (out of 27) hold 71 percent of the market. The Herfindahl-Hirschman index of market concentration rose from 715 in 1995 to 1,290 in the third quarter of 2003. Cifuentes (in this volume) studies the impact of this consolidation process on the Chilean banking industry's safety net, in terms of both the functioning of the deposit insurance mechanism in place and the level of systemic risk.

Cifuentes (in this volume) begins with an overview of the main objectives and characteristics of deposit insurance systems. He makes some of the same remarks as Demirgüç-Kunt and Kane (in this volume) in their survey, emphasizing the role of deposit insurance in the prevention of bank runs and the protection of small depositors. Diamond and Dybvig (1983) provide the theoretical framework that justifies the construction of a credible system of protection for small depositors as a sustainable equilibrium in a market characterized by unstable conditions. Cifuentes defines credibility as a condition in which the deposit insurance system manages sufficient funds to cover a number of bankruptcies but not a systemic crisis.

However, if deposit insurance systems are not intended to help restore the intermediary role that banks perform in a systemic crisis, then what is the role of a deposit insurance system in a highly concentrated market with few actively operating banks? In this context, the failure of a large bank will probably generate a demand for reserve funds that the deposit insurance system is not able to meet, and the authorities will have to conceive solutions beyond the mere repayment of small depositors with the accumulated funds. Cifuentes suggests that in a very concentrated market with few banks, large depositors will be covered by a too-big-to-fail policy on behalf of the

regulatory authorities. Levine (1999) and others point out that financial crises tend to occur less frequently in more concentrated markets, in which case the active use of the accumulated fund is less clear.

Cifuentes compares the degree of effective protection provided by the deposit insurance system in Chile and the United States, as the extreme cases of a country with a few banks and a country with a large number of banks. Cifuentes concludes that the effective protection—that is, the number of cases in which insured deposits are actually less than or equal to the deposit insurance fund—is much lower in the case of Chile than in the United States. Deposit insurance in a concentrated market like Chile is justified on the grounds of the representation hypothesis of Dewatripont and Tirole (1994). Customers could anticipate the application of the too-big-to-fail doctrine, causing a flight-to-size rather than the usual flight-to-quality phenomenon. Finally, the author considers that the participation of the public sector in the funding of the deposit insurance depends on the primary objective of the system. If the intention is to protect small depositors, funding should be privately afforded. Public funding could be justified if the deposit insurance system also serves to facilitate the liquidation of a financial institution in coordination with crisis resolution policies.

Cifuentes also addresses the issue of systemic risk and banking concentration. Systemic risk, defined as the failure of a large part of the banking system to perform its maturity transformation function, can arise from several sources (see Dow, 2000): contagion from insolvent banks that generates bank runs on solvent ones; trough interbank lending; a deterioration of asset prices owing to problems in a group of banks; and common shocks that weaken a large fraction of the banking system. Cifuentes, studies the implications of potential systemic risk stemming from interbank linkages, based on the theoretical foundations of Rochet and Tirole (1996) and Freixas, Parigi, and Rochet (2000).

Using the modeling framework of Eisenberg and Noe (2001), Cifuentes examines whether the increase in the concentration of the Chilean banking market has affected the system's fragility. He finds that systemic risk increases with the level of concentration owing to contagion, but regulations that restrict exposure to interbank lending as a function of bank size are successful in controlling the spread of systemic risk.

7. Concluding Remarks

This volume contains a number of macroeconomic and microeconomic works on the subjects of monetary policy transmission and the regulation of the banking industry. The reason to consider both issues in the same volume lies in the fact that some channels whereby monetary policy reaches the real sector hinges on the structure of the banking sector (barriers to entry, degree of competition, financial taxation, etc.)and on some informational distortions typically ascribed to the financial sector(lenders borrowers-relationship, ownership relations, etc.)

The structure of the volume combines empirical and theoretical contributions on issues that are relevant for Chile and other emerging economies. On the theoretical part we have learned how shock are transmitted internationally and how this strongly affect small open economies. It is argued in this volume that the effect depends on the economy's leverage and the presence of the financial accelerator mechanism as an additional force that propagate the strength of the shock.

On the empirical side the papers on monetary policy transmission show that the banks interest rates takes time to adjust to movements in the monetary policy rate in developed countries. Nonetheless, it is shown that Chile is not different from other countries (even developed ones) in terms of monetary policy rate transmission, and it tends to pass through the monetary policy rate rapidly. The international evidence presented here points the difference between the reaction of consumption and investment to monetary shock in the euro area and US. Some tentative and pioneer hypotheses are discussed here. Concerning Chile, there is evidence of how the credit channel has operated and the importance of the flight to quality hypothesis to explain the transmission of the monetary policy in this economy.

On issues related to the banking sector, the volume includes several contributions that concentrate on the regulatory constraints imposed on the industry based on the argument of its intrinsic vulnerability and the systemic repercussions of potential insolvency. The most prominent of these is undoubtedly the deposit insurance scheme, as part of a broader safety net constructed to dampen isolated banking crises. Among others regulations a paper in the volume review the tax structure levied on the banking industry and how this affect the functioning of the financial system.

Another important institutional aspect of the banking sector is the existence of barriers for foreign banks to entry in domestic capital markets. The work in this book show that financial integration reduces the economic Luisvolatility in different states in the US but the preliminary evidence point in the opposite direction for Latin America. Also, financial policies that emphasize foreign bank entry denial increases bank margins and reduce the efficiency of the banking system.

Finally, but no less important, the industry's market structure - in terms of either market concentration or interaction with related financial intermediaries - is shown to play a key role in several characteristics of the Chilean banking system. This microeconomic characteristic determine the interest rate charged by banks, the access to credit of small debtors and the spread obtained by the banks.

In summary, a common feature of the findings reported in these works is that regulatory distortions have an important effect on the efficiency and profitability of the banking industry. Whether we measure the spread from intermediation or the interest rates charged for traditional banking activities, the microeconomic structure has an effect on these variables. The natural question to pursue involves the effect of this regulatory and industry conditions on the transmission of monetary policy. Certainly, the evidence presented in this volume provides interesting venues for future research and policy implications.

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