

## Emerging Markets

# Pension Watch

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### Economic Analysis

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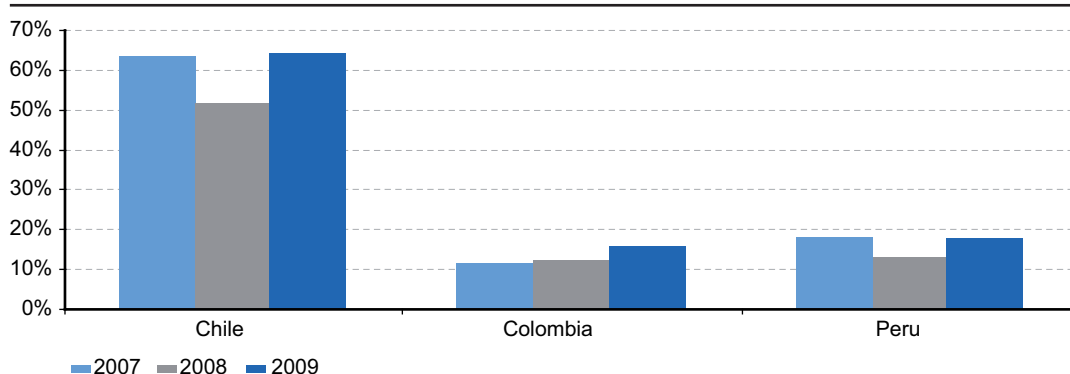
## The Role of Pension Funds during the Financial Crisis

- **Pension systems that have pension funds based on individual capitalization accumulate a large volume of resources** in relation to the size of the economy.
- **The investment decisions of pension funds influence the domestic markets** and the impacts will be more or less pronounced depending on the relative size of the funds.
- **This paper reviews the performance of pension funds as financiers in the private sector**, given the contraction in bank credit to firms during the subprime crisis in three Latin American countries with individually funded pension systems: Chile, Colombia, and Peru.
- **The financing of firms using an alternative to bank credit**, such as issuing bonds or shares, is only possible if investors are willing to buy these products.
- **The flow of resources to pension funds do no experience significant changes with the business cycle**, i.e. there should be a relatively stable availability of these resources.
- **It is concluded that the bank credit squeeze increased the use of alternative debt instruments**, and pension funds held a large amount of resources invested in these products that served as a substitute for bank credit.
- **Furthermore, it is observed that Chile's pension funds have contributed to reducing illiquidity observed between September 2008 and April 2009**, which would have been achieved due to the significant amount of resources held in time deposits.

**In countries with pension systems based on defined contribution individual capitalization, pension funds are economically influential actors.** The degree of impact they have on local economies is related to the relative size of the accumulated funds.

Chile, Colombia and Peru introduced capitalization and the private management of funds into its provisional systems. The size of the pension funds in each of these countries fundamentally differs, because of the time elapsed since the reforms were implemented and the extent of the reform on the system. In Chile, reform was introduced in 1981 under a substitution model, in which the new system replaced the old for all new members and closed the incorporation into the old system. In Peru and Colombia, reform came more recently: 1993 and 1994 respectively. These two countries installed parallel system reforms, rather than substitutes, i.e. they introduced a system of individual capitalization as an alternative to the coexisting pay-as-you-go structure. In Chile, where more time has elapsed since the reform and the system has had time to extend to the entire workforce, pension funds have accumulated assets worth more than 60% of GDP, as shown in figure 1. In Peru and Colombia, they have reached lower levels, yet still significant.

Chart 1

**Pension Funds as a % of GDP**

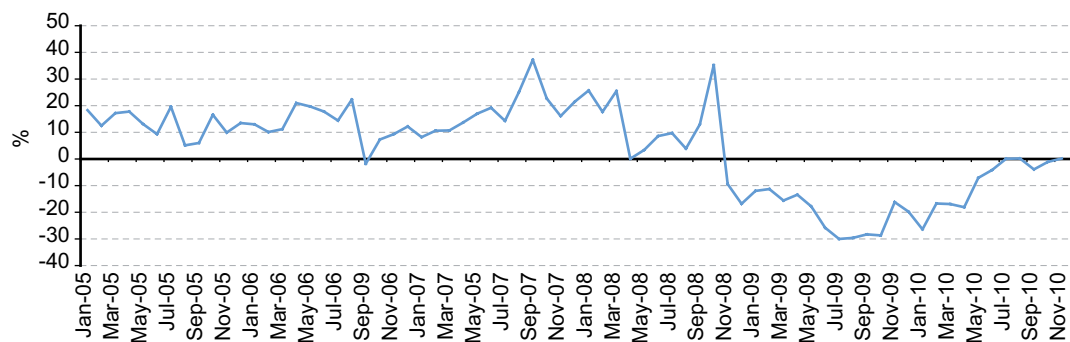
Source: Chilean Superintendency of Pensions, Peruvian Superintendency of Banking, Insurance and AFP, Colombian Financial Superintendency

## The Contraction of Corporate Bank Credit during the Crisis

Financial crises are characterized, among other things, by a major credit crunch. The fall in business financing is one of the principle mechanisms that transfer the financial crisis to the real economy, accentuating the effects of the crisis in the countries involved.

During the subprime crisis, the markets suffered a liquidity squeeze that altered the cost and access to business financing. Figure 2 shows the seasonal contraction of commercial credit and the banking industry, experienced in 2009 and 2010 in the United States economy.

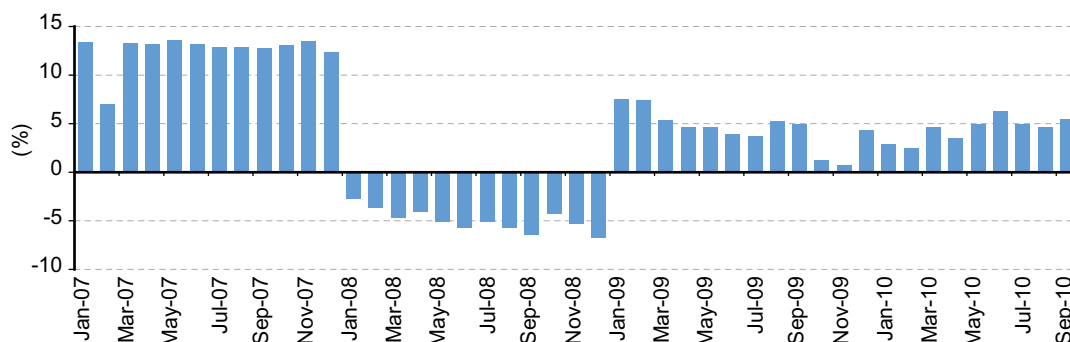
Chart 2

**Commercial and Industrial Bank Loans in the US, seasonally adjusted percentage change**

Source: FED

Chile, Colombia and Peru have also experienced a contraction in the amount of bank lending to businesses, but their decline varies in magnitude and in the period which it occurred. Of these three countries, Chile was the most affected by the flow of commercial credit, showing a real decline throughout 2008, ending the year with an annual growth rate of -6.7%. As shown in Figure 3, the decrease in commercial credit continued into early 2009, then experienced a slight rise, so that the expansion in December 2009 stood at an annual growth rate of 4.3%, far from the 12.3% of 2007.

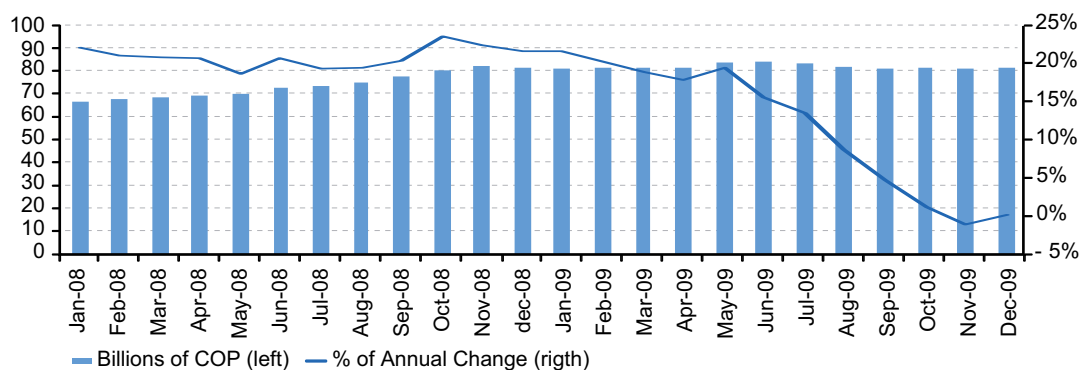
Chart 3

**Real Annual Growth Rate of Commercial Bank Credit in Chile**

Source: Superintendency of Banks and Financial Institutions in Chile

In Colombia, meanwhile, during 2008 and particularly in 2009, there was a reduction in the growth rate of commercial bank credit; however, it did continue to expand, as shown in Figure 4. Commercial bank credit in 2008 experienced a 21.5% growth, while in 2009 the year on year expansion was only 0.2%.

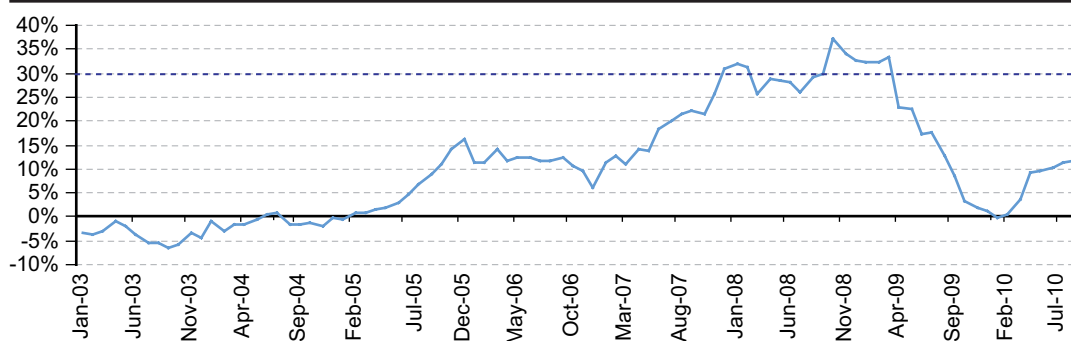
Chart 4

**Commercial Portfolio**

Source: Superfinanciera and BBVA Research

In Peru, the deceleration of commercial bank lending is only seen from March 2009 onward, although similar to Colombia, it did not contract. During the period between September 2008 and February 2009, the recorded year-on growth rates of commercial bank credit exceeded 30%, and experienced a clear deceleration as rates drew close to 0% at the end of 2009. As shown in Figure 5, it is noteworthy that in early 2010, commercial loans began to recover more dynamic growth rates around 10%.

Chart 5

**Credit from Banking Sector (% of annual change)**

Source: Superintendency of Banking, Insurance and AFP

The fall in bank lending to companies may reflect a constraint on supply, demand or both. On the supply side, in the context of the financial crisis there was a drop in liquidity and a growth in risk that leads to a collapse of bank credit supply. On the demand side, companies may decide to postpone investment projects due to the recessionary situation, producing a contraction in demand.

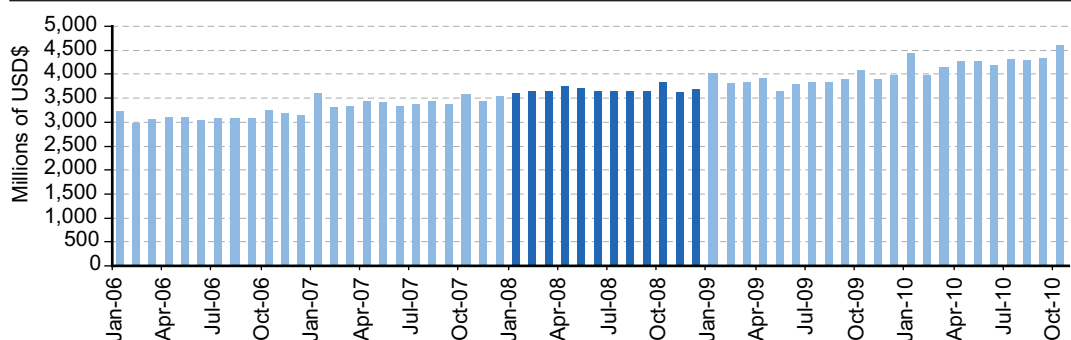
However, if the drop in commercial lending was only a matter of demand, the contraction would be observed in other financing alternatives; however, during this period, the opposite occurred: **while bank credit to businesses contracted, funding was raised through other financial products.** That was possible due to the existence of other investors with less restricted financing.

## Pension Funds and Productive Financing in the Context of the Financial Crisis

In countries that have introduced capitalization as the principal method of financing their pension systems, **pension funds have channelled a considerable portion of individual long-term savings and constructed a significant financial alternative to bank credit. It should be clarified that pension funds do not directly provide credit**, yet they do by buying financial instruments that are funding mechanisms for companies, such as bonds or shares.

**In countries that have pension systems that include individual capitalization pension funds, there is an availability of resources that confront lower restrictions on liquidity than the banking system, as its availability does not depend so heavily on the economic cycle.** While investments in terms of fund performance were hit hard by the crisis - in Chile the riskiest fund had over a 45% decline in value over 12 months in October 2008 - the flow of funds remained relatively stable, since it depends mainly on salaried employment. Although, in the context of the crisis, there was a decline in employment, particularly among salaried workers, the effects on revenue were marginal, as the bulk of the population remains employed and trading. Figure 6 shows the monthly collections in the AFP system (calculated as the monthly number of contributors for their average taxable income), it is possible to observe the relative stability of the system inputs.

Chart 6

**AFP Monthly Collection System, millions of dollars at December 2010**

Source: BBVA Research based on information from the Pensions Superintendency

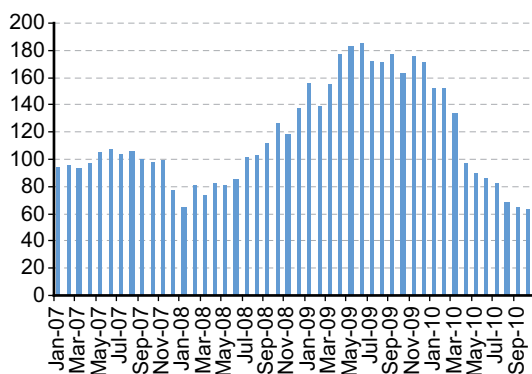
Therefore, despite the fall in the value of investments during the crisis, month by month the system received more than USD\$3,500 million in new funds to invest, during 2008 and 2009. The greater stability in the flow of savings for the AFP pension system is advantageous, since the availability of resources can sustain some degree of private investments by providing alternative sources of funding and resources to the market in the context of liquidity.

The three Latin American countries studied, Chile, Colombia and Peru, experienced an expansion of corporate bond issuances during the crisis, instruments that provide large enterprises a financing alternative. Therefore these resources would have allowed, to a certain extent, the financing that businesses need during a contraction of bank credit experienced during the crisis.

In Chile during 2009, the size of resources put into private corporate issuances had a real growth of 90% compared to 2008, amounting to more than USD\$6,400. In 2010, the amount of issuances did not remain so high, and rather experienced a real decline of 74.4%. Figure 7 illustrates the collection of corporate bonds Chile accumulated in real terms for the period 2007 to 2010; it is possible to observe the increased flow of funds during 2009. Figure 8 shows the annual position of financial products in Chile between 2002 and 2009 in real terms, it appears that the issuance of various instruments for financing companies experienced an expansion in 2009, and particularly notable is the case of stocks<sup>1</sup> and corporate bonds. It is precisely during 2009 when there was a significant contraction of corporate bank loans, coinciding with the increase in the issuance of financial products such as stocks and bonds.

Chart 7

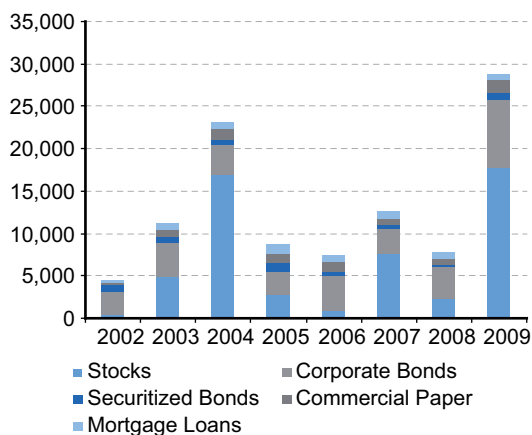
#### Issued Corporate Bonds (MM UF accumulated 12 months)



Source: SVS and BBVA Research

Chart 8

#### Chile: Issuance of Financial Products in Chile, Millions of 2010 Dollars

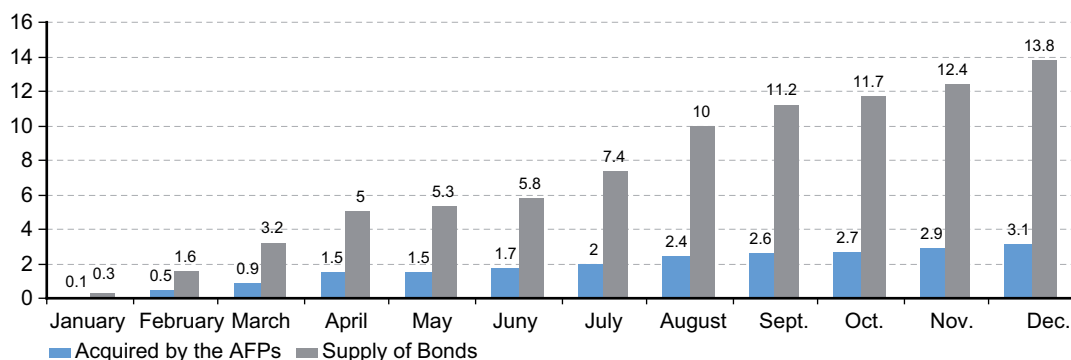


Source: Superintendency of Securities and Insurance

Similarly, in Colombia in 2009 the issuances of corporate bonds was historically important, reaching a total of \$13.4 billion (USD\$6.22 billion), while in 2008 they totalled \$5.7 billion (USD\$2.90 billion), thus resulting in an expansion of 135%. Of the bonds issued in 2009 in Colombia, not including those to banks, accounted for 47.4% of the total, or approximately \$6.5 billion (USD\$2.95 billion).

1: 2004 also recorded a particularly high share of stock issuances; however, what occurred was an overlap of large issuances, in fact the three largest issuances in 2004 represented 78.8% of the issuances that year, while the three largest issuances in 2009 was equal to 38.8% of the total, which would show a more extensive use of this funding mechanism.

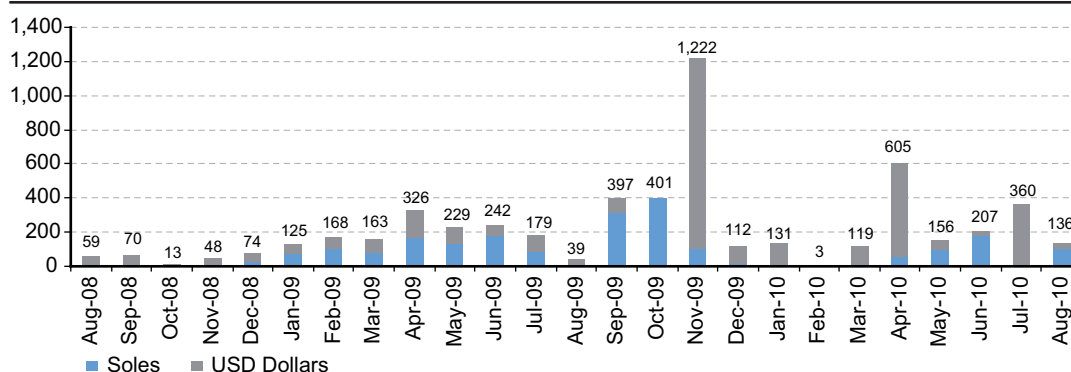
Chart 9

**Supply of bonds and bonds acquired by the AFPs**

Source: Asofondos and BBVA Research

As for Peru, from the second trimester in 2009, the corporate issuances began to show a strong momentum that lead to unprecedented levels towards the last quarter. As a result, the average issuance during 2009 largely exceeded those recorded in 2008, and even 2007, a year of high economic growth. Similar to Chile, Peru experienced a coinciding period when commercial bank credit declined and corporate bond issuances expanded.

Chart 10

**Bond Issues of Non-Financial Issuers**

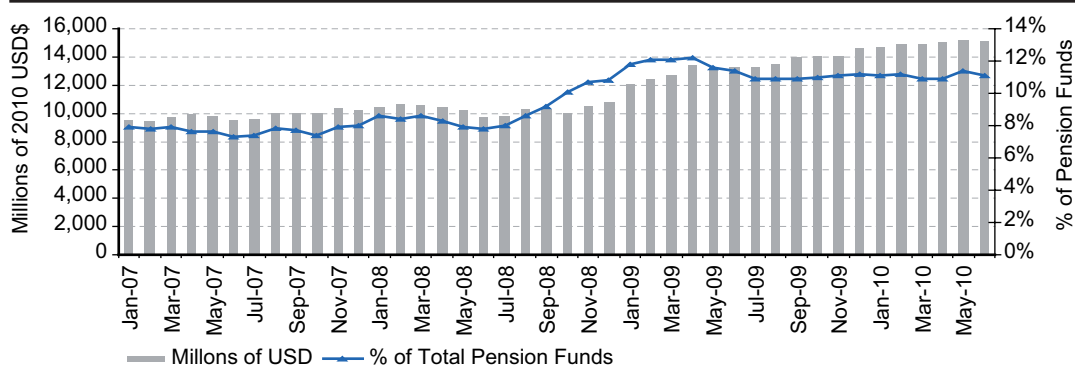
	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10
Domestic Market (Mn \$)	0	350	401	100	12	0	0	0	55	100	180	5	100
Foreign Market (Mn \$)	39	47	0	1,122	100	131	3	119	550	56	27	355	36
Total (Mn \$)	39	397	401	1,222	112	131	3	119	605	156	207	360	136

Source: RPMV, Directorate of Issuers and Asset Management – CONASEV

The companies in these economies could use this alternative funding method, because it had resources available to acquire these instruments. Despite the financial crisis, pension funds maintained a significant flow of resources that would have ensured the demand.

In Chile, pension funds held large amounts of resources invested in bonds and commercial firms in the domestic market. Figure 11 shows the investment in these instruments during 2007 to 2010. There was an increase in the amount invested in real terms during 2009, which is likely to say that capital was available from pension funds to sustain the supply of issuances recorded in 2009.

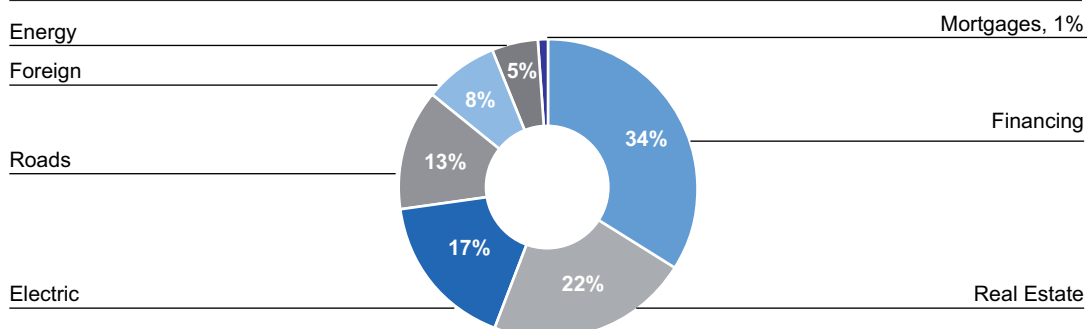
Chart 11

**Pension Fund Investment in Bonds and Commercial Paper in the domestic market, in Chile, 2010 dollars**

Source: Superintendency of Pensions

In Colombia, as seen in Figure 12, pension funds acquired about 23% of total bonds issued by the real sector in 2009, the investment is conducted in different sectors of the economy, with a prominent participation in infrastructure sectors.

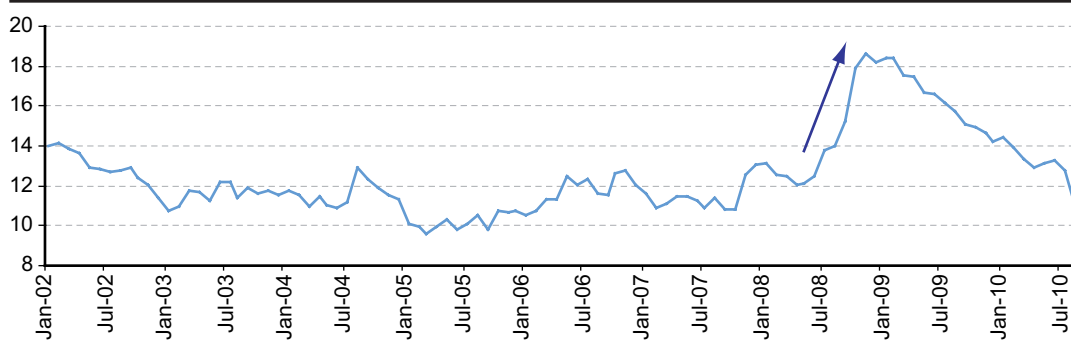
Chart 12

**AFP Involvement in Issuances**

Source: Asofondos and BBVA Research

In Peru during the crisis, pension funds recorded an increase in the proportion invested in corporate bonds, as shown in Figure 13, with a significant growth from the second half of 2008, but since March 2009, the amount of investments in these instruments began to decline. It must be clarified that the data does not separate the price effect from the quantity effect, and thus can not confirm that during the financial crisis pension funds had effectively altered the quantity of investments in a specific type of financial instruments, since the change in relative price could partially or totally explain the apparent restructuring of portfolios. However, it can be stated that the AFP maintained a considerable fraction of the funds invested in these instruments, which amounts to a significant value of resources, thus helping to sustain demand for these products in times of extreme volatility and illiquidity.

Chart 13

**Investment in Corporate Bonds of Non-financial Institutions (as a % of the Pension Funds value)**

Source: Superintendency of Banking, Insurance and AFP

In short, pension funds played an important role in business financing during the contraction of bank lending. It is observed that the three countries studied, Chile, Colombia and Peru, had their banking industry affected and experienced contractions in commercial banking credit. In the three cases, the slowdown of lending was partly offset by higher corporate bond issuances that allowed businesses financing at competitive prices. This alternative financing mechanism has been sustained in part by the AFP, whose available resources are more stable.

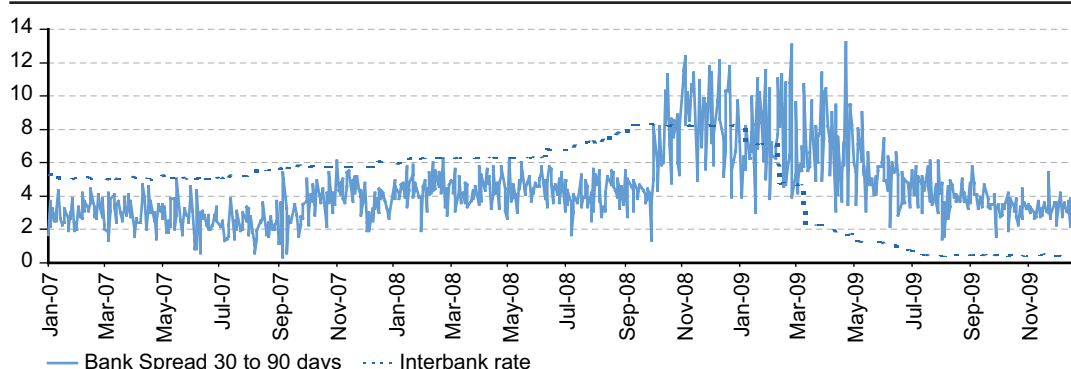
## Financial Liquidity: Participation of pension funds

Pension funds indirectly facilitate bank credit to provide resources to the financial sector through the investment in debt instruments, reducing liquidity constraints. This flow of capital can then be channelled by banks to businesses and families.

In Chile, the AFP has always invested in term deposits in the domestic banking industry, as they constitute a safe debt instrument, and thus regulation has permitted that the AFP can invest in these instruments since the beginning of the system in 1981.

Figure 14 shows the financial stress that came under the Chilean banking system during the crisis. There was a significant increase in the interbank rate and interest rate spread for system operations on average between 30 and 89 days between September 2008 and April 2009.

Chart 14

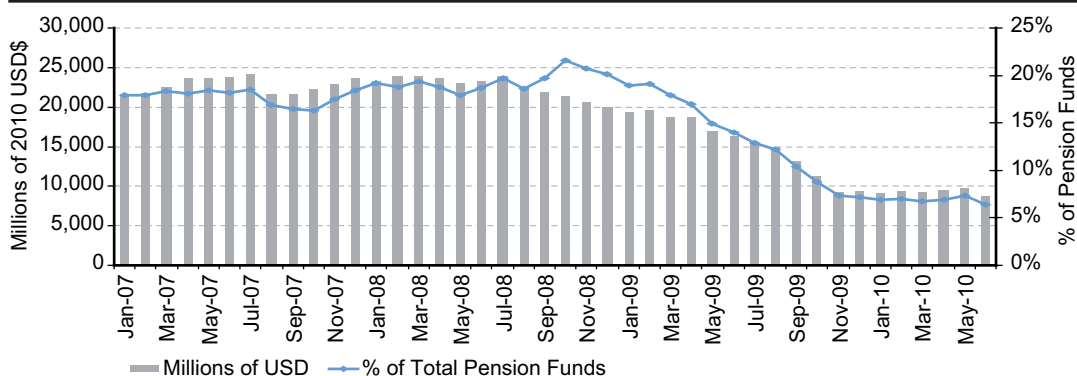
**Financial Stress**

Source: Central Bank of Chile

Figure 15 illustrates the investment in pension funds in time deposits during the past years as both an amount of investment (USD \$2010) and as a percentage of total pension funds. It is noted that during the period of financial stress – September 2008 to April 2009 – the AFP held a fraction of nearly 20% of pension funds invested in term deposits in the domestic banking system, equivalent to approximately USD \$20 billion. Subsequently, the deposits have become less important in the investment portfolio of the AFP, declining to only about 7% of the funds.



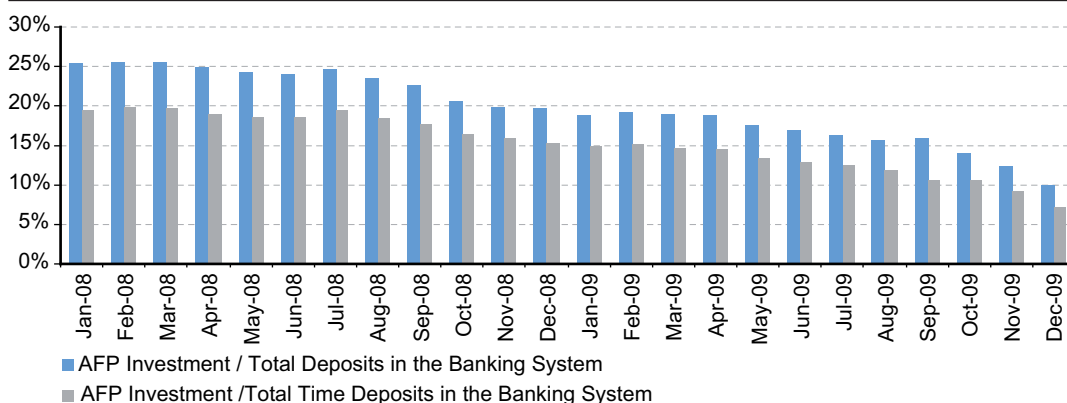
Chart 15

**Pension Fund Investments in Time Deposits  
in the domestic market in Chile, in 2010 dollars**

Source: Pensions Superintendency

During the period studied, it appears that pension funds in the banking system retained a significant amount of resources. Figure 16 shows the importance of pension fund investment in time deposits for the Chilean banking system, which accounted for nearly 20% of the systems deposits and about 15% of total deposits during the crisis. Subsequently the relative importance of pension funds in bank deposits has declined.

Chart 16

**Relative Importance of Pension Fund Investments  
in Time Deposits in the Chilean Banking Sector**

Source: BBVA Research based on information from the Superintendency of Pensions and Securities and Insurance

## Conclusion

Financial crises are characterized, among other things, by the reduction in liquidity and the contraction in commercial bank credit. This is one of the principle effects that spread the financial crisis to the real economy.

Pension systems with individual capitalization channel a significant portion of domestic savings into the economies that have this system implemented, as is the case of Chile, Colombia and Peru. These resources are invested in local financial markets in instruments that provide a financing alternative to businesses. The investment profile of pension funds has a long-term outlook, which coupled with the mandatory contributions and the inability to withdraw at the discretion of the saver, it ensures low variability in the flow of resources that receive the funds. Therefore, pension funds are a financing alternative to bank credit that increase stability during a crisis.

It is noted that the credit crunch was partly offset by an increase in the issuance of alternative business financing, such as bonds and equity. Companies financing by using alternatives to bank credit

instruments, such as issuing debt or shares, can only do so if there are investors willing to purchase these products, i.e. investors with a less impacted reduction on liquidity during a crisis. It also is observed that pension funds held a significant amount of resources invested in these products.

Additionally, in Chile, there were further contributions made to the banking system, because the investment in time deposits made by the AFP allowed a partial easing to the liquidity crunch observed in the most critical moments of the crisis. This would be an indirect mechanism through which pension funds facilitate the provision of bank credit in the time of a crisis, by injecting funds to acquire debt instruments from the banking system by reducing liquidity constraints.

In short, economies in which savings and credit is not only channelled through the banking system, but also through pension funds, face lower effects as the financial crisis transfers to the real economy by way of a contraction in the supply of financing.

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