BANCO DE MÉXICO

Financial System Report

September 2012

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NOTICE

Unless otherwise specified, this document has been drafted using information as of October 26, 2012. Figures are preliminary and may be revised.

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1. Introduction

This Financial System Report covers the period from October 2011 to September 2012, particularly focusing on the events that occurred in the wake of the publication of the Financial Stability Board annual brief in March 2012. Rather than describing relevant events, this Report aims at providing an account of the state of the Mexican financial system from the central bank's standpoint. Among Banco de México's purposes, promoting the sound development of the financial system and the adequate functioning of payment systems is fundamental. Consequently, this report chronicles the evolution of the Mexican financial system and infrastructure, encompassing most regulated financial entities. Moreover, special attention is given to systemic risk assessment, which involves identifying circumstances prone to hinder efficient financial intermediation that, in the worst-case scenario, would require government intervention. Therefore, the emphasis is placed on the analysis of the risks the system faces, as well as on its strengths, by using the information available as of the publication of this report, with a special focus on commercial banks, given their utmost importance as financial intermediaries.

During 2012, the international environment has significantly deteriorated, as a result of the euro zone crisis aggravation, the difficult US economic situation and the weakening of world economic activity. The measures implemented by the European Central Bank (ECB) in December 2011 contributed to restoring relative calm on financial markets, after several months of prevailing volatility. Nonetheless, as of April, sovereign risk premia in Eurozone countries with a weaker fiscal position −like Italy and Spain− increased significantly, and their governments underwent greater difficulties to refinance debt maturities. The increase in financing costs was also triggered by both doubts about the banking sector's financial situation in some countries with a weak fiscal position, and the hardships some European countries have struggled with to meet their deficit reduction targets on time. On top of that, the complexity and delay of European processes to reach agreements resulted in prolonged uncertainty and contributed to raising fear even more. The conjunction of the aforementioned elements has given way to an extremely complex environment, which requires the implementation of far-reaching measures in both the fiscal integration and banking unification domains, and also in those related to structural reforms and competitiveness improvement.

On the other hand, the US political inability to set their public finances straight poses another reason for recent concern. In particular, Mexico's main commercial partner has failed to legislate to prevent an exorbitant automatic fiscal cut ("fiscal cliff") from coming into effect in January 2013, which would surely throw the economy into a recession −hence the urgence to adopt measures to soften the cut.

As for the global economy, several indicators show that the growth pace of developed and emerging economies has slowed down, thereby causing a downward revision of global growth forecasts for the current and the following year. This less optimistic outlook has led to more moderate capital flows toward emerging economies. In September, diverse economic policy announcements brought about positive reactions in international financial markets, of which two are worthy of mention: the Outright Monetary Transactions (OMT) –the new ECB program that allows the purchase of E.U. sovereign bonds in the secondary market− and the agreement by the Federal Open Market Committee (FOMC) to make additional purchases of mortgage-backed assets issued by U.S. government agencies so as to contribute to the domestic economic recovery. However encouraging these steps may be, it will take time to assess their effectiveness in the medium term. In like manner, as central banks have indicated, these support actions can by no means substitute the fiscal and economic efforts that some countries have to undertake to set aright imbalances and recover the path of

sustainable growth. It follows that risks associated to the international environment continue to be high.

Despite unfavorable international circumstances, during the period covered by this Report, the Mexican financial system has continued to grow and encourage domestic economic activity. The domestic financial system's progress, strength and sound performance can be explained, among other reasons, by the prevailing macroeconomic conditions of stability, derived from the prudent fiscal and monetary policies put in place over the last years, as well as strict financial regulation and oversight.

The stable macroeconomic environment is reinforced by a floating exchange rate regime and an international reserve accumulation policy based on transparent mechanisms having no direct effect on exchange rate determination. Thanks to the adopted regulatory measures and a model based on foreign subsidiaries, the international crisis' direct impact on the Mexican banking sector is expected to be limited.

Funds raised by commercial banks, especially by large-scale ones, come mainly from retail deposits, contrary to what is typical in other countries and regions, where the expansion of leading banks derives from market-based financing, stemming from overseas on some occasions. This has resulted in corporate and household loans growing on a more solid and stable basis, and in a lesser shock when confronted with a credit or liquidity crunch in international markets. Nevertheless, the Mexican economy is not immune to global economic fallout, nor is the domestic financial market entirely exempt from volatility in international financial markets. It is all the more necessary, therefore, that authorities remain alert for the timely identification of risks that could pose a threat to financial stability, and take, if necessary, desirable steps to mitigate their effects.

The document contains eight sections. The second section of the report provides a description of the international and domestic environments. The third section assesses the strengths of Mexican financial intermediaries and explains the financial system's structure. The fourth section evaluates the performance of domestic financial markets. The fifth section relates the evolution of the infrastructure that supports the financial system. The sixth section analyzes the financial position of households, firms and the public sector. The seventh section presents the results of various stress tests, and by means of network analysis, looks at the ability of the financial system to absorb market, credit and macroeconomic shocks. The report wraps with a balance of risks and conclusions.

2. International and domestic environment

2.1 International environment

As of this year's second quarter, global financial and economic conditions have deteriorated, as a result of the escalation of the Eurozone crisis, a deleveraging process on the part of some global banks –particularly in Europe−, the intricate US fiscal situation and the spreading of less favorable expectations for world economic activity. However, a number of measures announced by monetary authorities last September, mainly in the U.S and the Euro zone, have contributed to alleviating the stress experienced in financial markets. We present below an analysis of each one of these topics.

The aggravation of the European crisis

After last year's turbulent closure, financial markets relatively settled down in the beginning of 2012. This, by virtue of measures implemented at the end of 2011 by the European Central Bank (ECB) to provide banks with liquidity via long term loans and the announcement of a handful of actions to strengthen the EU through a new fiscal agreement.[1] But the resulting calm was merely transitory, and by April, markets were again experiencing volatility. Concerns about Greece not honoring its commitments with the EU and the International Monetary Fund (IMF), so much so that it would abandon the Monetary Union, reached a critical dimension. Additionally, the uncertainty surrounding the Spanish banking sector started to escalate in May in consequence of the nationalization of Bankia, thereby boosting risk premia of EU countries with a weak fiscal position –like Spain and Italy-, and thus engendering growing difficulties to refinance their sovereign debt.

The downfall that the EU has experienced since the second quarter of 2012, and particularly, the increase in risk premia, can be explained, among other things, by the following causes:

i. Investors' tacit acknowledgement that EU countries' sovereign debt is not a risk-free asset and that the adoption of a single currency is not an irreversible process, as originally conceived.

ii. The tight link between sovereign and bank risks (sovereign-bank loop), and, specifically, doubts over the financial situation of banks in some countries with weak fiscal positions.

iii. The negative feedback between economic activity and tax collection, and, consequently, the difficulties faced by countries that have implemented economic adjustment programs to achieve their deficit reduction targets within the allotted time.

iv. The arduous interaction between EU subnational and national institutions, causing delays in the implementation of regional agreements.

v. Increasing external imbalances in Eurozone countries, owing to discrepancies in their macroeconomic conditions and perceptions about their banks' financial situation.

[1] These actions refer to the agreements reached during the Euro summit and announced on December 9, 2011. They set a precedent for the Treaty on Stability, Coordination and Governance in the Economic Monetary Union signed on March 2, 2012 (box 1).

Self-evidently, the combination of the above-mentioned factors has given rise to an overly complex environment, which will require the implementation of in-depth measures in both the fiscal integration and banking unification domains, and also in those related to structural reforms and competitiveness improvement. The remainder of this subsection describes the nature of each of the aforesaid factors.

i. The sovereign debt crisis and the integrity of the Eurozone

As already mentioned, the European crisis intensified when international investors realized that euro-denominated sovereign debt was no longer a risk-free asset. Indeed, the second facility for Greece, passed in March 2012, included a restructuration of Greek debt that brought about heavy losses for investors. The activation of retroactive collective action clauses (CACs) allowed 95.7 percent of debtors to engage in bond swapping.[2] Yet, the loss that investors suffered as a result of the restructuring process made EU sovereign bonds stop being considered as risk-free assets. Further, the restructuring of Greek debt demonstrated that the support given by European institutions to countries in financial distress is not unlimited.

During the period of analysis, the fact that the adoption of a single currency might not be an irreversible event became a source of growing concern. Greece's recurrent failure to achieve fiscal targets and Greek parties' inability to establish a government after May 2012 legislative elections put at risk the disbursement of a good deal of aid tranches by the EU and the IMF. While new elections were being prepared, fears rose over the possibility that the new government could disregard the formalized agreements relative to the second economic adjustment program, thus pushing Greece to euro exit, what would imply a breach of the single currency irreversibility principle.

Greece's possible withdrawal from the Eurozone raised expectations that other countries in a serious insolvency situation would follow suit (table 1). As a result, fiscal weakness translated into premium increases –due to insolvency and currency risk− and a far from negligible rise in public debt refinancing costs in European peripheral countries with the weakest fiscal positions (Graph 1). During that period, Greece saw a substantial decline in bank deposits and a new upturn in its risk premium.

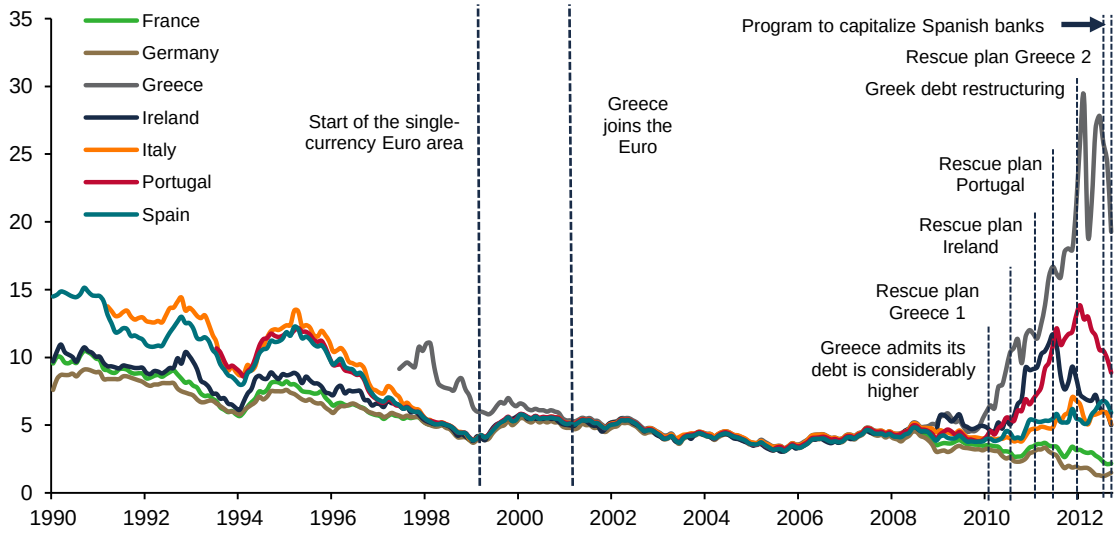
[2] In March 2012, the Greek government stated that 85.8% of bondholders had accepted the bond swap offer, which jumped to 95.7 percent thanks to the CAC activation. In this fashion, the nominal value of debt declined 53.5 percent (107 billion euros). This led the International Swaps and Derivatives Association (ISDA) Europe/Middle East/Africa (EMEA) Determinations Committee to declare on March 9, 2012 that a restructuring credit event had occurred with respect to the Hellenic Republic. This credit event significantly altered the derivative market functioning of Greek credit default.

Table 1
Public finance indicators of selected E.U. countries, 2000-2013
Percentage of GDP

	Public balance						Gross public debt					
	2000-08[1/]	2009	2010	2011	2012 [2/]	2013 [2/]	2000-08[1/]	2009	2010	2011	2012 [2/]	2013 [2/]
Germany	-2.0	-3.2	-4.1	-0.8	-0.4	-0.4	64.4	74.7	82.4	80.6	83.0	81.5
Belgium	-0.4	-5.6	-3.9	-3.9	-3.0	-2.3	95.9	95.7	95.6	97.8	99.0	99.4
Spain	-0.2	-11.2	-9.4	-8.9	-7.0	-5.7	46.9	53.9	61.3	69.1	90.7	96.9
France	-2.8	-7.6	-7.1	-5.2	-4.7	-3.5	62.8	79.2	82.3	86.0	90.0	92.1
Greece	-6.1	-15.6	-10.5	-9.1	-7.5	-4.7	103.7	129.0	144.6	165.4	170.7	181.8
Ireland [3/]	0.4	-13.9	-30.9	-12.8	-8.3	-7.5	31.8	64.9	92.2	106.5	117.7	119.3
Italy	-3.0	-5.4	-4.5	-3.8	-2.7	-1.8	105.5	116.0	118.6	120.1	126.3	127.8
Portugal	-4.1	-10.2	-9.8	-4.2	-5.0	-4.5	59.1	83.1	93.3	107.8	119.1	123.7

Source: IMF's World Economic Outlook Database, October 2012
1/ Simple annual average
2/ Forecast
3/ The unusually high 2010 public deficit figure is due to the absorption of bank losses.

Graph 1
10-Year Sovereign Bond Yields (fixed rate)
Percentage



Figures as of September 2012
Sources: OECD and BBC

Box 1

New measures to tackle the European crisis

Treaty on Stability, Coordination and Governance in the Economic and Monetary Union. On March 2, 2012 all member states of the European Union (EU), except the Czech Republic and the United Kingdom, signed the agreement with the purpose of strengthening budget discipline, coordinating economic policies and ameliorating governance within the EMU. On December 8, 2012, the basic outlines were announced. The treaty shall not enter into force until January 1, 2013.

The Second Economic Adjustment Programme for Greece. On March 14, 2012, Eurozone finance ministers approved financing of the Second Economic Adjustment Programme for Greece, which had been outlined during the October 2011 summit and its terms pronounced on February 21, 2012. In total, the program amounted to 172.6 billion euros, including the undisbursed tranches of the first program (24.4 billion euros). Furthermore, considering the impact of the Greek sovereign debt restructuring, which authorized private sector's engagement in bond swaps, the program committed an additional 48 billion euros through the Hellenic Financial Stability Fund for banks recapitalization. During Greece's debt restructuring, the EFSM offered 35 billion in bonds as collateral. Compared with the first adjustment program, the second puts forward structural reforms for growth and fosters a more gradual public debt reduction approach.

ECB Measures. On December 8, 2011, a number of measures were approved by the ECB to promote bank loans and liquidity in the Eurozone. In particular, two actions related to long term credit allocation[1] are noteworthy: a cut on the reserve requirement ratio from 2 to 1 percent and the broadening of the eligible collateral pool –by way of rating threshold haircuts for certain asset-backed securities and the temporary acceptance of current commercial loans−. In the face of low growth rates in the Eurozone, on July 5, the ECB resolved to cut its reference rates 25 basis points. Hence, the interest rate related to the main refinancing operations declined from 1.0 to a historical minimum of 0.75 percent. An additional announcement was made on September 6 both introducing a new sovereign bond purchase scheme in secondary markets –the Outright Monetary Transactions (OMTs), whose purpose is to safeguard the monetary policy transmission mechanism and the euro irreversibility[2]−, and eliminating minimum rating requirements for collateral eligibility in countries under the OMT program or requesting them.

The European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM).

Numerous agreements were reached at the June 29, 2012 euro area summit, conducive to breaking the vicious feedback loop between sovereigns and banks. The most important of which –presented by the European Commission to the European Council− consists of a single supervisory mechanism led by the ECB for the oversight of banks, to be adopted at the end of 2012. This mechanism finally came into effect on September 12, 2012.[3]

Once in force, the ESM could directly recapitalize banks, subject to observance of state aid regulations, which shall be laid down for each entity, sector or the whole economy, and formalized in a memorandum of understanding.

It was also decided that while this single supervisory mechanism was being established, a flexible use of existing securities would be made, so as to stabilize markets in member states abiding by the country-specific recommendations and other obligations derived from the European Semester,[4] the Stability and Growth Pact, and the Excessive Imbalance Procedure.[5]

Lastly, on July 9, 2012, the EFSF and the ECB signed a technical agreement to enable the ECB to act as an EFSF financial agent, what will make the facility's market operations easier.

Recapitalization of Spain's banking sector. On July 20, 2012, the EFSF and Spain signed a financial assistance agreement, and the Eurogroup did likewise, besides issuing a Memorandum of Understanding concerning the recapitalization of Spanish financial institutions for an amount of up to 100 billion euros. On September 28, 2012, independent consultants hired by the Spanish government estimated the definitive amount to be no higher than 60 billion euros. The aid will initially be provided by the EFSF, which shall not have preferred creditor status, and it will subsequently be taken over by the ESM, once this institution becomes fully operational. The agreement allows unused funds to be destined to purchase Spanish sovereign debt in primary or secondary markets. The Memorandum sets forth that Spain will have to fully meet its fiscal obligations and stipulates a first 30 billion euro loan through the Fondo de Reestructuración Ordenada Bancaria (FROB) –the bank recapitalization fund of the Spanish government− that will be considered as Spanish government's debt. Loan maturities will be up to 15 years with an average of 12½ years. Moreover, in July, the European Council agreed to grant one more year to the Spanish government to correct its excessive deficit. Hence, Spain committed to incurring a maximum deficit of 6.3, 4.5 and 2.8, as a percentage of GDP, in 2012, 2013 and 2014, respectively.

Portugal, Ireland and Cyprus. The financial assistance programs for Portugal and Ireland are still valid and funds have been made available according to plan.[6] In both cases, fiscal commitments for 2012 are within reach, although Ireland's performance has been better, due to public income exceeding the forecast, whereas the opposite has happened in Portugal. Lastly, on June 25, the Cypriot government formally requested assistance to the Eurogroup. The European Commission, the ECB and Cypriot authorities are currently working on the design of a comprehensive adjustment program.

[1] On December 21, 2011, the ECB granted 489 billion euros in funds to 523 banks at a 1.0 percent interest rate and a 3-year maturity.

[2] ECB' purchases of sovereign bonds will be made on the condition that the beneficiary country will, firstly, sign a program considering bond acquisition in the primary market, and secondly, comply with thereto related requirements. The ECB did not set limits to the program's amount and agreed to a regular creditor status. Eligible bonds will have a one to three-year maturity.

[3] On the same day, the Commission introduced its plan for banking unification in the Eurozone, which deals with topics related to oversight, regulatory harmonization, a collateral framework for deposits and a resolution mechanism for the entire region.

[4] Cycle of economic and fiscal policy coordination taking place the first half of the year, introduced by the European Commission in 2010 to reach Europe 2020 targets.

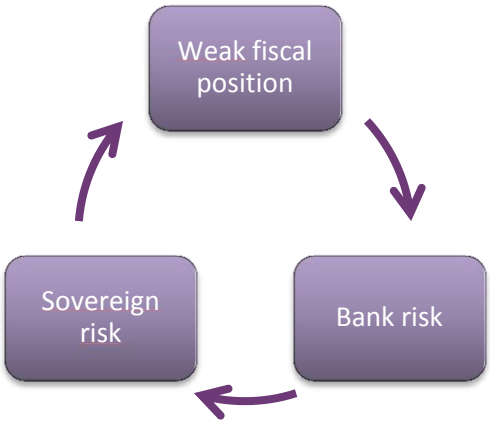
[5] Supervisory mechanism whose objective is to prevent and rectify EU macroeconomic imbalances, based upon a warning and sanction system for EU member states not complying with recommendations.

[6] On November 28, 2010, the EU Economic and Financial Affairs (Ecofin) Council and the European Commission agreed to grant a 85 billion euro loan to Ireland. On May 17, 2011, the Ecofin Council and the Eurogroup agreed to provide Portugal with financial assistance of up to 78 billion euros.

ii. The sovereign-bank loop

There is a tight link between sovereign and bank insolvency risks.[3] Consequently, in times of crisis, a weak fiscal position and a banking system in need of capital could generate a vicious feedback loop reflected on run-ups in sovereign and bank risk premia (figure 1).

Figure 1
The sovereign-bank loop



Considering the importance of global Spanish Banks to the Mexican financial system, the analysis we present below focuses on Spain's situation. From its beginnings, the European crisis has been characterized by a tight sovereign-bank link. This relationship has been particularly obvious in Spain, where actions implemented by the local government to strengthen commercial and savings banks in the last three years were not enough to ease uncertainty over some entities' solvency.

The situation became more acute at the beginning of May 2012, when the FROB (in English known as *Fund for Orderly Bank Restructuring*) took over Bankia −the fourth largest Spanish bank− and decreed new requirements for mortgage loans, with a view to securing their solvency.[4] Nonetheless, the fact that Bankia needed a capital infusion far higher than estimated exacerbated skepticism about the Spanish banking sector as a whole. This, together with a weak fiscal position (table 1), gave rise to international investor backlash.

Faced with growing lack of confidence, the Spanish government requested assistance from the EU to recapitalize some banks (box 1). However, far from easing tensions, this action aggravated the situation. Further concerns were brought up by the following events: the lack of information regarding the origin of resources, and the ensuing virtual subrogation by current

[3] A fragile banking system will eventually put pressure on public finances, thereby exacerbating sovereign risk. However, since banks are the main public debt holders, the intensification of sovereign risk translates into an increase in banking risk; furthermore, a government's ability to capitalize banks is determined by its fiscal position, thus feeding back the vicious loop.

[4] Bankia resulted from the merger in December 2010 of seven savings banks (Caja Madrid, Bancaja, Caixa Laietana, Caja de Canarias, Caja de Ávila, Caja Segovia and Caja Rioja), organized as a Sistema Institucional de Protección (an Institutional Protection Scheme or IPS) under Spanish law.

creditors *vis-à-vis* European institutions[5]; and, the potential worsening of the nation's fiscal position, derived from the fact that the direct aid recipient was the Spanish government instead of the banking sector.[6] In June, the cost of Spain's sovereign debt exceeded 7% YoY, the highest level ever since its adherence to the Monetary Union. On the other hand, the release of two studies carried out by independent consulting firms hired by the Spanish government initially contributed to market stabilization. Their results claimed that the Spanish banking sector's recapitalization needs, even in a highly adverse scenario, did not exceed one hundred billion euros, which the Eurogroup had already agreed to bestow on Spain.[7]

In June 2012, EU leaders announced new measures to restore confidence in Spain: firstly, they resolved to avert subordination of Spanish debt to the assistance granted by the ESM, with a view to reducing the cost of the Spanish government's direct access to capital markets; and, secondly, they put forward the possibility to directly recapitalize banks without governmental liability, so as to break the vicious sovereign-bank loop.[8] Under those circumstances, at the beginning of July, the European Council conferred to Spain one additional year to adjust its public deficit. During July, tensions soared, owing to the fiscal and liquidity situation of a number of Spanish autonomous communities, whose primary deficit was considerably higher than the target set by the fiscal consolidation program. This problem has definitely become an additional hurdle to put public finances on a sound footing. As a result, the public deficit for 2012 is estimated to surpass the 6.3 percent target.[9]

In August, the ECB president made a statement anticipating a new scheme for the purchase of sovereign debt, tied to intervention by the European rescue funds. In the aftermath, spreading rumors about Spain's imminent application for support and the way the ECB would intervene in sovereign debt secondary markets to abate funding costs for Spain and Italy, caused risk premia to plummet.

Premia dropped again on September 6, when the ECB Governing Council finally disclosed technical aspects related to such intervention, denominated Outright Monetary Transactions (OMTs), which substituted the Securities Market Program (SMP) that had been in effect since May 14, 2010 (box 1). Intervention by the ECB through OMTs is subject to conditionality imposed on signatory countries, what seems to have discouraged the likeliest

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[5] Unlike loans granted by the EFSF, which possess the same status as any country's sovereign debt, the ESM –expected to fully substitute the EFSF in 2013− shall hold preferred creditor status, just like the IMF, and only the latter shall take priority over it. This resulted from an agreement reached by European authorities in June 2011. Henceforth, the uncertainty relative to what mechanism would finally grant resources raised expectations about their preferential treatment, at the expense of current Spanish sovereign debt holders.

[6] These concerns were confirmed on June 13, 2012 when the rating agency Moody's downgraded the Spanish sovereign bond's rating from A3 to Baa3 and placed it on review for possible further downgrade. Withal, on June 25, the agency downgraded by one to four notches the long-term debt and liabilities for 28 Spanish banks. These events brought the sovereign-bank loop under the spotlight.

[7] On September 28, 2012, the results of several stress tests carried out by international consulting firms were released. In a highly unlikely and adverse macroeconomic scenario, they estimated additional capital needs to climb to 59.3 billion euros when integration processes underway and deferred tax assets are not taken into account. The amount comes down to 53.745 billion when those elements are considered. Concurrently, the Company for the Management of Assets (SAREB in Spanish) −stemming from the banking sector reform passed in August 2012− will start operations in December. Its purpose is to clean up the balances of banks by independently managing allocated real estate assets and bad loans granted to promoters. SAREB's capital will be owned by both private and public sectors.

[8] The ESM's capacity to directly recapitalize EU Banks is subject to the entry into force of the Single Supervisory Mechanism (SSM), presided by the ECB (see box 1).

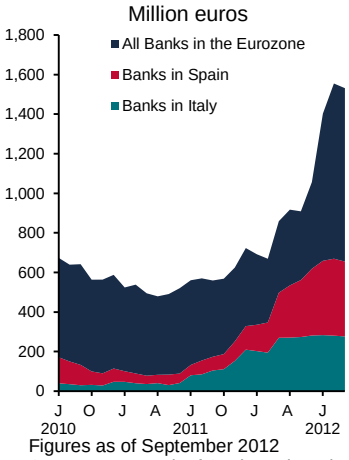
[9] In July 2012, the central government mandated the creation of a Regional Liquidity Fund of 18 billion euros to support autonomous communities. Access to these funds is dependent on compliance with specific austerity measures. By September, several communities, including Valencia, Murcia and Catalonia, had already voiced their intention to tap these funds.

beneficiaries, namely, Spain. Thus, it will take time to accurately assess whether this new measure's effects are long-lasting.

Finally, apprehensions around the banking sector in Spain and other countries with weak fiscal positions have become evident in significant imbalances in the Eurozone interbank market (graph 2ª), and also in the greater difficulties some governments are facing to refinance maturities. The devices that the ECB has hitherto implemented to provide EU banks with liquidity have kept their insolvency risk indicator from rebounding, as occurred in the second half of 2011 (graph 2b); withal, EU banks' shares remain below levels reached earlier this year (graph 2c)

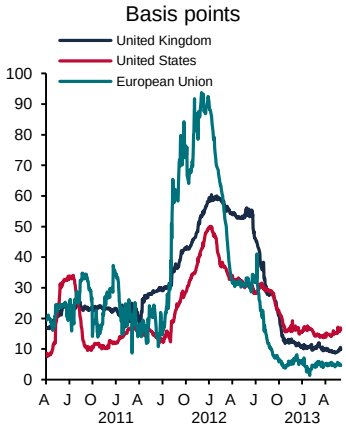
Graph 2
Liquidity granted by the ECB, bank insolvency risk in developed economies and stock market indexes of selected European Banks

a) ECB liquidity granted to European banks[1/]



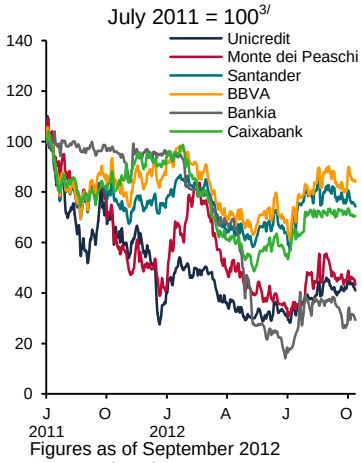
Figures as of September 2012
Source: ECB, Bank of Spain and Bank of Italy

b) Three-month LIBOR-OIS spread[2/]



Figures as of September 2012
Source: Bloomberg

c) Stock market indexes of Italian and Spanish banks



Figures as of September 2012
Source: Bloomberg

1/ Refers to ECB loans to credit institutions l
2/ The *overnight indexed swap* (OIS) is a swap contract, where the index rate is the overnight interbank money market reference rate. A wider LIBOR-OIS spread is indicative of greater fear of bank insolvency.
3/ Index basis as of July 20, 2011.

iii. Feedback between adjustment programs and fiscal position

The adjustment programs implemented in Greece, Portugal and Ireland have aimed at bringing public finances to a sustainable path, thus enabling their governments and banks to access financial markets under normal circumstances. Nevertheless, when countries in distress have limited funding sources, as is the case with the referred countries, tensions between fiscal consolidation and economic growth run high in the short run, the reason being that austerity measures tend to be stricter than in the case when funding sources are broader.

Under those conditions, and in the absence of structural reforms that stimulate economic activity, the risk of adjustment policies not hitting fiscal targets, due to the recession's

negative impact on economic growth and employment, is high.[10] This possibility of failure undermines market confidence and gives rise to the requirement of additional austerity maneuvers, while worsening the recession climate and adding further complications to fiscal consolidation. Lastly, the prolonged use of adjustment programs may give rise to fatigue in beneficiary countries and cause political erosion in countries supporting them, thus thwarting the possibilities of success.

The worst negative feedback loop between adjustment programs and fiscal position has taken place in Greece. The fiscal targets set for the referred country during the first adjustment program had to be revised by the second program, so as to acknowledge that the fiscal situation was even more precarious and the recession deeper than originally estimated.[11] As far as Portugal and Ireland are concerned, in contrast, the initially set targets have not been modified. As for Portugal, targets continue to be reachable, despite increasing risks of not meeting them, partly due to a worse than expected economic recession. [12] With regard to Ireland, this and next year's public deficit are expected to stay below the program target, a downward revision of forecasts notwithstanding.[13]

Tension between fiscal targets and economic activity is notable in countries that adhered to the Excessive Imbalance Procedure, as stipulated by the EU Stability and Growth Pact. This is the case for Spain since April 6, 2009, when the European Council advised that Spanish authorities should wipe out the deficit by 2012. However, by cause of a sharper-than-

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[10] Unlike other Eurozone countries, where fiscal plans are built on the basis of structural fiscal balance, Greece, Ireland and Portugal have set targets on the basis of current fiscal balance, given the difficulties to get funds. This offsets the effects of automatic stabilizers, which alleviate the adjustment programs' recessional impact. See IMF: Fiscal Monitor (update), July 16, 2012, p. 7.

[11] The first economic adjustment program envisaged to bring the fiscal deficit down from 13.6 percent of GDP in 2009 to 6.5 in 2012, thus letting gross public debt reach an approximate maximum of 150 percent of GDP in 2013. Though actually, in 2009, the Greek general fiscal deficit and gross public debt figures reached 15.6 and 129.0 percent of GDP, respectively (IMF Fiscal Monitor as of July 16, 2012). It soon became evident that the recession would be worse than expected and that fiscal targets wouldn't be met. The second adjustment program, which introduced the effects of the Greek sovereign debt restructuring undertaken in March, estimated that the general budget deficit would slide from 15.8 percent of GDP in 2009 to 7.3 percent of GDP in 2012, and that gross public debt would stabilize, jumping from 129 percent of GDP in 2009 to 165 percent of GDP in 2013.

[12] Portugal's public deficit targets for 2012, 2013 and 2014 are 4.5, 3.0 and 2.3 percent of GDP, respectively. Even though Portugal's 2011 recession remained below forecast (-1.6 versus -2.2 percent), expectations point at a considerably higher level for 2012 (-3.4 versus -1.8 percent) and the persistence of the recession in 2013, despite earlier forecasts of zero growth for that year (-2.2 versus 0.0 percent).

[13] Ireland's public deficit targets for 2012, 2013 and 2014 are 6, 7.5, 5.1 and 2.9 percent of GDP, respectively. As of June 2012, growth forecasts have been revised downwards: 0.5 percent (versus 1.9) for 2012, 1.9 percent for 2013 (versus 2.5), 2.6 percent (versus 3.0) for 2014 and 2.9 percent (versus 3.0) for 2015.

[14] The estimated fiscal balances for Spain in April 2009, when the European Council issued its recommendation, were -6.2 and -5.7 percent for 2009 and 2010, respectively. Yet, the posted numbers were -11.2 and -9.3 percent, respectively. In December 2009, the Council granted an extension to 2013 to eliminate excessive deficit, and, in July 2012, a further extension to 2014. On the last occasion, it set deficit targets of 6.3 percent of GDP for 2012, 4.5 percent of GDP for 2013 and 2.8 percent of GDP for 2014.

expected decrease in economic activity, Spain has been granted two extensions –to 2013 and 2014− to meet fiscal targets ever since.[14]

iv. The difficulties to enforce agreements in the European Union

Unlike sovereign nations where government institutions and legislative bodies are able to independently dictate economic policies, EU countries must agree on those policies at a subnational and national level in accordance with a legal framework based on complex and changing international agreements. The creation of a Monetary Union brought about new challenges in the fields of economic coordination and international governance. The current institutional arrangement in the EU should suffice to meet economic and monetary targets, in order to achieve financial stability. However, particularly in times of crisis, it has proved itself inappropriate to implement the essential agreements as promptly as needed.

The minimum time period to design the policies demanded by the crisis and forge consensus among EU and EMU members −which is a prerequisite for the approval of such measures− seems to keep European institutions from taking the swift and forceful actions the situation demands. This lateness has a negative impact on the crisis cost and calls for deeper measures to restore confidence, if they are to be credible.

v. Rising external imbalances

In the years immediately before the 2008-2009 financial crisis, an undeniable convergence of funding conditions took place in the Eurozone countries. The adoption of a common currency favored a significant decline in interest rates, especially in EU peripheral countries, thereby reducing financing costs for both firms and governments. This convergence of funding conditions occurred in spite of remarkable differences among countries, as far as macroeconomic situation and, particularly, fiscal positions are concerned. In that manner, EU countries with elevated debt or high public deficit levels would obtain funds under the same circumstances as those which did comply with Maastricht criteria, on the sole ground that they belonged to the Monetary Union.[15]

Apart from relaxing fiscal discipline, lower financing costs turned into increases in private expenditure, especially in countries where higher interest rates prevailed before the adoption of the single currency. In those countries, the abundance of financial resources and the increases in private expenditure led to inflation and a rise in labor costs above the European average, and, consequently, to competitiveness losses and the deterioration of the current account position. Nevertheless, the convergence of funding conditions and the ample liquidity made it possible to easily finance external imbalances via capital inflows (graph 3).

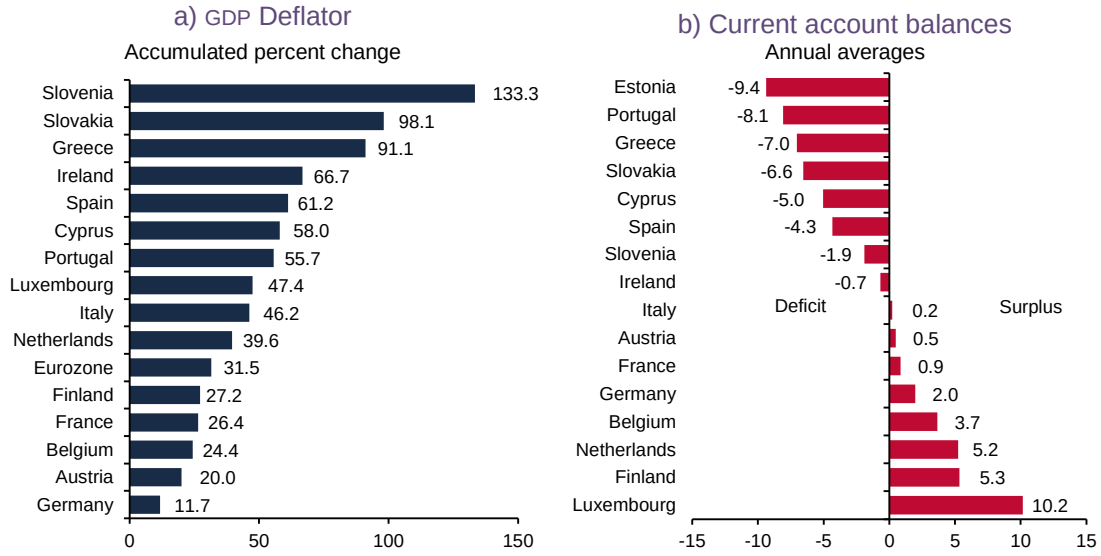
Nevertheless, the instability in European financial markets and the sovereign debt crisis have translated into poor access to external financing, on the part of periphery countries, and, in some cases, in increasing capital outflows. Evidently, the resulting disequilibrium in the balance of payments cannot be dealt with via an adjustment in exchange rates or domestic interest rates; as a consequence of the euro adoption, these countries have waived the right to have their own currency and an independent monetary policy. Under those circumstances,

[15] According to the Treaty on European Union, signed in Maastricht on February 7, 1992, countries which embrace the euro must keep their debt-to-GDP ratio at a maximum of three percent and their gross debt-to-GDP ratio at a maximum of sixty percent.

disequilibria in the balance of payments tend to persist, and their adjustment must be sought after by different means.[16]

External imbalances have become tangible in EU central banks' creditor and debtor positions through the payment system known as Target 2 (box 2), whose gaps have notably widened as of the second half of 2011. That is, in order to finance their deficit balances and cope with private capital outflows, countries in crisis have increased −through the Eurosystem− their debtor positions *vis-à-vis* other countries in the Eurozone. Naturally, countries with external surpluses have seen an increase in their creditor position.

Graph 3
Inflation and current account balances in the eurozone, 1995-2008



Source: World Economic Outlook, IMF, April 2012

Source: World Economic Outlook, IMF, April 2012

[16] By definition, the addition of a country's current account and capital account balances must equal their central bank's international reserve variation, in the absence of errors and omissions. Yet, this equality relates to an accounting identity and does not necessarily represent equilibrium in the balance of payments. If a country's expenses are higher than its income in a given period, the balance of payments will show a current account deficit in that same period. This deficit can be sustained if the country records a capital account surplus in the same period –capital inflows−, or if the central bank has enough international reserves to make up for foreign currency negative differences. If the addition of both foreign currency sources was insufficient, the current account deficit would be unsustainable, and external equilibrium would be restored through an increase in the spread between foreign and domestic interest rates or a real depreciation of the domestic currency or both. However, when a country belongs to a monetary zone, the adjustment process differs: the nominal exchange rate cannot vary with respect to other members of the monetary union, and the real exchange rate can only depreciate through reductions in domestic prices, namely wages. This implies a slow adjustment process during which high levels of unemployment may be recorded.

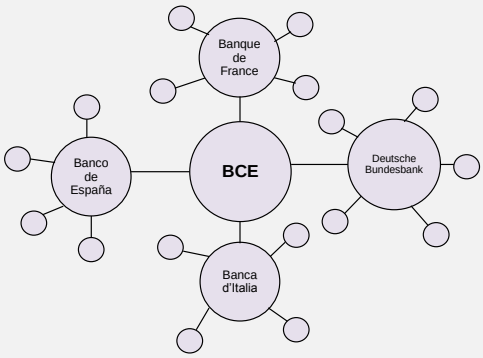
Box 2

The European Target 2 payment system

Consumption, savings and investment decisions taken on a daily basis by individuals, firms and governments require means or systems that allow transfer of resources among economic agents. The so called payment systems make it possible to carry out the required transfers through the financial system. Central banks are generally responsible for managing the most important payment systems, which allow commercial banks and other financial intermediaries to transfer funds, on their own account and on behalf of their customers.

Eurozone Banks transfer funds through a system known as Target 2 (*Trans-European Automated Real-time Gross settlement Express Transfer system*). The Target 2 enables transfer of funds among commercial banks located in different Eurozone countries. To that end, they use both the accounts they hold in their own central banks and those the latter hold in the European Central Bank (ECB).

The Target 2 payment system



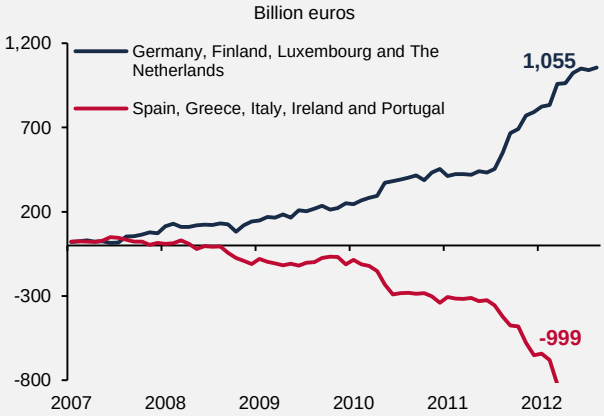
For example, if an Italian commercial bank wants to transfer funds to a German commercial bank, the central bank of Italy (Banca d'Italia) simultaneously credits the Italian commercial bank's account and debits its Target 2 account, with the instruction to debit the German central bank (Bundesbank) the corresponding amount. For its part, the Bundesbank debits the German commercial bank's account accordingly and credits its own Target 2 account.

At day-end closing, the net balances of all transactions carried out in Eurozone central banks' Target 2 accounts are recorded on ECB's books. Consequently, the latter ends up with a credit or debit position with regard to each of all central banks that make up the Target 2 system. These positions represent claims or liabilities by the ECB toward each one of participating central banks. In turn, every central bank ends up at day-end closing with a debit or credit position *vis-à-vis* the ECB. Central banks with a credit position record the corresponding amount in their assets, which is equivalent to an increase in international reserves. Banks with a debit position record that amount in their liabilities, which is equivalent to having a larger external debt.

Hence, transfer of funds among countries result from consumption, savings and investment decisions made by individuals, companies and governments in their respective countries. Countries that consume and invest more than they produce record a current account deficit; thus, they have to offset the difference by tapping financial aid or drawing foreign investment. In other words, they must generate a surplus in their capital account. When foreign resources are not enough to finance a country's current account deficit, unless its central bank uses international reserves to offset the difference, interest rates must be increased or the real exchange rate depreciated until reaching a new equilibrium. However, since Eurozone countries do not possess a currency of their own, current account deficits that are not counterbalanced by capital account surpluses turn into their central banks holding a debit position vis-à-vis the ECB.

Prior to the international financial crisis, central banks' credit and debit positions in relation to the ECB were relatively small, for current account deficits were offset by capital account surpluses. With the deterioration of the crisis, some countries that used to record capital account surpluses have seen them turn into deficits, while interbank markets ceased functioning. This situation is leading to a debtor position surge of peripheral central banks vis-à-vis the ECB and of the latter with respect to the German and Finnish central banks.

Target 2 net balances on the consolidated balance sheet of the Eurosystem as of April 30, 2012



Figures as of August 2012
Source: Institute of Empirical Economic Research - Universität Osnabrück

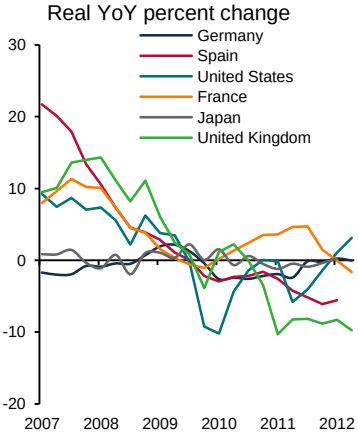
Lastly, although central banks' Target 2 balances vis-à-vis the ECB are backed by collateral, the ECB has diminished the quality of eligible assets. Further, the ECB has started to accept as collateral from commercial banks non-marketable assets and securities backed by assets stemming from their loan portfolio, as long as these instruments are in their turn backed by government collateral.

Deleveraging and fragmentation of the financial system

The adoption of a single currency favored a rapid financial integration process within Europe, characterized by a substantial increase in cross-border exposures and thus in the convergence of financing conditions in the Eurozone. Nonetheless, with the advent of the crisis, cross-border exposures turned into a reason for great uncertainty, since they represent a potential channel for contagion between peripheral countries' sovereign debt and central Europe's banking sector. The need to strengthen bank balances, the additional capital requirements set forth by the Basel Committee and the European Banking Authority (EBA), together with disruptions in the European interbank market have led international banks to reduce assets with higher capital requirements (graph 4a and b).

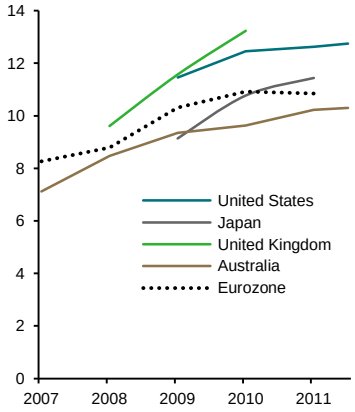
Graph 4
Financial system indicators in various advanced economies

a) Depository institutions credit to the private sector[1/]



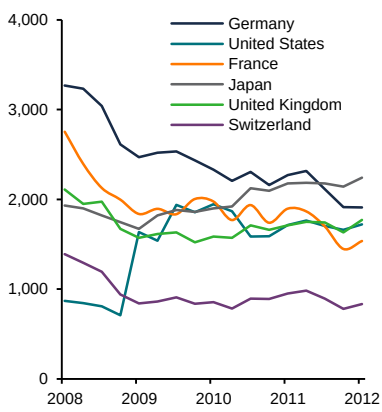
Figures as of June 2012
Source: IMF, BCE, Haver Analytics

b) Regulatory capital to risk-weighted assets



Figures as of December 2012
Source: IMF

c) Cross-border loans[2/]



Figures as of March 2012
Source: Bank for International Settlements

1/ Loans to the non-financial private sector (non-financial firms and households) include loans, securities, equity and other capital instruments.
2/ The criterion to define cross-border loans published on statistics based on ultimate risk is the residence of the guarantor that bears the ultimate risk. Hence, credits will be defined as cross-border if and only if the guarantor that bears the ultimate risk resides in any country different from the lending bank's country of residence.

Thus, European banks' cross-border exposures have significantly diminished, giving rise to a phenomenon known as "national bias" in their investment decisions. This trend may have lessened the impact of default on sovereign debt by a peripheral country over other European countries' banking sector, but has indeed contributed to financial fragmentation. This situation offers stark contrast to the performance of American and Japanese banks, which have seen an expansion in the volume of cross-border loans (graph 4c). Nonetheless, this increased intermediation is not enough to make up for the disintermediation of European banks. It is also worth mentioning that a higher concentration of financial intermediaries carries the risk of lower diversification. Specifically, this risk could materialize owing to a worsening of the US or Japan situation.

The complex fiscal situation in the United States

The United States efforts to address their fiscal imbalance are still in progress.[17] In fact, sundry political and legal issues have added to the situation, thereby intensifying risks for the global economy, and, in particular, for the Mexican economy. Those risks may derive from three intrinsically related topics:

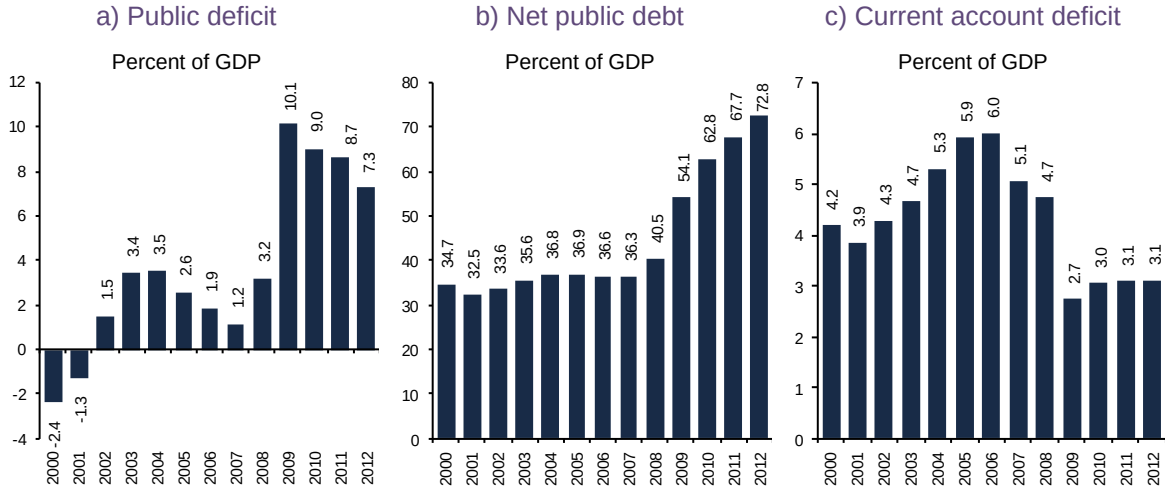
i. *Fiscal Cliff.* The fact that legislators may not reach agreements before the expiration date of several tax regulations by the end of 2012, has raised uncertainty over a possible recession, caused by an abrupt correction of public deficit in 2013.

ii. *Debt ceiling*. The debate over the federal government's debt ceiling, which gave rise to heightened tensions in financial markets and the downgrading of the US sovereign debt in the summer of 2011, may make a comeback in January 2013.

iii. *Fiscal consolidation*. The delay in defining a long-term tax consolidation strategy undermines confidence in the US dollar as a global reserve currency and raises funding costs for the US government.

A summary of the main components of each of these topics is presented below. At the end of the chapter, the more recent measures promulgated by the Federal Reserve System relating to its conduction of monetary policy are commented on.

Graph 5
Fiscal indicators and current account deficit in the United States



Source: U.S. Congressional Budget Office, update August 22, 2012

Source: U.S. Congressional Budget Office, update August 22, 2012

Source: World Economic Outlook Database, IMF, October 2012

[17] According to the U.S. Congressional Budget Office, the public deficit for the 2012 fiscal year shall amount to 1.128 billion dollars, accounting for 7.3 percent of GDP (graph 5a). Also, net federal debt in public hands shall account for 73 percent of GDP at year end, doubling the 36 percent recorded before the beginning of the crisis in 2007 (graph 5b).

i. Fiscal cliff

The "fiscal cliff" refers to abrupt public deficit cuts that might take place in the United States during 2013, provided legislators do not reach agreements on tax issues and public expenditure, given the expiration of diverse regulations by the end of 2012. The estimated shock ranges from 500 to 800 billion dollars (between 3 and 5 percent of GDP), depending on whether the fiscal or calendar year is taken into account, among other things. Approximately, higher taxes would account for two thirds of the adjustment and lower expenses for one third. If that were the case, the fiscal cliff would cause a sharp contraction of aggregate demand, and, consequently, the US economy would slide into recession, with inescapable effects on the global economy. Moreover, the fiscal cliff would particularly have a negative impact on the US financial system, for it is just getting over from the 2008 financial crisis and undergoing an adaptation process to a more compelling normative framework.

Estimates of the fiscal cliff's impact on US economic growth vary according to the size attributed to the shock. The Budget Office estimated the shock in nearly 500 billion dollars during 2013, and predicted it would cause a contraction in US economic activity equivalent to 0.5 percent YoY in the fourth quarter of 2013 and a rise in the unemployment rate to 9 percent in the second half of the same year. [18] Some private analysts consider, though, that taking into account the fiscal year –which starts in October of the previous calendar year and ends in September− underestimates the size of the shock, since a great deal of changes in fiscal policy occur during the last three months of 2012 or in January 2013. When taking the calendar year as a reference, the shock is estimated to surpass 800 billion dollars in 2013 (approximately five percent of GDP), thus generating a contraction of one percent in US economic activity and an increase of 9.5 percent in the unemployment rate.[19]

A new U.S. economic recession not only would have a considerable effect on Americans' wellbeing, who are already coping with the unfavorable conditions that have prevailed in labor and real estate markets in recent years, but would also affect the domestic financial system and the global economy. The more direct consequences on US banks would be a contraction of credit demand, a fall in profits and a brake on the merger and acquisition process that they are currently undergoing.

A drop in bank loans would once again inhibit the purchase of new housing, which has been picking up for some time. Although US banks, especially larger ones, currently have far more solid balances than on the eve of the 2008 financial crisis, a new recession would particularly be ill-timed, as new measures are still being put into action to enforce recent regulation stemming from the Dodd-Frank Act; moreover, such institutions also have to deal with the uncertainty associated with the enforcement of the above said regulation. Lastly, if it is true that in the worst-case scenario the 2013 recession would climb to as much as a third of that observed in 2009, the international economic environment is now more complex. As mentioned below, the Eurozone as a group will see a contraction of economic activity during the current year and meager growth in the next one, while the economic activity of developing countries also gives evidence of a slower pace of growth.

ii. Debt ceiling

Fiscal cliff risks could increase exponentially, particularly, because during the period in which they could materialize, the US Treasury could start putting pressure on the Congress to elevate the previously set debt ceiling. As mentioned in the *Report* published in October 2011,[20] national controversy over raising

[18] According to the U.S. Congressional Budget Office's forecast, the public deficit would fall from 1.128 trillion dollars in the 2012 fiscal year (7.3 percent of GDP) to 641 billion dollars (4.0 percent of GDP) in 2013. See Congressional Budget Office: *An Update to the Budget and Economic Outlook: Fiscal Years 2012 to 2022,* August 2012.

[19] See Citi Research: *U.S. Macro Focus, The Fiscal Cliff: Assessing the Policy Risks*, September 21, 2012.

[20] See Financial System Report: September 2011, published in October 2011, p. 12.

the debt ceiling −which reached a climax in July of last year− made it clear that sovereign debt holders are not only exposed to the possibility of insolvency on the part of issuing governments, but they are also subject to risks of political nature. Indeed, once the presidential election has passed and the new Congress resumes the fiscal debate, such risk may be revived at the end of this year by the fact that once again the government would reach the ceiling approved by Congress. A new conflict of this nature would confirm that American policymakers are rather more concerned with domestic affairs than with providing international financial markets with a risk-free asset.

iii. Fiscal consolidation

According to the Congressional Budget Office's baseline projections, by the end of the 2012 fiscal year, US net public debt held by the public will total 11.318 trillion dollars, accounting for 72.8 percent of GDP; this ratio will reach a maximum level of 76.6 percent during the 2014 fiscal year and will decline gradually afterwards. Nevertheless, such scenario, designed as a mere benchmark, assumes there won't be any changes to current tax policies, that is, that the fiscal cliff will occur. Under the Office's alternative fiscal scenario, which embodies the assumption that most tax and spending policies will be continued, the public debt-GDP ratio follows a completely different path: it would exhibit an upward trend, exceeding 80 percent by fiscal year 2012 and growing indefinitely thereafter.

Such a divergent path would be unsustainable and would bring about a serious crisis. However, the path suggested by baseline projections is not desirable either, given the huge short-term costs imposed by the fiscal cliff. Therefore, the United States are in need of a structural reform in public finances, that will enable the adjustment of long-term disequilibria, without imposing disproportionate sacrifices in the short run. This fiscal consolidation should encompass measures to both make public spending viable and bring tax collection to the levels observed in other developed countries. The structural reform is in hands of the US Congress and will demand that the Democrat and Republican parties reach definitive agreements. Otherwise, tensions in financial markets will only continue to grow over time, putting the reserve currency status of the dollar in peril, and hence, the prerogative to obtain inexpensive funding. Given the not inconsiderable current funding needs of the US economy, an increase in interest rates would translate into a substantial increment in the country's financial costs.

In this context, the Fed Open Market Committee stated at its mid-September 2012 meeting that the economy had been growing at a moderate pace over the last months, thus leading to a high unemployment rate and a slow pace of job growth. Additionally, it expressed concerns that, without the stimulus of additional policies, US economic growth could be insufficient to generate a sustained improvement of labor conditions. Moreover, it pointed out that current global financial market conditions still pose a downside risk for economic activity, and predicted that medium-term inflation in the US will oscillate around or even below the 2.0 annual target. That said, the Committee agreed to put an additional monetary stimulus in effect, in order to promote economic recovery and job creation, consisting of additional 40-billion monthly purchases of mortgage-backed assets issued by US government agencies. For the same purpose, it also committed to continuing through the end of the year the program that extends the average maturity of the Federal Reserve's holdings of securities −announced last June−, and to reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities. With these actions, the Committee intends to put downward pressure on longer-term interest rates, support the mortgage market and help make financial conditions more accommodative.

The weakening of global economic activity

The surge in optimism observed during the first quarter of this year, boosted by measures implemented by the ECB and actions announced by Eurozone authorities at the end of last year, had already vanished by the second quarter. The revival of financial tensions across Europe and the release of diverse indicators showing that the pace of growth of both developed and developing countries had slowed down brought about not only a downward revision of growth forecasts for the global economy for this year and next year, but also a moderation in capital inflows toward developing countries

At the beginning of October 2012, the IMF published its World Economic Outlook, where it revised global growth expectations downwards from number reported in mid-July 2012 (table 2), which had in turn been revised downward, in regard to those of last April. The estimates presented in October correspond to a base scenario built upon two fundamental assumptions: 1) policymakers in Europe will put into effect a sufficient number of measures to both reduce and keep sovereign spreads at low levels, and significantly restrain capital flows from the periphery to the core, and 2) policymakers in the US will take action to prevent the fiscal cliff, opportunely raise the debt ceiling and implement a comprehensive plan to restore fiscal sustainability. Therefore, it is clear that the risks to global growth foreseen by the IMF remain elevated, for whatever failure to meet these assumptions could cause a new fall in growth expectations.

Table 2
Revision of growth forecasts by the International Monetary Fund
Percent

		Forecasts October 2012		**Difference with regard to July 2012 forecasts** percentage points	
	2011	**2012**	**2013**	**2012**	**2013**
Global economy	3.8	3.3	3.6	-0.2	-0.3
Developed countries	1.6	1.3	1.5	-0.1	-0.3
United States	1.8	2.2	2.1	0.1	-0.1
Eurozone	1.4	-0.4	0.2	-0.1	-0.5
Germany	3.1	0.9	0.9	0.0	-0.5
France	1.7	0.1	0.4	-0.2	-0.5
Italy	0.4	-2.3	-0.7	-0.4	-0.4
Spain	0.4	-1.5	-1.3	-0.1	-0.7
Japan	-0.8	2.2	1.2	-0.2	-0.3
United Kingdom	0.8	-0.4	1.1	-0.6	-0.3
Canada	2.4	1.9	2.0	-0.2	-0.2
China	9.2	7.8	8.2	-0.2	-0.2
Brazil	2.7	1.5	4.0	-1.0	-0.7
Mexico	3.9	3.8	3.5	-0.1	-0.2

Source: World Economic Outlook, IMF, October 9, 2012

United States

Indicators of the US economic activity relative to the second quarter confirm that, during the first half of 2012, a deceleration of economic growth occurred. In contrast with Europe, US growth expectations for this year have remained relatively stable, although those corresponding to 2013 have clearly been revised down. Hence, the quarterly GDP change -seasonally adjusted at annual rates- came down from 4.1 percent in the fourth quarter of 2011 to 2.0 percent in the first quarter of 2012, and then to 1.3 percent in the second quarter of the same year. On the other hand, in September, analysts expected that the US economy would grow at 2.1 and 2.0 percent in 2012 and 2013, respectively, whereas in January of the

same year, the corresponding predictions were 2.2 and 2.6 percent.[21] Less favorable economic conditions derive from the poor performance of labor markets, the moderate growth of industrial production and a drop in consumer confidence, owing to the employment situation and uneasiness in financial markets.

Europe

The Eurozone financial crisis continues to undermine European economic activity. Official estimates show that economic activity in the EU and the Eurozone contracted in the second quarter of this year, after having stagnated during the first quarter.[22] Indicators suggest that the growth of the German economy has diminished and that the French economy has entered into a phase of stagnation, while confirming that the Italian and Spanish economies are in recession. The UK economy joins in, registering a decline for third consecutive time in the second quarter of 2012.[23] Further, predictions of economic contraction for the Eurozone have been revised to the upside for 2012 and 2013.[24]

Developing countries

Growth in developing countries has slowed down due to domestic and international causes. In some countries, a slower loans growth is noticeable, which could be heightened by global bank deleveraging. On the other hand, the deceleration in China and Brazil are particularly noteworthy, with prospects of a continuation of this situation in both countries, despite efforts made by their governments and central banks.

During the second quarter of 2012, the Chinese economy registered an annual growth rate considerably lower than that reported in the first quarter; in fact, the lowest ever since the second quarter of 2009. This resulted in a downward revision of growth expectations for 2012.[25] The Chinese growth deceleration has had repercussions on the economies of its commercial partners and international prices of commodities. Brazil, whose exports' major destination is China, has been hit by this situation, recording a continuous slowdown of growth, reflected in lower growth rates for the secondary and tertiary sectors, and a serious contraction of the primary sector. Analysts have consequently revised the annual growth forecast for Brazil downwards at around 1.6 percent. If this were the case, Brazil would turn out to be one of the less thriving economies in the region.[26]

As of the second quarter of 2011, a gradual capital outflow from emerging economies has taken place, both in stock and money markets, as institutional investors seek refuge in safe-haven assets. This reversed flow is greatly due to the deterioration of the situation in the European periphery. Nevertheless, the trend reversed during the first quarter of 2012, thanks to measures enforced by the ECB to provide

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[21] Blue Chip Economic Indicators, October and January 2012. In 2011, the US annual growth rate was 1.8 percent.

[22] The seasonally adjusted GDP of countries in the Eurozone (17) and the EU (27) decreased 0.2 percent during the second quarter of 2012, and 0.1 with regard to the previous quarter (both rates were 0.0 during the first quarter). Compared to the same period of the previous year, during the first quarter, the seasonally adjusted GDP declined 0.5 percent in the Eurozone and 0.3 in the EU, whereas in the first quarter the rates were 0.0 and 0.1 percent, respectively (Eurostat, September 6, 2012).

[23] During the second quarter of 2012, the seasonally adjusted GDP in the UK fell 0.5 percent in regard to the previous quarter, whereas in the first quarter of 2012 and the fourth quarter of 2011 it declined 0.3 and 0.4 percent, respectively (Eurostat, September 6, 2012).

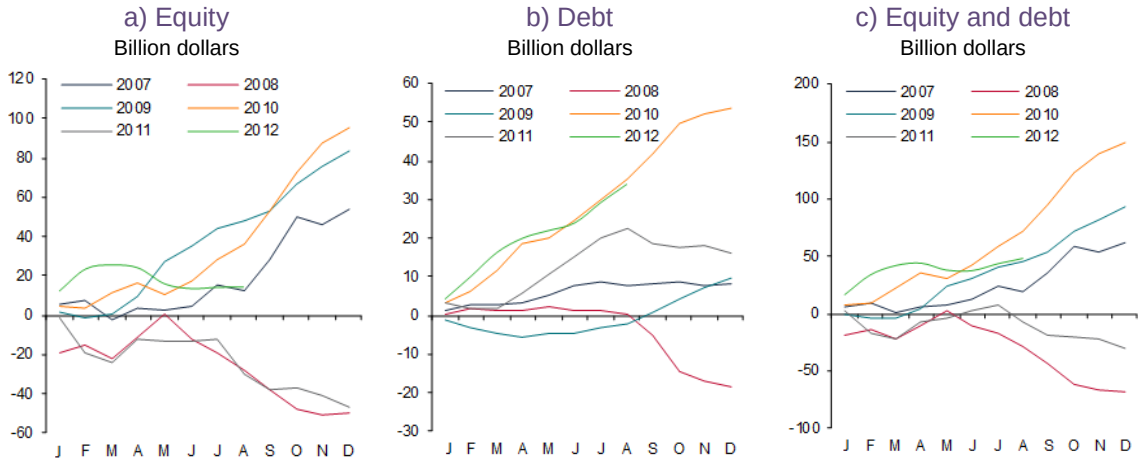
[24] In October 2012, predictions for GDP annual growth in the Eurozone ranged between -0.5 and 0.2 percent for 2012 and 2013, respectively; in last January, the same figures were -0.3 and 1.0 percent (Consensus Economics, Inc., *Consensus Forecast*).

[25] China's YoY GDP grew 7.6 percent during the second quarter of 2012, after having recorded an increase of 8.1 percent in the first quarter of the year and 8.9 percent during the last quarter of 2011. In October 2012, analysts expected the Chinese economy to grow 7.7 and 8.1 percent in 2012 and 2013, respectively. Last April, those figures were 8.4 and 8.5 percent, respectively (Consensus Economic Inc., *Asian Pacific Consensus Forecast*).

[26] Consensus Economic Inc., *Latin American Consensus Forecast*, September. In June, the Brazilian government announced a stimulus package to boost the domestic auto industry, which included temporary tax cuts on auto purchases and lower reserve requirements for banks, so as to promote loans growth for vehicle acquisitions.

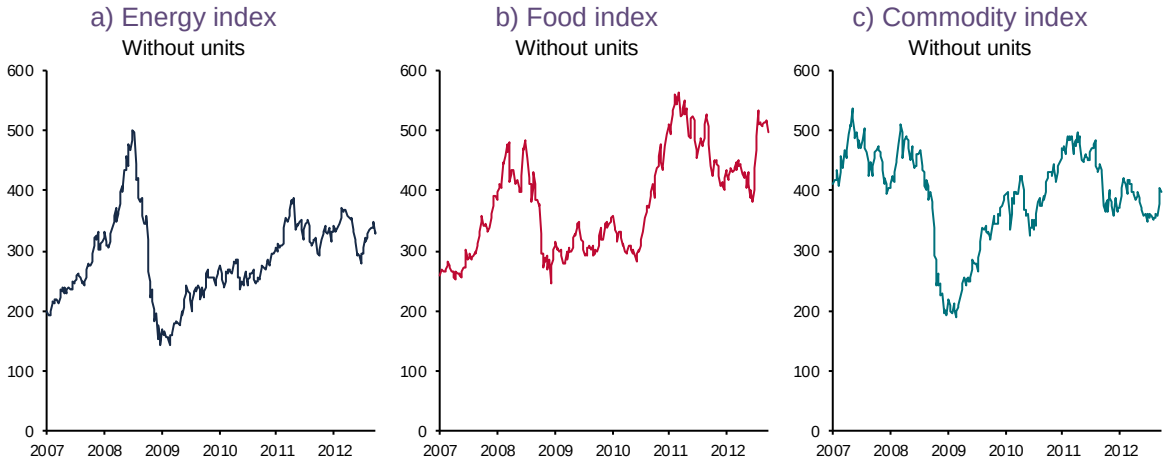
liquidity and the announcement of new EU agreements at the end of 2011 (box 1). These events had a positive, though temporary, impact on financial markets, thus allowing developing countries to receive substantial capital inflows. However, as of the second quarter of 2012, short term capital inflows to developing countries diminished again (graph 6), raising fears of a future reversal in such flows. In this highly-sensitive environment, the recent announcements made by the ECB and the Fed have contributed to exacerbating uncertainty even more.

Graph 6
Cumulative capital flows to developing countries



Figures as of August 2012
Source: EPFR Global

Graph 7
Energy, food and commodity indexes



Figures as of September 2012
Source: Bloomberg (S&P GSCI Index)

The high volatility associated to capital inflows toward developing countries has affected foreign exchange rates. Given the tight interconnection among international financial markets, events in one country or region have nearly immediate effects on financial markets in different regions. These trends have complicated the conduction of monetary policy in developing countries. On the other hand, recent signs of a slowdown in the global pace of growth have generated a decline in commodity prices, thus

offsetting inflationary pressures in economies receiving capital inflows (graph 7). In response to this situation, some countries like Brazil, Indonesia and Thailand have adopted measures to isolate their economies from the higher volatility related to capital flows; yet, some of them are marked by a protectionist bias.

2.1 Domestic environment

During the first half of 2012, the Mexican economy was relatively resilient in the presence of high volatility and uncertainty in international financial markets, resulting from the existing difficulties in the Eurozone and the decelerating world economy. Despite adverse global economic conditions, the domestic economic activity continued to exhibit a positive trend and remained significantly unaffected by the international context (graph 8a). It is worth mentioning that, during the third quarter, the Mexican economy continued to grow, though at a slower pace. Manufacturing exports as well as some components of the domestic demand were evidently affected by the disadvantageous international economic environment.

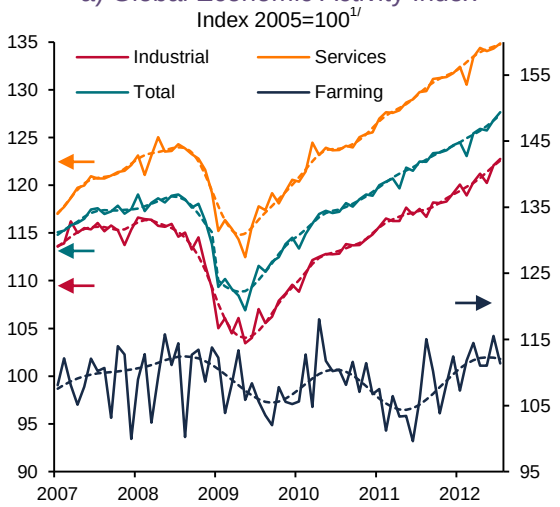
The performance of the Mexican economy during the first half of 2012 reflected both the impetus provided by the external demand to manufacturing production and the domestic demand momentum. Although a slowdown in external demand had been registered by the end of 2011, it picked up during the first half of 2012, fueled by the more positive performance of US industrial activity and the depreciation of the real exchange rate, compared to the same period last year. The external demand upswing was mainly driven by the US economy, whereas manufacturing exports to other destinations increased (graph 8b).

On the other hand, even though domestic expenditure exhibited a relatively lower growth rate than that of the external demand, it kept to a growing path. It should also be noted that private consumption sustained an uptrend, although some consumption determinants displayed certain weakness, as is the case with average real wages, whose negative variations affected the evolution of the real wage bill and family remittances. Yet, other variables, like consumer loans exhibited a more positive performance (graph 9).

Gross fixed investment showed an upturn during the first half of 2012 (graph 10a), mainly due to the impetus of investment in machinery and imported equipment (graph 10b). It appears that investment growth would partially be a reflection of the fact that the installed capacity in the manufacturing industry has been recording an upward trend, returning to pre-crisis levels. Lastly, during the first half of the year, the current account balance remained at moderate levels, in a context where the economy was comfortably fit for tapping funds to finance it (graph 10c).

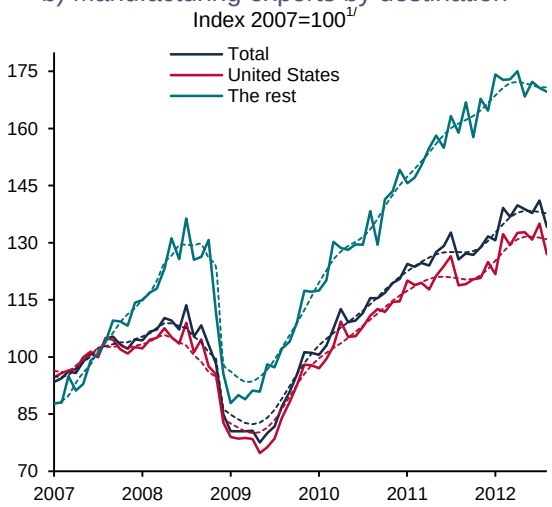
Graph 8
Global Economic Activity Index and manufacturing exports

a) Global Economic Activity Index



Figures as of July 2012
Source: System of National Accounts, INEGI
1/ Trend and seasonally adjusted figures

b) Manufacturing exports by destination



Figures as of August 2012
Source: Banco de México

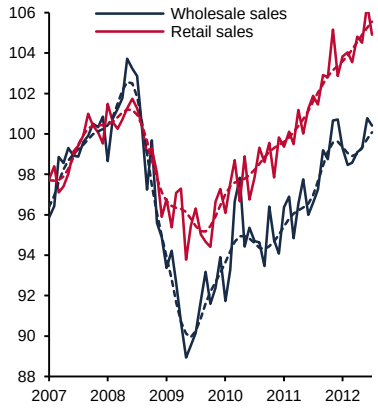
A series of supply shocks in recent months increased prices of some food products, particularly the non-core price sub-index, and led to a considerable rise of headline inflation. Hence, headline inflation surpassed the upper limit of the variability interval by around 3 percent and has remained in high levels for several months. In this regard, Banco de México has already stated it estimates this inflation increase to be temporary, given the transitory nature of the aforesaid shocks, and that both core and headline inflation will resume a downtrend in the rest of the year. Nevertheless, the central bank also warned that, should these shocks persist –however transitory they may be−, and in the event an expected trend reversal does not occur, it would harden its monetary stance.[27]

It follows that, despite the impact of a relatively adverse international environment, the Mexican economy maintained its pace of growth during the period covered by this Report. Growth was based on its internal and external components, while the current account balance remained moderate. This performance is a consequence of sound macroeconomic fundamentals and a strong banking system. Henceforth, as explained in subsequent chapters, the herein described factors have given rise to a considerable expansion of bank and non-bank credit and significant capital inflows that have complemented the domestic financing needs of both the private and public sectors.

[27] For more details, see the Monetary Policy Announcement of October 26, 2012.

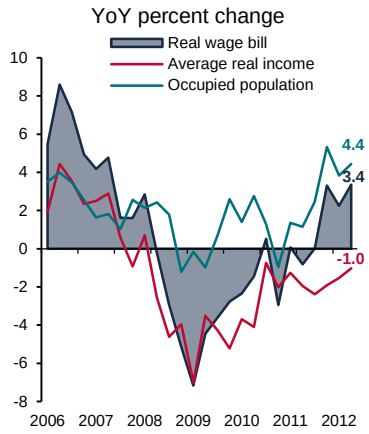
Graph 9
Consumption determinants and indicators

a) Commercial Establishment Sales



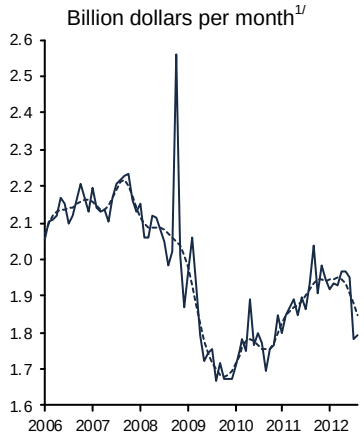
Figures as of July 2012
Source: Produced by Banco de Mexico with data pertaining to the Survey on Commercial Establishments, INEGI.

b) Total real wage bill 2/



Figures as of the second quarter of 2012
Source: Calculations done by Banco de México with data pertaining to ENOE, INEGI.

c) Family remittances

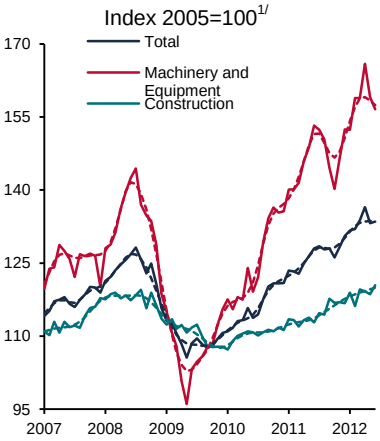


Figures as of August 2012
Source: Banco de México

1/ Trend and seasonally adjusted figures
2/ Figures as of 2011 are preliminary and based on populations estimates by the INEGI

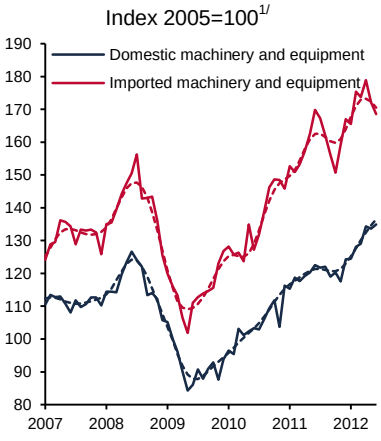
Graph 10
Investment indicators and current account

a) Investment and its components



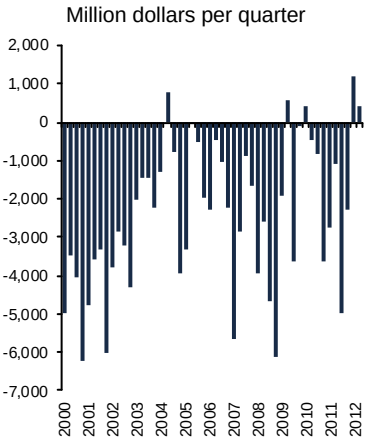
Figures as of June 2012
Source: Produced by Banco de Mexico with data pertaining to the System of National Accounts, INEGI.

b) Domestic and imported machinery and equipment



Figures as of June 2012
Source: Produced by Banco de Mexico with data pertaining to the System of National Accounts, INEGI.

c) Current account



Figures as of the second quarter of 2012
Source: Banco de México

1/ Trend and seasonally adjusted figures

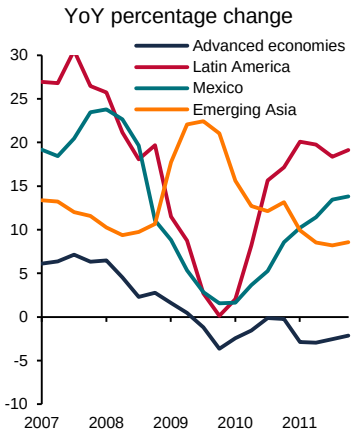
3. Financial intermediaries

3.1 Financial system structure

Despite an overly adverse and complex international environment, during the period covered by this *Report*, the main financial intermediaries that operate in our country have continued to grow and promote economic activity. During the first half of 2012, total financing to the non-financial private sector and households has sustained the growth path that began in mid-2010. As of June 2012, the real annual growth rate of financing to the non-financial corporate sector was 10.2 percent. Similarly, credit to households presented a real annual growth rate of 12.6 percent over the same period, fueled by the consumer credit's momentum. These growth rates offer a stark contrast to the credit contraction experienced in developed countries and the more feeble activity in some emerging economies (graph 11).

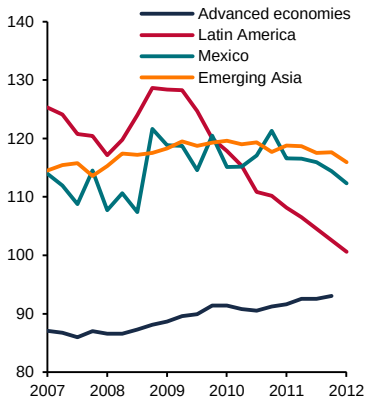
Graph 11
Financial system indicators by groups of countries[1/]

a) Depository institutions' financing to the private sector[2/]



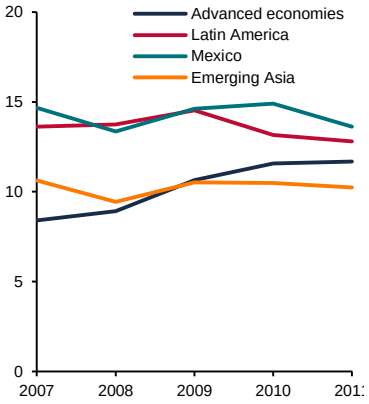
Figures as of December 2011
Source: IMF, ECB and Haver Analytics

b) Depository institutions' total deposits to total credit[3/]



Figures as of March 2012, except for advancec economies as of December 2011
Source: IMF, Haver Analytics and local authorities

c) Regulatory Tier 1 Capital to Risk-Weighted Assets



Figures as of December 2011
Source: IMF

1/ Each group's weighted average was calculated using the respective countries' GDP. The advanced economies group includes Australia, Canada, Japan, UK, United States and the Eurozone; Latin America includes Argentina, Brazil, Chile, Colombia and Peru; emerging Asia includes China, India, South Korea, Malaysia and Singapore.
2/ Financing to the non-financial private sector (non-financial companies and households) includes loans, securities, stock and other capital categories.
3/ The total deposits to total credit ratio was calculated using similar definitions for the variables of different countries. However, definitions may present differences among countries.

Mexican financial intermediaries' progress, strength and sound performance can be explained, among other factors, by the prevailing macroeconomic conditions of stability in recent years. This environment has been characterized by moderate inflation, economic growth, balanced external accounts and low levels of public debt as a percentage of GDP. All this is a result of prudent fiscal and monetary policies, as well as of the strict financial regulation and oversight and the financial reforms undertaken over the last fifteen years in order to foster the development and depth of domestic financial markets. This stable macroeconomic environment is also reinforced by a floating exchange rate regime and an international reserve accumulation policy aiming at mitigating the economy's and domestic financial system's vulnerability to external shocks. The floating regime contributes to eluding disequilibria in the external accounts, while providing greater certainty to both domestic and foreign investors that the exchange rate is neither far from its medium-term equilibrium nor ceases to be at any time a reflection of the prevailing

circumstances in financial markets. The exchange rate parity is supported by a deep and liquid foreign exchange market.[28]

On the other hand, the international reserve accumulation policy has made it possible to record a balance of 160.9 billion dollars as of October 26, 2012. This policy is backed by a precautionary credit line from the IMF consisting of special drawing rights for 47.3 billion pesos,[29] which means the central bank can draw on a significant amount to face up to the unfavorable and complex current global environment. Importantly, the international reserve accumulation policy is based on transparent mechanisms having no distorting effect on the exchange rate determination, what differs from other central banks' strategies.

Characteristics of major intermediaries and prudential measures to bolster commercial banks' solvency

The regulatory framework reforms implemented in the wake of the 1995 banking crisis have played a major role in bolstering the financial environment. Thus, commercial banks' solvency is based on capitalization rules that since 2001 prescribe that assets without the capacity to absorb losses, such as goodwill or investments in other financial entities, should be deducted from capital –this obligation was included in the Basel III agreement−. Commercial banks also possess a loan loss coverage ratio[30] of nearly twice as much the amount of non-performing loans. Moreover, an important part of these reserves is determined on the basis of expected losses rather than realized losses. The Mexican banking sector displays adequate levels of liquidity, and must follow foreign exchange position rules and keep liquid assets in dollars, on the basis of debt maturity and foreign-currency-denominated asset-liability mismatches.

Furthermore, the Mexican bank loan portfolio is funded by local deposits: the deposits to total credit ratio is higher than 100 percent (graph 11b).[31] Hence, commercial banks' funding, especially in the case of larger banks, is retail-deposit-based, a situation that differs from some E.U. countries and other regions of the world where the largest banks have used wholesale funding to finance their rollout, sometimes from abroad. Consequently, in Mexico, corporate and household credit has expanded on solid and stable bases. At the same time, banks have been relatively less impacted by liquidity crunches in financial markets.

A significant share of the Mexican banking business is held by global bank affiliates (table 4), all the more important given the particular effect of the international financial crisis on that segment. Nevertheless, the features of the current affiliate model in Mexico and the adopted regulatory measures have shielded the Mexican banking sector from the global crisis impact. The affiliate model applies the same rules and oversight procedures to all banks established in Mexico, regardless of their shareholders' nationality or specific characteristics. In this manner, all foreign affiliates must count on capital, reserves and liquidity of their own.

With the purpose of protecting financial markets −in the event of any bank's foreign matrix failure− Mexican authorities have identified possible pathways of contagion. The results of this analysis showed that funds could be transferred from subsidiaries to parent companies through two pathways: an excessive increase in related loans or a massive transfer of funds at non-market prices. Even though such an eventuality has not occurred yet, authorities decided to reinforce prudential measures equally applicable to all banks in Mexico, by placing a limit of 25% of Tier 1 capital to risk exposures with related parties.

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[28] The peso-dollar foreign exchange spot market traded a daily average of 18.158 billion dollars in Mexico and other countries, thus enabling to carry out transactions 24 hours a day (Source: Bank for International Settlements).

[29] Equivalent to approximately 72.8 billion dollars.

[30] Loan loss provisions for non-performing loans.

[31] Based on demand and term deposits in hands of the public to loans to the non-financial private sector

Transactions included in the exposure calculation comprise loans, deposits, securities, creditor net positions for repos, security loans and derivative transactions. Similarly, in order to avoid asset and liability transfers between related parties in different conditions from those prevailing in the market, Banco de México issued a circular in October 2012 requiring prior authorization for asset transfers and other transactions exceeding 25% of Tier 1 capital in one year between banks operating in Mexico and relevant related parties[32]. Just like other financial authorities, the central bank is willing to take all necessary steps to preserve the Mexican banking sector financial strength, including foreign bank subsidiaries, from potential financial stability threats.

Regarding pension funds[33] –the second largest financial intermediary in the country−, are subject to regulation that determines both loan portfolio percentages that can be invested in different instruments and limits to total risk. It should be noted that pension and mutual funds must appraise their assets every day. The insurance sector, in turn, has sustained growth in an increasingly competitive environment, fueled by a solid and solvent financial position. This includes the preservation of suitable reserve levels to cope with the catastrophe risks Mexico is particularly exposed to.[34] Stress tests undertaken by the Insurance and National Surety and Insurance Comission (CNSF) demonstrated that the insurance sector can absorb the effects of highly adverse scenarios that may trigger significant drops in interest rates and considerable jumps in claims ratios.

Corporate structure

The Mexican financial system is characterized by liquid and deep, well-developed financial markets, and comprised of modern and efficient intermediaries that are profitable and well capitalized. Commercial banks are the most important intermediaries, followed by pension fund (siefores) and mutual fund managers (table 3). Most intermediaries are part of financial groups; this turns out to be beneficial for investors by providing them with greater diversification and different sources of return (tables 4 and 5). Moreover, the financial system is open to foreign investment and to the entry of new players (table 4).

Financial groups hold or manage approximately 66 percent of the Mexican financial system's total assets (this figure climbs to 74 percent when only private intermediaries are taken into account), the banking segment being their main activity (table 4). In recent years new corporate structures have been developed, under which stock held by financial intermediaries or a financial group is controlled by a non-financial controlling company or non-financial corporation. These controlling companies, which operate outside the financial regulatory framework, may devote themselves to commercial activities or to investing in other commercial firms, giving rise to potential conflicts of interest. These may arise as a result of an unclear division between the financial and commercial businesses. Additionally, the corresponding regulation in force does not allow for the prudential supervision of the group's components at a consolidated level; rather, the oversight is currently performed according to the sector the companies

[32] Relevant related parties are defined in the relative regulation as: i) individuals directly or indirectly controlling at least two percent of the capital of an institution, its controlling company or financial entities of the financial group where the former is integrated, ii) members of the Board of Directors of the financial entities referred hereto, iii) spouses and relatives related by virtue of either direct consanguinity or affinity in the first degree and collateral consanguinity or affinity in the second degree, iv) individuals other than officers and employees with the power to sign on behalf of the institution, v) officers and directors of legal persons in which the institution or controlling company of the financial group directly or indirectly controls 10 percent or more of the capital.

Similarly, the definition of relevant related parties encompasses all legal persons that are members of a financial or corporate group where commercial banks or those institutions with which the former have business links are integrated, and trusts in which the commercial banks or institutions referred hereto are trustors or trustees. In that regard, the definition of corporate and financial group is set forth in sections I and V of article 22 Bis of the Law on Credit Institutions, and that of business links in section III of article 45 of said Law.

[33] Pension funds manage workers' resources, as a result of reforms to the pension system which evolved from being based on definite benefits to the current one based on individual accounts. In July 1997 this regime change started for private sector workers affiliated to the IMSS and later in the same year for public sector workers affiliated to the ISSSTE, CFE and IMSS workers themselves. Reforms to the pension system were undertaken to make it financially viable in the future, and have generated savings in the actuarial deficit of 52 percent of GDP.

[34] See the note on catastrophe reserves in subsection 3.4 Insurance companies.

belong to.[35] Under this model, the regulatory authority supervising the group's dominant entity will be that entitled to and responsible for inspecting and overseeing the controlling company. Hence, the controlling company will be subject to general rules and provisions mandated by such authority, specifically rules for asset valuation.

[35] Financial groups are governed by the Law Regulating Financial Groups (LRAF). For their integration, previous authorization by the Ministry of Finance and Public Credit (SHCP) is obligatory.

Article 28 of the Law Regulating Financial Groups sets forth the agreement of responsibilities among the group members and the controlling company. This article establishes that the controlling company and each of the group entities must subscribe an agreement under which the controlling entity shall be jointly and unlimitedly liable for any member's losses, even for those made before their incorporation to the group. Should the controlling company's assets were not enough to meet obligations, the losses of the credit institution that belongs to said group shall take priority over those of other members, which shall be covered on a pro-rata basis until all resources are exhausted. Additionally, the agreement specifies that none of the group's financial entities be liable for the controlling company's losses or for those of other group members.

Table 3
Financial institutions that make up the Mexican financial system

	Number of entities	Share in total assets (%)	Real annual growth rate of assets (%)
Commercial banks[1/]	46	48.6	2.8
Siefores (afores)[2/]	81 (13)[3/]	15.0	14.7
Mutual funds (managers)[4/]	574 (58)[5/]	11.8	6.5
Development banks[6/]	10	9.7	8.5
Insurance companies	103	6.5	12.3
Surety companies	15	0.2	4.1
Brokerage firms	34	4.6	21.9
Regulated sofoles and sofomes[7/]	41	0.8	-8.5
Unregulated sofomes[8/]	3,763	1.7	-24.8
Auxiliary credit organizations[9/]	33	0.1	-1.3
Popular savings and credit entities[10/]	231	1.0	6.0
Memo: Housing institutes[11/] and others[12/]	*3*	*n.a.*	*n.a.*

The number of financial entities refers to those authorized as of September 2012; some are not operating. Their share of total assets corresponds to June 2012 and the real growth rate refers to June 2012 with regard to the same month a year earlier.
Source: Banco de México, SHCP, CNBV, CNSF, Consar, Condusef and AMFE

1/ Commercial banks' total assets include regulated sofomes that are consolidated with the respective bank when they are subsidiaries. In December 2008, the CNBV included the leasing company Inbursa, a regulated sofom that manages card credit granted by Inbursa; however, this sofom is not a bank's subsidiary, and as of March 2012 the CNBV stopped consolidating the bank's financial data with those of the sofom.
2/ Overall, pension funds (Afores) manage a total of 81 Siefores.
3/ The number in brackets refers to the number of Afores and the number outside the brackets refers to the number of Siefores.
4/ Mutual fund management companies administer 572 funds in all. Of the 60 investment fund operators, 4 are multiple banks, 10 are brokerage firms and 46 are mutual fund management companies. Asset information corresponds to the balance sheets of investment funds, not management companies.
5/ The number in brackets refers to the number of mutual fund management companies and the number outside the brackets refers to the number of mutual funds.
6/ Includes development banks and trusts (FIRA, FOVI, Fonhapo, Fifomi and Financiera Rural).
7/ The share of total assets considers sofomes that are regulated because they belong to a financial group but do not consolidate their assets with a multiple banking institution (15 out of 22). Those that do consolidate their assets with banks are included in the commercial banking heading (6 out of 22); there is also one that belongs to the development banking sector.
8/ Figures referring to the number of unregulated sofomes come from a Condusef record of them. However, information about assets only contains information from those entities associated with the AMFE, a sector trade association which to date has 54 unregulated members. The real-term drop in assets recorded over the last year can be explained by some sofomes' slower activity, the dissolution of some others and a reduction in the number of entities reporting data. Further, the AMFE includes other companies granting loans not incorporated as sofomes.
9/ Includes general deposit warehouses, financial leasing companies, factoring companies, and money exchanges.
10/ Includes savings and loan associations (SLA), popular finance corporations (sofipos), savings and loan cooperatives (socaps) and credit unions.
11/ Infonavit and Fovissste
12/ Infonacot

Table 4
Financial system's corporate structure

	Commercial banks		Afores		Insurance Companies		Brokerage firms	
	Number	(%) assets[1/]	Number	(%) assets1/	Number	(%) assets1/	Number	(%) assets1/
I. Affiliates of foreign financial entities	**16**	**72.2**	**5**	**64.0**	**58**	**63.2**	**14**	**28.5**
a. belonging to a financial group (FG)	11	68.7	2	31.3	9	21.9	10	26.7
b. not belonging to a FG	5	3.6	3	32.7	49	41.3	4	1.8
II. Controlled by local individuals	**20**	**23.9**	**4**	**14.6**	**24**	**23.4**	**16**	**66.2**
a. belonging to a financial group (FG)	9	20.9	3	12.3	10	17.8	5	35.8
b. not belonging to a FG	11	3.0	1	2.3	14	5.6	11	30.3
III. Controlled by non-financial entities	**10**	**3.9**	**4**	**21.4**	**21**	**13.4**	**4**	**5.3**
a. belonging to a financial group (FG)	3	1.8	0	0.0	0	0.0	3	5.26
b. not belonging to a FG	7	2.1	4	21.4	21	13.4	1	0.03
Total	**46**	**100**	**13**	**100**	**103**	**100**	**34**	**100**

The number of financial entities refers to those authorized as of June 2011; some are not operating. Their share of total assets corresponds to June 2011.
Source: Banco de México, CNBV, Consar, CNSF and Condusef
1/ Market share measured as a percentage of each intermediary's total assets.

Both the emergence of complex financial corporate structures and the proliferation of non-banking financial intermediaries controlled by non-financial entities or financial groups suggest the convenience of moving towards a consolidated prudential regulatory framework for financial groups. The lack of such regulation contrasts with the approach that has been promoted internationally.[36] Within the regulatory framework currently in force, it is not possible to demand capital requirements from banks and subsidiaries devoted to granting loans at a consolidated level. Particularly, this is the case for regulated sofomes (sofomes ER), which emerged when one of the bank's business branches split within the financial group.[37]

In a consolidated regulatory framework, a financial group is considered as a single economic unit, in such a way that all group members' exposure to common risk can be assessed and regulated as one, while assessing risk exposure at an individual level too. Such a regulation would allow an equivalent regulatory treatment at a consolidated level for similar transactions, irrespective of the financial intermediary recording those transactions. Finally, the regulation must provide guidelines for transactions carried out among financial intermediaries within the same group.

[36] The LRAF prescribes that controlling companies shall only acquire direct or contingent debt and offer their property as collateral when related to the agreement of responsibilities set forth in article 28, among others. The Law also mandates that the controlling company's paid-in capital and capital reserves shall be exclusively invested in stock issued by other group members, real property, furniture and equipment strictly indispensable to fulfill its mission, securities issued by the Federal Government, bank fund-gathering instruments and other investments authorized by the SHCP and securities of at least 51 percent of foreign financial entities' equity, subject to previous authorization by the SHCP. The Law also establishes that under no circumstances shall transactions relative to the group members' operation be made through the controlling company offices.

[37] Yet, ER sofomes are subject to the same prudential regulation as banks, particularly regarding capital requirements.

Table 5
Profitability of financial intermediaries and non-financial firms quoted on the Mexican Stock Exchange (BMV)[1/]

Sector	Return on equity (Net profit as a percentage of equity)		
	2010	2011	Jun-12
Commercial banks	13.4	12.5	13.4
Afores[2/]	26.6	27.7	29.1
Mutual fund managers[3/]	31.4	24.5	24.4
Brokerage firms	20.7	14.3	18.2
Insurance companies	15.4	14.9	17.6
Other financial intermediaries[4/]	7.0	5.8	4.1
Regulated sofoles and sofomes	2.4	5.9	8.7
Unregulated sofomes	-1.9	n.d.	n.d.
BMV companies	14.8	15.1	14.4

Source: CNBV, Consar, BMV, CNSF and AMFE
1/ Return on equity was calculated using the accumulated result of the twelve previous months, and dividing them by average equity from that period.
2/ Asset and capital figures correspond to the sum of the respective numbers on Afores' balance sheets, not funds managed by Siefores. Funds managed by Siefores also include, besides workers' funds, part of the Afores' capital, which under current capitalization rules must invest them in Siefores.
3/ The numbers correspond to mutual fund management companies, not the funds in which they invest.
4/ Other financial intermediaries include: auxiliary credit organizations (surety companies, deposit warehouses, leasing companies, money exchanges, factoring companies) and popular savings and loan companies (sofipos, socaps, saps and credit unions).

The Mexican financial system has remained solid in the face of the international crisis and the recurrent bouts of volatility associated to high levels of indebtedness in the US and Europe. This solidity is reflected in the high returns registered during the first half of 2012 (table 5). Nevertheless, the economic slowdown −particularly in Europe− and the new requirements to improve the quality of banks' capital are forcing global banks to withdraw from non-core financial businesses, such as the insurance and pension headings. In Mexico, this has been the case for the sale of subsidiaries by certain financial groups in hands of foreign stockholders, with other groups' announcements to follow suit,[38] and the securitization of premises and branch offices for subsequent leasing.[39]

The main reasons why global banks are withdrawing from those business headings are presented below:

i. The need to raise the liquidity and capital adequacy ratio in the matrices.
ii. Basel III capital rules, which will oblige global banks to deduct investments in financial institutions from their capital when consolidating.

[38] For example, ING offered its life insurance business in Asia for sale. In July 2011 it sold its pension fund branch in Chile, Mexico, Peru, Uruguay and Colombia to the South American Investment Group (Grupo Sura) for 3.76 billion dollars. In June 2012, Santander, for its part, closed the sale of its business in Colombia for one billion euros, while in September 2012 it sold 24.9 percent of the Mexican financial group stock for 52.8 billion pesos. Additionally, HSBC sold 42 branches in Colombia, Uruguay, Peru and Paraguay for 400 million dollars to the Colombian financial group GNB Sudameris, that belongs to the Gilinski group; provided all necessary authorizations are obtained, the transaction will be closed between the fourth quarter of 2012 and the first quarter of 2013. Further, April 2012 saw the announcement that the affiliates HSBC Insurance (Mexico), HSBC Insurance (Asia) and HSBC Insurance (Singapore) will sell to Axa their general insurance portfolios in Mexico, Hong Kong and Singapore, respectively, for 494 million dollars. Lastly, BBVA is reviewing purchase offers for its pension fund business in Latin America, including its Mexican afore.

[39] In April 2012, Banco Santander Mexicano and Fibra Uno agreed to purchase 220 buildings owned by Banco Santander for 3.33 billion pesos, and to lease them immediately afterwards for a 20-year term to the same credit institution.

iii. The economies of scale resulting from bringing different businesses together in the same financial group, along with the economies of scope by virtue of offering diverse financial products and services within the same group, have proved to be lower in practice than expected.

iv. The prevailing regulatory uncertainty of some financial sectors at a global level, specifically the pension heading, derived from both measures adopted by some countries to revert reforms launched in recent years and soaring global pressure to diminish the cost of fees paid by customers.

3.2 Commercial banks

The financial system reorganization and consolidation process continued during 2011 and the hitherto elapsed months of 2012. During the current year, four new banking licenses were granted so far to financial entities that used to operate under a different scheme and have now turned into banks.[40] Commercial banks' assets totaled six billion pesos as of June 2012, which translates into real annual growth of 2.8 percent, lower than that of the same period in the previous year.[41] The real annual growth rate of assets turned out to be much lower than that of the loan portfolio (10.9 percent), as a result of a contraction in investments in securities and available cash.

The stable and profitable Mexican banking system significantly differs from the performance of the equivalent sector in other developed and emerging economies, and is characterized by its moderate growth and prudent loan granting. With the purpose of reducing risks of direct contagion between Mexican subsidiaries of foreign banks and their parent companies, Banco de México has issued a circular requiring prior authorization for significant risk exposures with related parties. This measure aims at complementing the limits placed by the National Banking and Securities Commission (CBNV) in 2011 on credit risk transactions with relevant related persons (RRP).[42]

Profitability

During the first half of 2012, commercial banks' profits were 19 percent higher in real terms than in the same period of the previous year. This increase was driven by a significant improvement in net interest income (YoY 11.9 percent in real terms) and a modest rise in net fee income (YoY 2.9 percent in real terms) (graph 12a). However, the profit increase registered in the first half of 2012 can be attributed to commercial banks' non-recurring income (YoY 54.5 percent in real terms), [43] which account for 38 percent of net profits.

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[40] Banks authorized comprise Banco Bicentenario that was incorporated before as a credit union, Banco Agrofinanzas that was incorporated as a sofol, Banco Pagatodo and Banco Forjadores that used to operate as unregulated sofomes. These are now part of the commercial banking sector, operating as niche banks, a legal scheme authorized in Mexico in December 2009. Niche banks have limited corporate purposes (sections II and III of Article 2 of general provisions applicable to credit institutions). They are authorized by the CNBV to carry out exclusively some of the transactions specified in Article 46 of the Law on Credit Institutions (LIC), which shall be described in their articles of association. Minimum capital requirements are part of the requisites to operate as a commercial bank, which are determined on the basis of the transactions explicitly mentioned in the articles of association. Minimum capital requirements for niche banks oscillate between 36 and 54 million udis, depending on which fraction (II or III) of the above mentioned article 2 they intend to operate under. The minimum capital requirement for entities aspiring to unlimitedly perform all activities mentioned in Article 46 amounts to ninety million udis (Article 19 of the LIC).

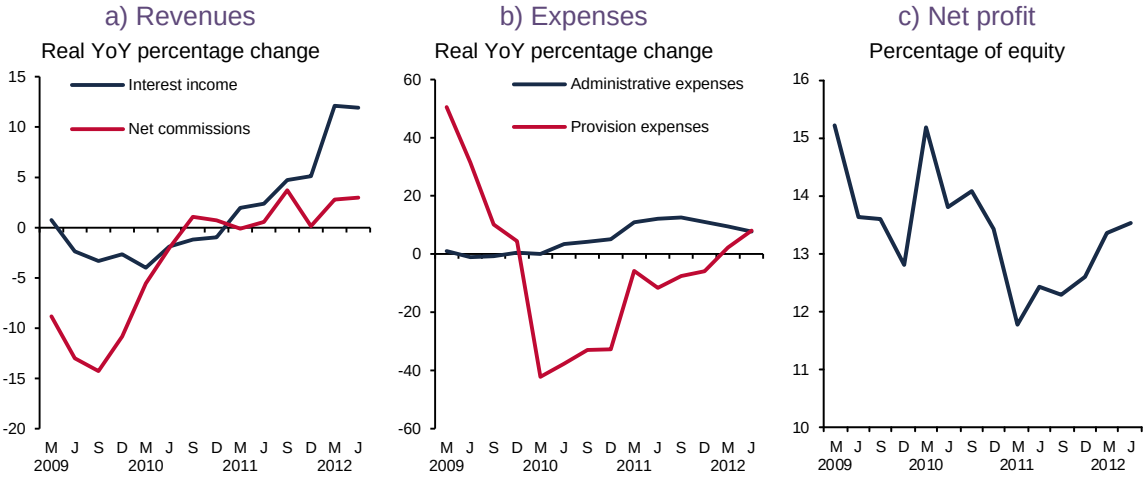
[41] As of March 2012, the CNBV amended the general statement data published on its website (data portfolio, public database and monthly statistical bulletin), so as to correct an adjustment that it had been making to the commercial banks' data as of October 2008, derived from accounting methodology changes in repo operations. Consequently, commercial banks' real annual growth rate differs from the one previously reported. For further information on the adjustment for repos made to banks' assets by the CNBV, see the Statistical Bulletin of December 2008, available on the CNBV website.

[42] The limit prescribes that if the aggregate amount of those transactions exceeds 25% of the bank's Tier 1 capital, it shall be deducted from it.

[43] The following items are registered under non-recurring income (expenses): gains or losses from bank operation concepts other than interest spread, net fees, trading gains (losses), i.e. portfolio recoveries, write-offs, gains(losses) from portfolio acquisition (cession), cancellation of surplus loan-loss provisions, donations, income (expenses) from the awarding of property, loss from furniture depreciation (reversion), goodwill, and other assets; profit (loss) from the valuation of assets and securitizations' future earnings; profit (loss) from the

Meanwhile, trading income, that is, income derived from the sale, purchase and revaluation of securities positions, foreign currency and derivative transactions fell 11.1 percent.

Graph 12
Commercial banks' sources of income and expenses



Figures as of June 2012
Source: CNBV

Figures as of June 2012
Source: CNBV

Figures as of June 2012
Soure: CNBV

With regard to expenses, the creation of loan-loss provisions grew eight percent in real terms, compared to the previous year, and operating expenses displayed a real annual increase of 7.7 percent, a lower rate than that of the previous year (12.2 percent) (graph 12b). The jump in income and the slowdown in administrative and promotional expenses contributed to an improvement in the commercial banks' efficiency ratio (operating expenses to total revenues). The net profit to total assets ratio (ROA) was 1.5 percent in June 2012, while the net profit to equity ratio (ROE) was 13.5 percent (graph 12c).

Solvency

By the end of the first half of 2012, commercial banks recorded a capital adequacy ratio of 15.9 percent −lower than that of the previous year−, owing to an increase in risk weighted assets (RWA) derived from credit growth. Tier 1 capital accounts for 88.9 percent of Mexican banks' net capital, increasingly gaining in importance with respect to Tier 2 capital, thanks to retained profits. Although capitalization levels are well above the required minimum, commercial banks could benefit from an increase in Tier 1 capital to keep up with the pace of loans growth observed in the last two years. Adding another dimension to the situation, there is also the need to substitute current subordinate debt in the medium term, which under Basel III guidelines will gradually cease to be calculated as part of the banks' regulatory capital. However, these future capital needs could be easily covered by banks' profits or by issuing subordinate debt abiding by the CNBV regulation, in accordance with Basel new guidelines (graph 13).

The CNBV has been introducing amendments to the rules for creating loan reserves, so that their levels be determined on the basis of expected losses rather than realized losses.[44] The loan provision

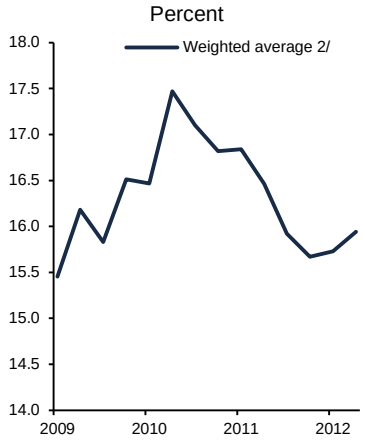
sale of estate, furniture and equipment, among others. As of June 2012, loan portfolio recovery accounted for 18 percent of total non-recurring income.

[44] Rules applicable to revolving consumer loans came into effect it 2009. In 2010 those corresponding to non-revolving and mortgage loans became valid, and further regulation was published to determine loan-loss provisions for state and municipal loans. In the second half of 2012 rules for the rest of loan portfolios came into effect. See Table 2 of *Financial System Report, September 2011.*

coverage ratio for commercial banks reached 190 percent as of June 2012, slightly greater than that recorded in June last year.

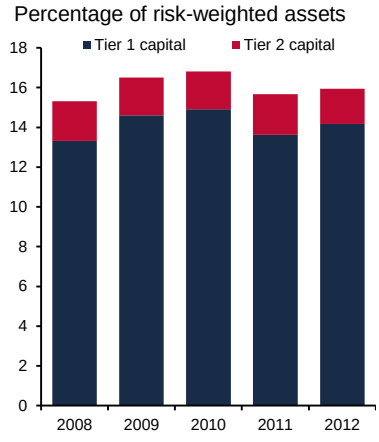
Graph 13
Solvency measures

a) Capital Adequacy Ratio[1/]



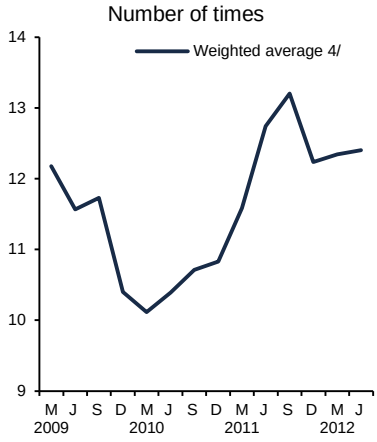
Figures as of June 2012
Soure: CNBV and Banco de México

b) Tier 1 and Tier 2 capital[3/]



Figures as of June 2012
Source: CNBV and Banco de México

c) Asset to equity ratio

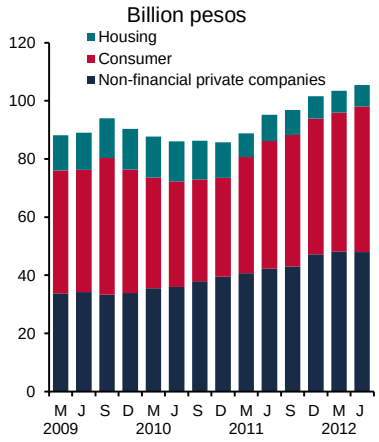


Figures as of June 2012
Source: CNBV and Banco de México

1/ The capital adequacy ratio is calculated by dividing total capital by risk-weighted assets. Under capitalization rules, the ratio of that division should be a minimum of eight percent. Total capital is regulatory capital and comprises Tier 1 and Tier 2 capital.
2/ The weighting procedure is based on the percentage share of individual banks' risk-weighted assets in commercial banks' total assets
3/ Tier 1 and Tier 2 capital at the end of each respective year as a percentage of risk-weighted assets for the same period with the exception of 2012 numbers, which correspond to August.
4/ The weighting procedure is based on the percentage share of individual banks in commercial banks' total assets.

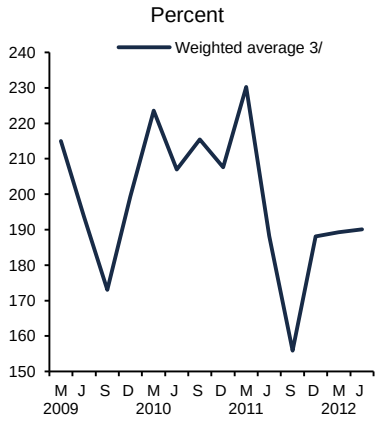
Graph 14
Commercial bank loan-loss estimates and coverage ratio

a) Loan-loss provisions[1/]



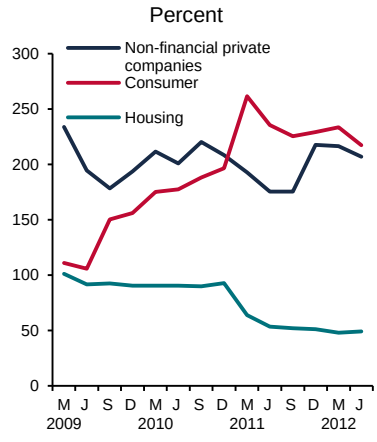
Figures as of June 2012
Source: CNBV

b) Coverage ratio[2/]



Figures as of June 2012
Source: CNBV

c) Coverage ratio by loan portfolio type[2/]



Figures as of June 2012
Source: CNBV

1/ Refers to general loan-loss provisions and does not include additional ones.
2/ The coverage ratio is the balance of loan-loss provisions as a percentage of past-due loans.
3/ Weighted average calculations based on each bank's share of commercial banks' total assets.

Credit risk

Credit to the non-financial private sector has spiked in all sectors, mainly in the corporate and consumer headings, the latter being boosted by personal and payroll loans. In aggregate terms, the main factors that account for credit risk (probability of default, default and concentration correlation) showed a marginal change with respect to June 2011. The probability of default recorded a marginal increase, resulting from the higher risk associated to the mortgage loan portfolio. The probability of default in the case of the consumer and corporate portfolios continued to downtrend, and both the value at risk (VaR)[45] and the conditional value at risk (CVaR)[46] as a percentage of net capital registered lower levels than in the previous year (graph 15).

The adjusted delinquency rate for the non-financial corporate sector has remained stable over the last 12 months, except for consumer loans, which sustained a downtrend. As of the end of June 2012, the adjusted delinquency rate was 2.9 percent for commercial loans, 11.1 percent for consumer loans and 5.4 percent for mortgage loans.

Credit to non-financial private companies

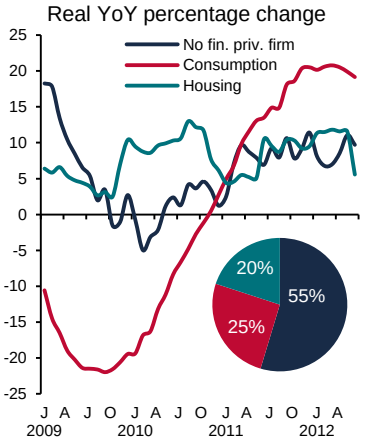
As of June 2012, credit to non-financial private companies recorded a real annual increase of 10.0 percent (graph 15a), driven by a rise in the demand for corporate credit, as shown by the quarterly Survey on Credit Markets by Banco de México (graph 15a). Corporate credit continued to display a high concentration level in both the number of participating companies and companies receiving funds. The seven largest banks' share in the corporate loan segment was 84.2 percent as of June 2012. In the same period, the 800 largest companies accounted for 39.6 percent of commercial bank loans (graph 16c). This concentration has gradually diminished, as a result of the growth in banks' loans to small and medium-sized companies (pymes). This segment has increased its share from 29.8 percent in June 2011 to 32.9 percent in June 2012.

[45] The VaR is the maximum loss a financial institution could suffer from a specific position or portfolio during a precise investment horizon, in the event of a change in risk factors, given a definite confidence level and under normal market conditions. The VaR is calculated by generating risk factor scenarios (interest rates, exchange rates, etc.) based on data recorded in a period of one thousand business days. Once the diverse risk factor scenarios having an effect on the portfolio are generated, the latter is reevaluated using each of the estimated risk factors. Then, losses and profits are estimated, and the results are arranged from greater losses to higher profits; finally, the VaR is calculated based on a selected confidence level (percentile).

[46] The conditional value at risk (CVaR) represents the expected value of the loss when it exceeds the value at risk (VaR), that is, when it exceeds the percentile attached to a specific confidence level from a probability loss distribution of a portfolio of assets subject to credit risk.

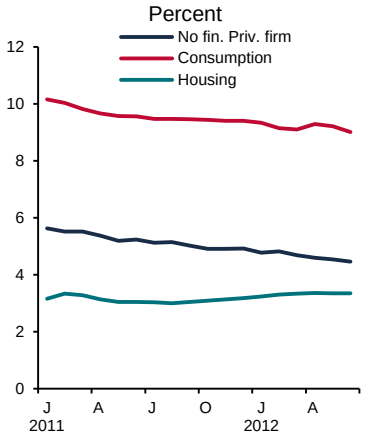
Graph 15
Credit risk indicators

a) Corporate, consumer and mortgage loans



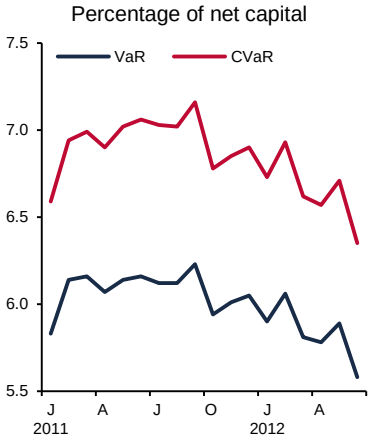
Figures as of June 2012
Source: CNBV

b) Probability of default



Figures as of June 2012
Source: Banco de México

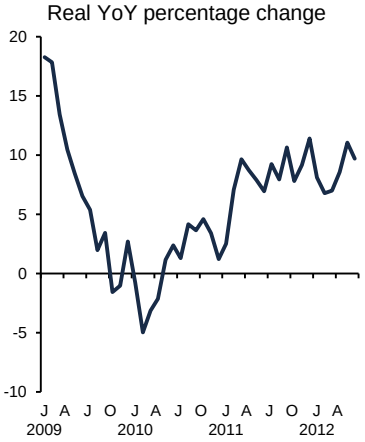
c) VaR and CVaR at a 99.9 percent confidence level



Figures as of June 2012
Source: Banco de México

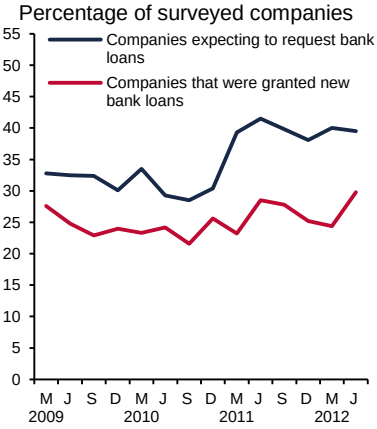
Graph 16
Commercial bank loans to the non-financial private sector

a) Non-financial private companies loans



Figures as of June 2012
Source: CNBV

b) Companies that have been granted bank loans and companies expecting to request them



Figures as of June 2012
Source: Banco de México

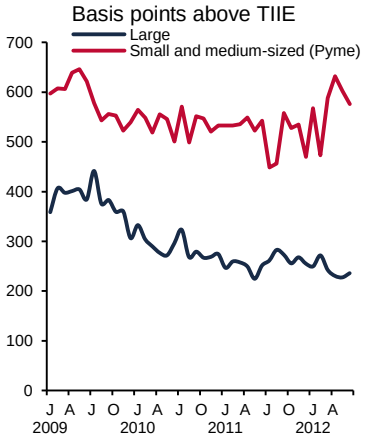
c) Large companies' share in commercial bank loans

Figures as of June 2012
Source: Banco de México

Loan granting conditions have remained nearly the same, with interest rates similar to those observed in 2011. Hence, as of June 2012, the average interest rate spread was 398 basis points with respect to the 28-day TIIE, compared with the 366 basis points in 2011. During the first half of 2012, loan terms came down to an average of 17.6 months. This is the case for loans to large, small and medium-sized companies (graph 17).

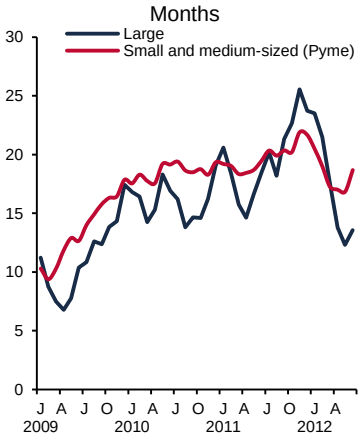
Graph 17
Commercial bank loans granted to the non-financial private sector

a) Granted loans' interest rate



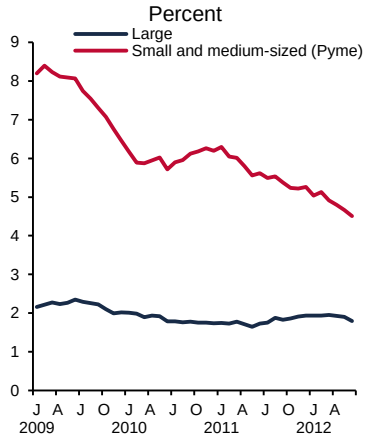
Figures as of June 2012
Source: CNBV

b) Granted loans' average term



Figures as of June 2012
Source: Banco de México

c) Probability of default

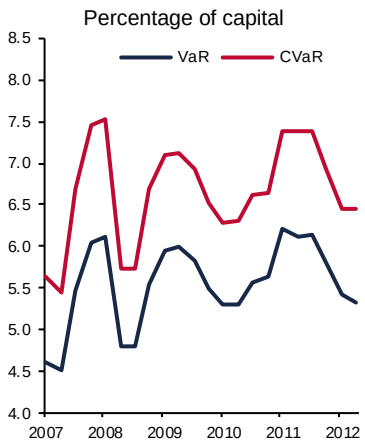


Figures as of June 2012
Source: Banco de México

Corporate loan delinquency has risen since September 2008, when the global crisis started to have tangible repercussions. As of June 2012, the corporate loan delinquency rate was 2.2 percent, in contrast with 1.1 percent in September 2008. The adjusted delinquency rate was 2.9 percent during the first half of 2012, just the same as the previous year's (graph 18). The construction sector was one of the hardest hit segments, as demonstrates a delinquency rate of 4.5 percent as of June 2012 (graph 18c). This sector comprises financing to residential and commercial real estate developers and credit for infrastructure development.

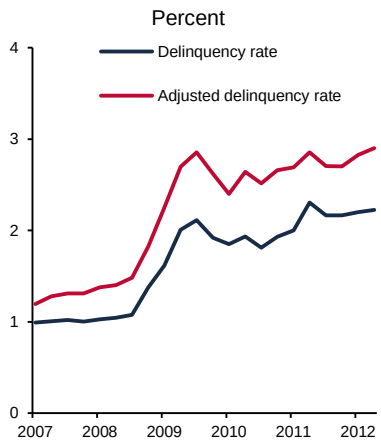
Graph 18
Non-financial private companies credit risk indicators

a) Value at risk



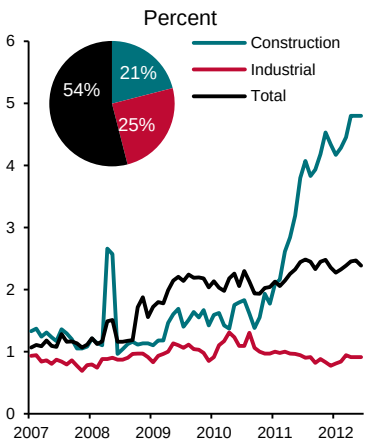
Figures as of June 2012
Source: CNBV

b) Delinquency rate



Figures as of June 2012
Source: Banco de México

c) Delinquency rates of total loans and loans granted to the construction and industrial sectors



Figures as of June 2012
Source: Banco de México

As of June 2012, loans for residential projects accounted for 35 percent of construction loans, whereas commercial projects accounted for only 17 percent. This sector represents 21 percent of total corporate bank loans, although it stands for 44 percent of non-performing corporate loans. While the delinquency rate of loans for infrastructure projects has been steady, that of loans to residential and commercial developments has increased since the beginning of 2009, due to the uncertainty triggered by the adverse economic conditions and the rise in construction costs. Accordingly, as of June 2012, the delinquency rate of loans for residential developments was 7.0, while that of loans for commercial developments was 6.7 percent.

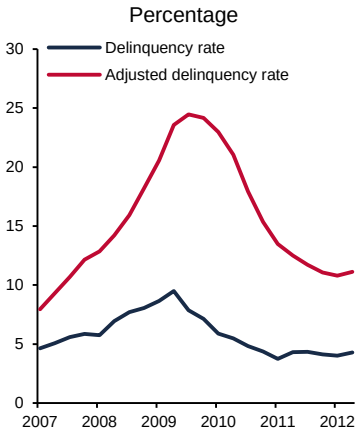
Consumer credit

Commercial bank consumer credit resumed growth in 2010, after a pronounced slowdown caused by high levels of credit card delinquency. By the end of 2010, high growth rates were observed for the consumer loan portfolio. As of June 2012, consumer loans grew at a real annual 18 percent rate. The consumer credit delinquency rate was relatively stable between June 2011 and June 2012, coming up from 4.31 percent to 4.29 percent, whereas the adjusted delinquency rate fell substantially, coming down from 12.5 to 11.1 percent (graph 19a). Far from the consumer loan growth episode that started in 2006 –mainly driven by credit cards−, the current cycle is characterized by a rise in payroll and personal loans, with real annual growth rates of 37.9 and 33.4 percent, respectively, as of June 2012. On the other hand, credit through cards increased 10.9 percent in the same period, while credit for durable goods acquisition (ABCD) jumped 7.3 percent (graph 19b) Thus, personal and payroll loans accounted for 36.8 percent of consumer credit during the first half of 2012. Nevertheless, credit cards continue to be the main consumer credit product −45.3 percent as of the same date (graph 19c).

During the twelve months prior to June 2012, banks issued 1.7 million cards, adding 1.4 million new customers to the market. However, the average number of cards per cardholder decreased to 1.66 percent as of June 2012.

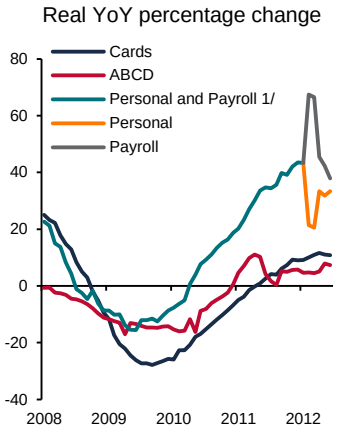
Graph 19
Commercial bank consumer credit

a) Delinquency rates



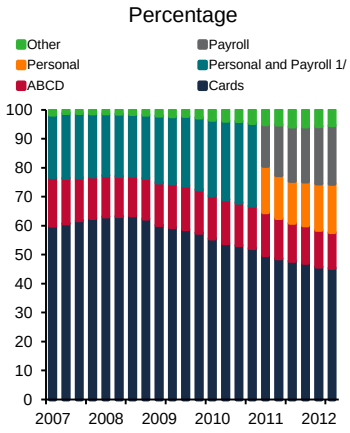
Figures as of June 2012
Source: CNBV

b) Consumer loans



Figures as of June 2012
Source: Banco de México

c) Loan portfolio distribution by credit type



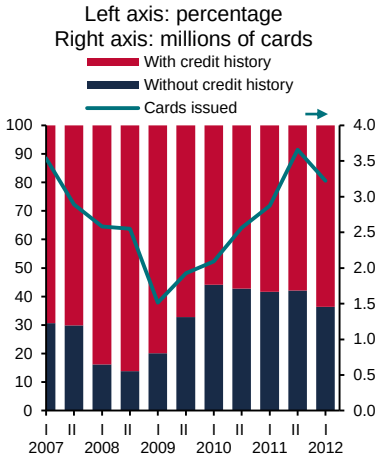
Figures as of June 2012
Source: Banco de México

1/ As of February 2012, personal and payroll loans are reported separately.

Graph 20 offers various indicators measuring credit card risk, such as the percentage of credit cards granted to individuals with and without credit history, the number of credit cards per customer and the utilization ratio. With loan-loss provisions data, it is possible to analyze the evolution of expected loss distributions for different loan portfolios. Graph 22 shows that, as of June 2012, nearly 30 percent of card credit debtors accounted for an expected loss of 0.2 to 0.3 percent of performing loans, whereas that expected loss was concentrated in less than 15 percent of cardholders in the previous year. On the other hand, in lower expected loss ranges, there is a reduction in debtors, and consequently the 2012 portfolio has a higher risk attached than in the previous year. This also stands for personal loans, whereas as far as payroll loans are concerned, the expected loss distribution for 2012 turned out to be less risky than in 2011.

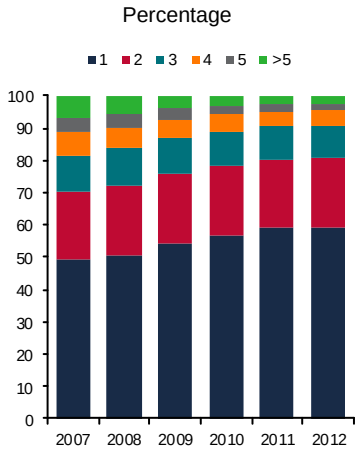
Graph 20
Credit cards risk indicators

a) Credit cards granted to individuals with and without credit histories



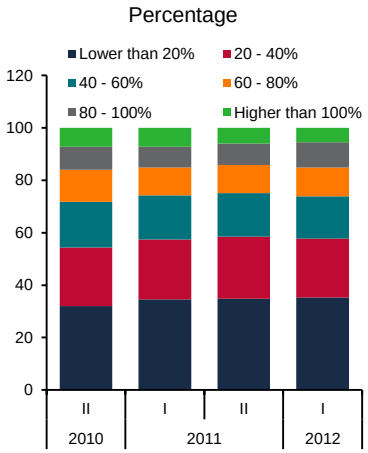
Figures as of June 2012
Source: Credit Bureau

b) Number of bank cards per client



Figures as of June 2012
Source: Credit Bureau

c) Credit utilization ratio



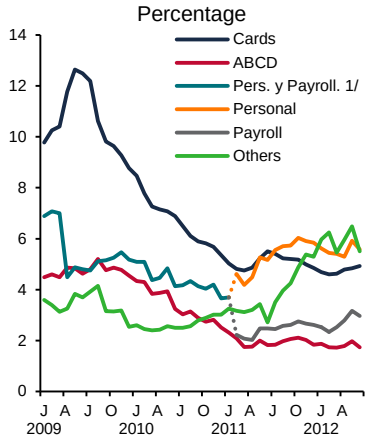
Figures as of June 2012
Source: Credit Bureau

Personal loans exhibit levels of delinquency similar to those for credit cards, whereas payroll loans show lower levels (graph 21a). Both portfolios display a coverage ratio above 200 percent. Nevertheless, the credit card experience –credit surge based on loose origination processes, and the delinquency rate thus shooting up to 12.5 percent in 2009− made the CNBV follow up closely the rapid growth in payroll loans more closely. The main feature of payroll loans is the creditor's possibility to deduct payments from the debtor's direct salary account. This apparent advantage may lead the bank to neglect origination processes. Besides, the upsides of this type of financing, compared to other unsecured loans, may disappear when the debtor's employment relationship changes or the salary is paid through an entity other than the debtor's bank, by the employer or debtor's choice. Banks are jointly working on a solution to keep labor mobility from affecting the payroll portfolio quality.

Apart from potential problems derived from poor origination and labor mobility, it is also possible that the debtor's over-indebtedness has an effect on payment of other obligations. Payroll loans are not only granted by commercial banks, but also but other institutions that are not obliged to report data to credit information bureaus. These entities do not draw customers on the basis of more competitive conditions, but through direct agreements between firms and unions, which results in elevated operating costs for these companies. These entities' lack of information on indebtedness and debtors' performance prevents granting institutions from adequately assessing credit risk, what might bring about over-indebtedness in some population segments.

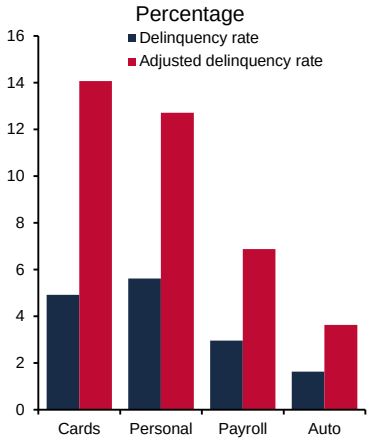
Graph 21
Consumer credit risk indicators

a) Delinquency rate by loan type



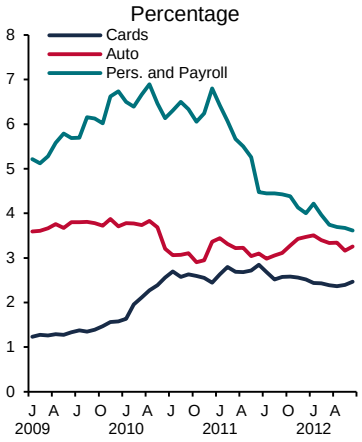
Figures as of June 2012
Source: CNBV

b) Delinquency rates by loan type



Figures as of June 2012
Source: CNBV

c) Transition probability: Loans that went from punctual to in arrears

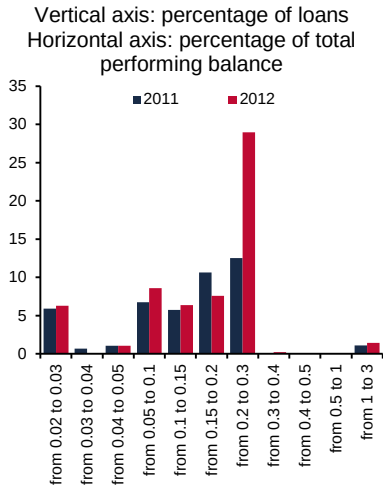


Figures as of June 2012
Source: Credit Bureau

1/ As of February 2012, personal and payroll loans are reported separately.

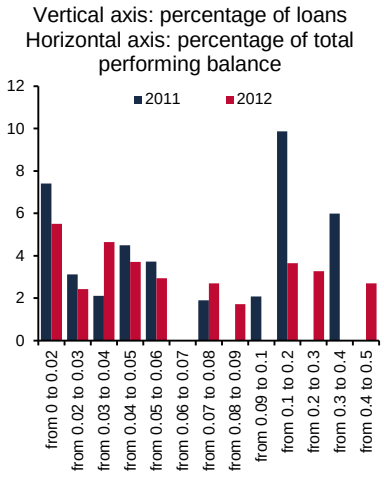
Graph 22
Credit loss distribution of performing loans

a) Credit cards



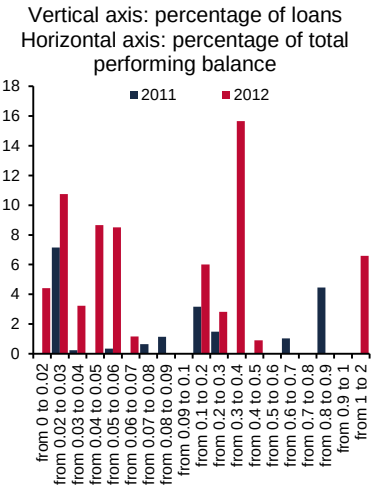
Figures as of April 2012
Source: Banco de México

b) Payroll loans



Figures as of April 2012
Source: Banco de México

c) Personal loans



Figures as of April 2012
Source: Banco de México

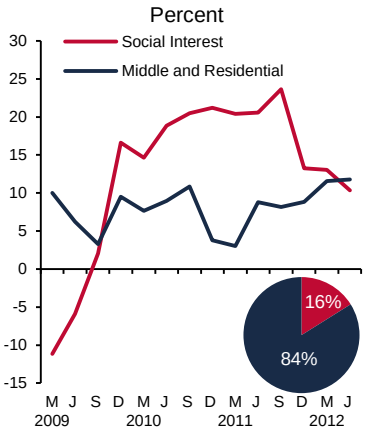
Mortgage loans

Bank mortgage loans have exhibited a sustained pace of growth, induced by larger banks. This and the lower financing to this sector by sofoles and sofomes explain the increase in the banking sector's market share. Some banks have sought to win market share by reducing interest rates and acquiring other intermediaries' portfolios. Bank mortgage loans display a higher concentration in the residential housing segment. As of June 2012, this segment accounted for 84 percent of bank mortgage loans. (graph 23a). Nonetheless, some institutions have undergone a business reorientation to channel more resources to entry-level acquisition through joint credit programs with the Infonavit.

Oh the other hand, some institutions have tried to win market share through housing-renovation loans, a virtually unexploited segment. Hence, in May 2011, the Infonavit launched the "Renovate your home" program, in collaboration with some banking institutions. The Infonavit is completely responsible for loan management, and the housing subaccount balance is used as collateral for the loan granted by the banking institution. The amount granted varies between 4 and 45 thousand pesos, with a maximum term of 30 months and an annual interest rate of 18 percent. Under no circumstances shall monthly payments be higher than 20% of the debtor's salary. Banks participating in this program have granted more than 50 thousand loans during 2011, thereby channeling resources for 1.297 billion pesos. For 2012, the Infonavit and the banking sector set a target of 100 thousand new loans, which amounts to an investment of 3.1 billion pesos. Thus, during the first half of 2012, more than 34 thousand loans −800 million pesos−were granted. As of June 2012, the banking sector earmarked 1.725 billion pesos for this type of loans.

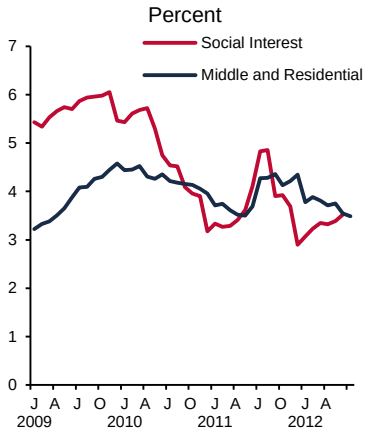
Graph 23
Commercial bank mortgage loans

a) Loan portfolio growth



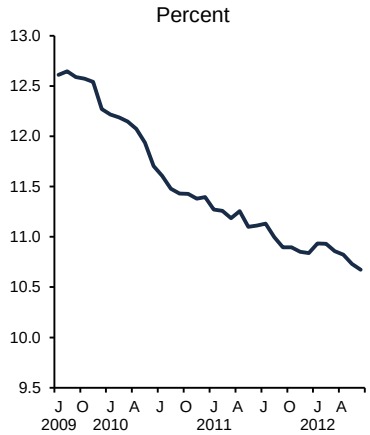
Figures as of June 2012
Source: Banco de México

b) Delinquency by housing type



Figures as of June 2012
Source: Banco de México

c) Granted loans' interest rate



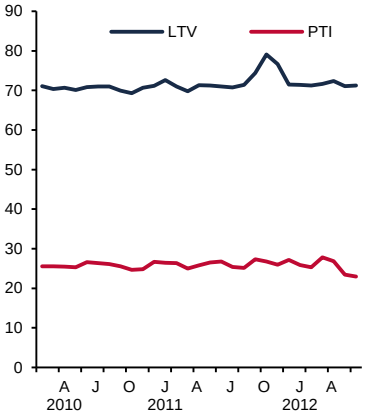
Figures as of June 2012
Source: Banco de México

Mortgage loan granting criteria appear to have barely changed, as reflected in some indicators' stable pattern, such as the loan value to the home value ratio (LTV) or the monthly payment to the debtor´s income ratio (PTI). Graph 24a shows that LTV for loans in pesos has remained at an average 72 percent over the last two years. The PTI was in turn 26 percent and varied from 19 to 32 percent, depending on the institution. On the other hand, the housing price index released by the Sociedad Hipotecaria Federal (SHF) does not appear to have substantially increased, and the arrears rate by date granted displays a homogenous pattern, what confirms the overall consistency of originating criteria for the bank mortgage loan portfolio. Mortgage loan delinquency came back to the levels observed before the deterioration experienced as of the second half of 2011, due to bad loan purchases and the balance reclassification of

the mortgage loan portfolio. While as of June 2011, the delinquency rate was 4.2 percent, it was 3.5 percent in June 2012 (graph 24).

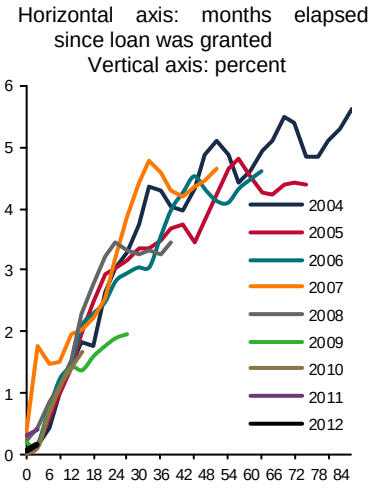
Graph 24
Commercial bank mortgage loans

a) Loan amount versus loan to value (LTV) and payment to income (PTI)



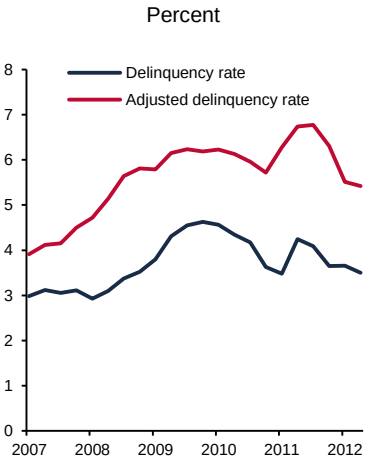
Figures as of June 2012
Source: Banco de México

b) Arrears rate by date granted



Figures as of June 2012
Source: Banco de México

c) Delinquency rates



Figures as of June 2012
Source: Banco de México

Market risk

Variations in the value of an asset may derive from changes in market factor levels (interest rates, exchange rates), the issuer's credit quality or financial market liquidity conditions. The Basel Committee on Banking Supervision (BCBS) lays out the introduction of these risks in the assessment of instruments contained in the trading book, firstly, through changes in risk-based capital requirement calculations −known as Basel 2.5−, and more recently by means of the structural revision to regulation applicable to said book. We present below an assessment of market and credit risks to which bank securities portfolios are exposed (box 3).

Box 3

Basel 2.5

Background

Financial institutions are exposed to various types of risks, depending on their core business. Institutions that take active part in the sale and purchase of financial instruments in capital markets may undergo losses when the value of instruments they hold in their portfolios decreases. Hence, banks are obligated to maintain additional capital in order to meet the so called market risks.

Since 1996, the Basel Committee on Banking Supervision set rules to determine the minimum capital banks must maintain to cope with market risks. Contrary to other types of risk, for which rules set forth by the Basel Committee prescribe the capital requirement for each transaction, market risk capital relies on the portfolio structure. Thus, Basel capitalization rules classify bank transactions in two big groups or books: the banking book and the trading book. While the banking book is fundamentally subject to a credit risk capital requirement, in the trading book, capital is determined on the basis of transactions' market risk. In addition, the Basel Committee regulation provides two methods to determine capitalization ratings: a standard method and a method based on risk models developed by the bank itself. [1] The choice will depend on each bank's capacity to develop the infrastructure needed for internal resource management.

Basel 2.5

The quick financial innovation observed in the wake of the publication of rules for market risk capitalization made it perfectly clear that the following problems existed:

• The recording on the trading book of instruments with high credit risk, such as credit derivatives or mortgage-backed securitizations. These risks were not adequately capitalized.

• The excessive dependence of capital requirements on internal bank models, which usually employed methodologies that underestimated risks and allowed for excessive hedging positions.

• The valuation of instruments under the assumption that they could be sold anytime without price changes due to the existence of constantly liquid markets.

In order to address these deficiencies, in 2009, the Basel Committee released a series of revisions to market risk capitalization rules.[2] The corresponding amendments were primarily designed for banks using internal models to determine capital requirements.

The chief components of such revised rules are:

• Incremental risk charges. Basel 2.5 considers incremental risk charges derived from concentration risks and the risk that financial assets recorded on the trading book depreciate as a result of a credit downgrade. A considerable part of the losses suffered by international banks during the recent crisis was not due to payment default but to changes in ratings of the trading book securities' issuers.

• Use of a stressed VaR. In highly volatile periods, as the one preceding the crisis, the use of the regular VaR may underestimate portfolio risk. Consequently, Basel 2.5 added an estimated capital requirement based on a VaR weighted over several stress periods.

• Securitization treatment. Both capital charges on securitizations recorded on the trading book and those registered on the banking book were made equivalent, the latter previously exhibiting more conservative requirements.

The aforementioned amendments came globally into force as of December 2011. Yet, they have not been introduced in all member countries' regulation.

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The impact of Basel 2.5 on developing economies

As previously stated, the amendments introduced by Basel 2.5 result from the objective of increasing capital requirements for the trading book and shall be applicable to banks using internal models. Nonetheless, the procedures employed by some banks for the corresponding calculations might have a particularly negative effect on global banks' risk appetite, with regard to financial assets from economies and countries with lower credit ratings.

The increase in capital requirements proposed by Basel 2.5 mainly derives from the IRC and the use of a stressed VaR.[3] Historical data are used to estimate the likelihood that a given credit rating may deteriorate. The lower the credit rating, the likelier it may deteriorate and, hence, the higher the capital requirement. It follows that Basel 2.5 penalizes financial assets from emerging economies, which generally have lower credit ratings than those from advanced economies. In particular, a stressed VaR penalizes countries whose financial markets record higher levels of volatility.

For consolidation purposes, global bank parent companies combine their assets and liabilities with those of their subsidiaries. In doing so, a significant number of global banks replace local credit ratings used by subsidiaries to estimate capital requirements for the financial assets on their balances with global ratings. That way, a corporate or sovereign-debt security with a AAA rating on the subsidiary's books, may turn into a BBB-rated foreign security on the parent company's books. This situation not only introduces a "national bias" in global banks' decisions, but also penalizes risk-taking in developing economies.

By way of illustration, capital requirements for 5-year and 30-year bonds under Basel II and Basel 2.5 are presented below. The local credit rating is assumed to be AAA and the global rating BBB. We observe that the instrument's profitability when the global rating is used for consolidation purposes decreases substantially.

Capital requirement under Basel II and 2.5 using local and global credit ratings for fixed-rate bonds

	Basel II (%)	Basel 2.5 (%)	
	Both ratings	Local rating (AAA)	Global rating (BBB)
5-year bond			
Cap. Req.	1.2	2.7	27.6
ROE	44.0	19.8	1.9
30-year bond			
Cap. Req.	5.6	10.1	47.2
ROE	57.4	10.6	6.8

Capital charges for fixed-rate bonds are determined through a VaR model. A 5.1 percent return for the 5-year bond and a 7.8 percent for the 30-year bond were assumed.

The ROE (return on investment) is obtained by dividing the bond yield net of funding costs by its capital requirement. A funding cost of 4.6 percent was assumed.

Application of Basel 2.5 to the Mexican banking sector

In Mexico, the market risk capitalization rules in force include features from the rules defined by the Basel Committee in the 1996 Agreement. Although such guidelines brought the Mexican regulation closer to international standards, by adopting those rules, the Mexican authorities set higher risk weights than those of the international agreement.

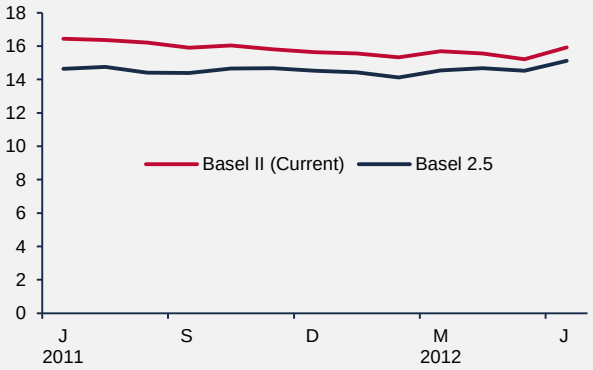
Such weights were estimated on the basis of a model defined by the regulating authority in a stress scenario. Additionally, in Mexico, market risk capitalization rules do not differentiate between the trading and the banking book. Accordingly, market and credit risk capital requirements are applied to the whole banking balance. Further, intermediaries are not allowed to use their internal models to estimate capital requirements, which are exclusively obtained through the standard method.

Considering that market risk capital requirements are computed by using the standard method and that the trading book concept does not exist, the amendments introduced by Basel 2.5 will see a limited application on Mexican institutions. It is possible nonetheless to infer the effects of their adoption.

In order to compare capital requirements determined under the Mexican regulation (this does not differentiate books) with those of Basel 2.5, securities registered for trading purposes or available for sale and repo and derivative transactions were used as an approximation of the trading book.[4] Moreover, for the analysis, the trading book positions do not have market risk capital requirements.

An initial assessment of the market risk capital requirement for the group of banks abiding by the Basel 2.5 regulation relating to internal models suggests that the obtained requirement is similar to that generated under the Mexican regulation (graph 1).

Graph 1
Impact on the capitalization index
Percentage of net capital



Figures as of June 2012
Source: Banco de México

[1] The standard method classifies positions according to their risk factors in regard to interest rates, shares, foreign currencies and commodities; each factor has an associated risk weight, provided by the regulator. Banks shall apply internal models to obtain capital charges, with previous authorization of the regulator.

[2] See BCBS "Revisions to the Basel II market risk framework - final version" June 2009 at http://www.bis.org/publ/bcbs158.pdf

[3] The capital requirement under Basel 2.5 is obtained as follows: $\max\{VaR_{t-1}; 3 \times VaR_{aver}\} + \max\{sVaR_{t-1}; 3 \times sVaR_{aver}\} + IRC$, where VaR_{t-1} corresponds to the 10-day VaR calculated on the previous day, VaR_{aver} is the average VaR for the last 60 days, $sVaR_{t-1}$ and $sVaR_{aver}$ are similar but under stress circumstances and IRC is the incremental risk charge.

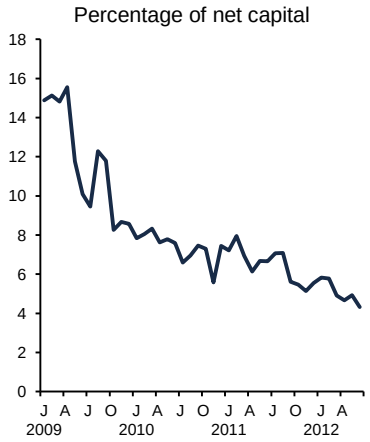
[4] For the impact analysis, only the amendments included in Basel 2.5 were taken into account. In the case of derivative transactions, Basel III establishes an additional charge for losses caused by changes in the counterparty's credit rating, regardless of the book they are registered on. This charge is known as credit valuation adjustment (CVA) and will be effective as of January 2013.

Changes in market factors

As of June 2012, market VaR as a percentage of banks' net capital was 4.3 percent (graph 25), decreasing by 35.1 percent compared to the same month in the previous year.[47] This reduction can be attributed to three factors: the increase in derivative transactions that provide interest rate risk hedges (the interest rate swap position grew 15.5 percent), a slight decrease in M bond risk – long term government bonds with a fixed rate−, and a 6.1 percent rise in commercial banks' net capital. The greater number of hedge transactions through interest rate derivatives was also reflected in the increase of banks' sensitivity to interest rates (graph 25c).[48]

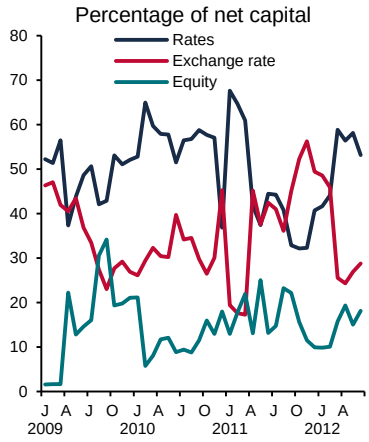
Graph 25
Commercial bank market risk

a) Commercial banks total VaR[1/]



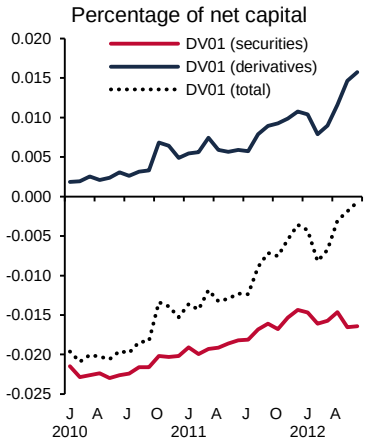
Figures as of June 2012
Source: Banco de México

b) Percentage of VaR by risk factor of total commercial bank loans



Figures as of June 2012
Source: Banco de México

c) Changes in the trading book value in response to an increase of one basis point in interest rates (DV01)



Figures as of June 2012
Source: Banco de México

1/ VaR at a 99.9 confidence level and a term of 20 working days.

[47] VaR at a 99.9 percent confidence level and a term of 20 working days.

[48] DV01 measures the portfolio losses or profits generated by an increase of one basis point in interest rates.

Changes in the issuer's credit rating

Risk derived from changes in securities' or issuers' ratings within banks' trading portfolios, measured by VaR,[49] accounted for 0.1 percent of capital as of June 2012, thus growing 3.0 percent with respect to the same month in the previous year. This increased number can be explained by the surge in B-rated securities within banks' investment portfolios. Nevertheless, banks' exposure to a credit rating downgrade of their securities portfolios is limited. A general reduction by two levels would merely represent a 1.2 percent loss of net capital.

Liquidity risk

Banks' liquidity situation, although heterogeneous, is generally good. Whereas large banks display adequate short-term and structural liquidity levels, along with relatively low concentrated funding sources, some small and medium-sized banks present low short-term liquidity levels, structural liquidity mismatches and highly concentrated funding sources.[50]

The Mexican banking system continues to present a solvent short-term liquidity position, as measured by the Liquidity Coverage Ratio (LCR), under current revision by the Basel Committee (graph 26).[51] The average liquidity position of large banks has undergone certain changes that can be explained by LCR fluctuation in banks with bigger liquidity positions; nonetheless, the average remains well above the minimum LCR recommended by the Basel Committee. The main strength in the liquidity profile of large banks derives from the fact that they follow a traditional banking model, with a high percentage of stable retail funds.

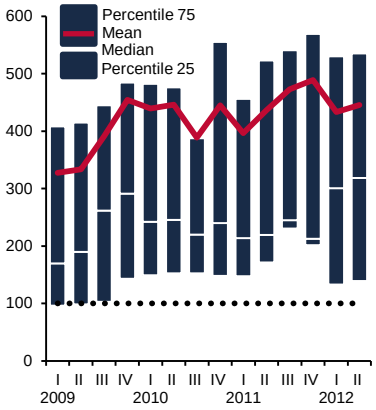
[49] The analysis does not include government instruments. The VaR was used for securities credit risk calculations. The CreditMetrics approach is a commonly accepted method for the estimation of debt securities credit risk – for further information, see the J.P. Morgan technical document of April 2, 1997−. This methodology uses issuers' and issuances' ratings, transition matrices and margins to discount debt securities' expected cash flows. When one instrument possessed two or more ratings, the lowest local rating was used; in the event a debt security had not been rated, the issuer's rating was employed; if none of the above was possible, the instrument was excluded from the analysis. A correlation of zero between securities was employed for this analysis. The default recovery rate was 5 percent and the annual Standard & Poor's transition matrix was employed. A term of one year and a 99 percent confidence level were used.

[50] Recently authorized banks, which have hitherto reported data for less than 12 months, were not included in the liquidity risk analysis.

[51] The LCR calculation used in this *Report* is based on certain assumptions for some bank balance headings for which the disaggregated or detailed data necessary for the LCR calculation under Basel guidelines are not available. Particularly, the following estimations need to be done: loan portfolio cash inflows, retail and wholesale liability classifications −with financial and non-financial counterparties−, as well as the customer-bank relationship, among others. This, together with the amendments the Committee shall make to its rules, will result in changes in the estimation of Mexican banks' LCR.

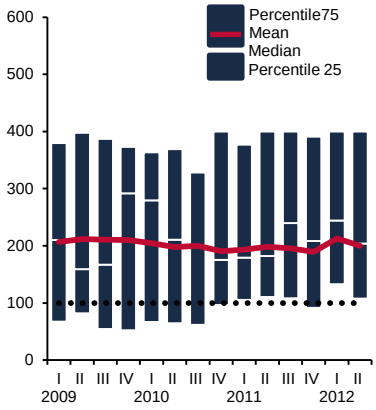
Graph 26
Liquidity Coverage Ratio (LCR)

a) Large banks



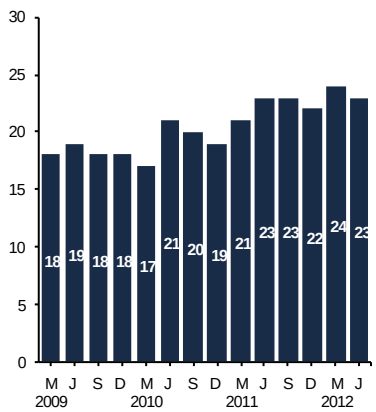
Figures as of June 2012
Source: Banco de México preliminary estimates

b) Medium-sized banks and banks associated with retail chains



Figures as of June 2012
Source: Banco de México preliminary estimates

c) Banks with an LCR above 100 percent 1/



Figures as of June 2012
Source: Banco de México preliminary estimates

1/ The graph shows the number of banks with an LCR quarterly average above 100 percent. This calculation considered a total of 28 banks, excluding the small affiliates of foreign banks.

On the other hand, the average liquidity position of medium-sized and small banks has not experienced significant changes and has remained above the minimum recommended by the Basel Committee. Nevertheless, as mentioned in previous editions of this *Report*, this group is substantially heterogeneous, and some banks –mainly those that depend heavily on wholesale funding− record relatively low LCR levels. Although the Basel Committee is currently revising several aspects related to the LCR calculation –primarily those relative to the definition of liquid assets and some assumptions underlying the modeling of cash inflows and outflows in a 30-day stress scenario−, it has announced that the LCR final version will be passed by the end of this year or in the beginning of 2013. It follows that banks with low LCR levels shall shortly define a clear strategy to improve their liquidity profile and present a specific plan to meet this indicator in the short run. To that end, they shall tap long-term financing and from more stable sources, as well as increase their liquid asset stock.

Since the beginning of 2011 to date, some small and medium-sized banks have implemented medium-term strategies to gradually increase their stable funds and extend financing maturities. Nonetheless, other banks do not seem to have taken clear actions to rectify their positions and, in some other cases, their LCR is highly volatile, thus reflecting the absence of a clear strategy to improve their short-term liquidity position.

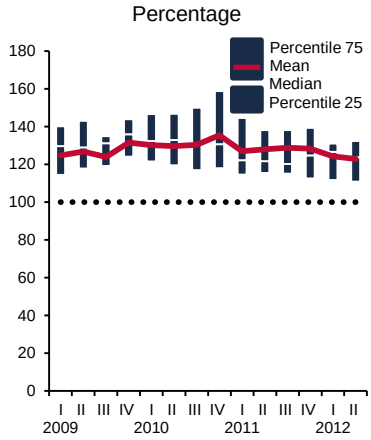
Structural liquidity, as measured by the stable funding ratio divided by the loan portfolio,[52] shows considerable differences among bank groups (graph 27). Large banks exhibit levels slightly higher than one hundred percent; that is, on average, they are financing their portfolio with stable liabilities. As for medium-sized and small banks, the average is lower than one hundred percent, with a very heterogeneous outlook for this indicator. Just as in the case of the LCR, the lowest average level for this ratio can be explained by some banks' dependence on short-term financing.

[52] Stable funding is defined as the sum of demand deposits, deposits made by the general public and net capital.

Banks associated with commercial chains (BACC) [53] display levels far above one hundred percent, although with a downtrend that may suggest more efficient resource brokerage.

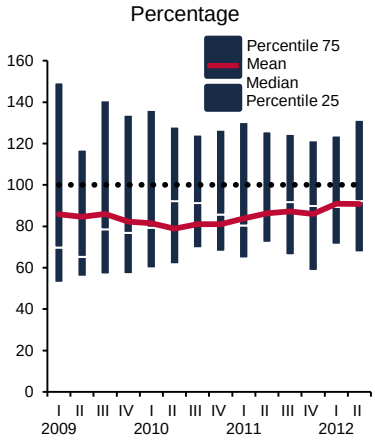
Graph 27
Structural Liquidity ratio

a) Large banks



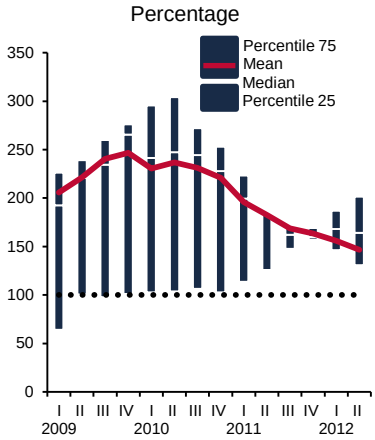
Figures as of June 2012
Source: CNBV

b) Small and medium-sized banks



Figures as of June 2012
Source: CNBV

c) Banks associated with retail chains



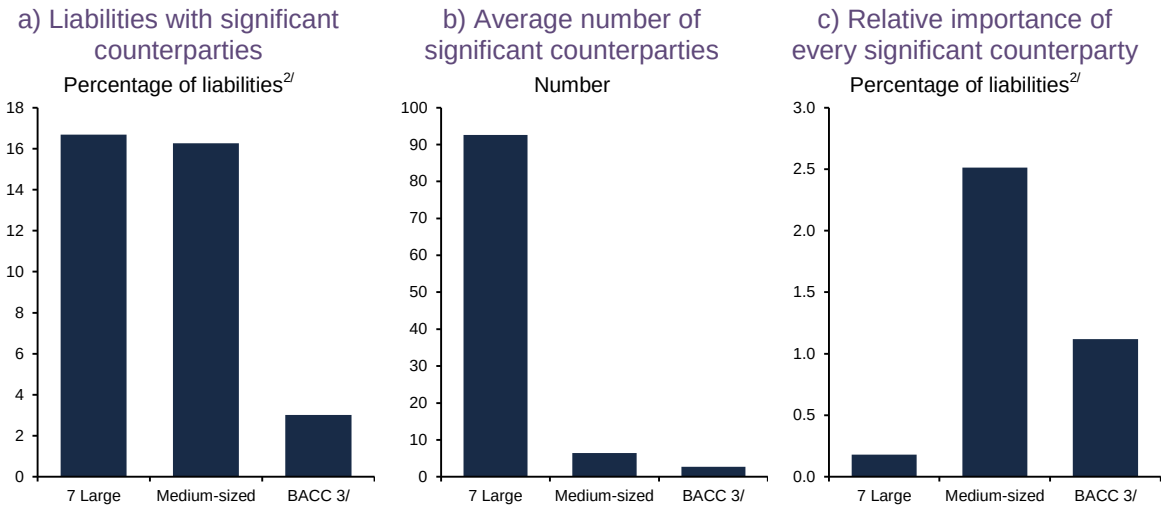
Figures as of June 2012
Source: CNBV

Another relevant aspect for adequate liquidity risk management is banks' concentration of funding. An elevated percentage of liabilities with few counterparties increases the likelihood of funds being abruptly withdrawn in a stress scenario. When analyzing Mexican banks' funding concentration with significant counterparties,[54] medium-sized and small banks exhibit once again the highest concentration levels (graph 28). For this group, 16 percent of total liabilities (including derivatives and net repos) stem from fewer than seven significant counterparties, whereas large banks display an average 16 percent of their liabilities stemming from approximately 90 significant counterparties. Consequently, exposure to any significant counterparty is considerably higher for medium-sized and small banks than for the larger ones.

[53] These include Banco Fácil, Banco Wal-Mart, Bancoppel, Banco Azteca and Famsa.

[54] For this analysis, significant counterparties are defined as individuals, corporations and financial entities other than banks, to which total funding granted shall be higher than or equal to 200 million pesos or account for 0.5 percent of the institution's total liabilities.

Graph 28
Other liquidity indicators: Significant counterparties[1/]



Figures as of June 2012
Source: CNBV

Figures as of June 2012
Source: CNBV

Figures as of June 2012
Source: CNBV

1/ The weighted average was calculated based on each institution's share in each group's assets.
2/ Total liabilities including net repo and derivative positions.
3/ BACC: Banks associated with commercial chains.

Lastly, the follow-up of intraday liquidity needs is not a matter of minor importance. Banks shall maintain an appropriate level of liquid assets susceptible to being offered as collateral in the main payment systems, in order to operate swiftly and efficiently. This allows them to overdraw their accounts to effect immediate payments, without the need to receive settlements from other counterparties. If an entity does not have enough collateral to overdraw its account, it will have to delay payments and, at a moment, it will be confronted with hardships to operate within payment systems. Such an event could be interpreted as a sign of weakness by other market players, and hence generate extra pressure on said institution. In July of this year, the Basel Committee on Banking Supervision issued a proposal of eight indicators, with the purpose of assisting entities and authorities in following up intraday liquidity needs.[55] These indicators aim at measuring both available and required liquidity to operate within payment systems, while contributing to the determination of the major characteristics of everyday banks' liabilities and settlements.

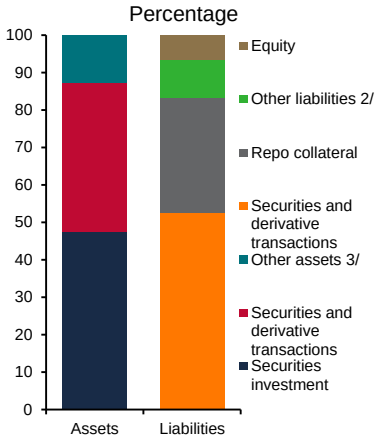
3.3 Brokerage firms

In June 2012, assets managed by brokerage firms totaled 567.4 billion pesos, 21.9 percent more in real terms than in the same month of the previous year. Brokerage firms' core business involves trading securities and collecting fees generated by services provided to customers; this is self-evidently reflected in the structure of assets. In trading securities, for their own account or for the account of their customers, brokerage firms may have valuation profits or losses (graph 29).

[55] BCBS, *Monitoring indicators for intraday liquidity management – consultative document*, July 2012.

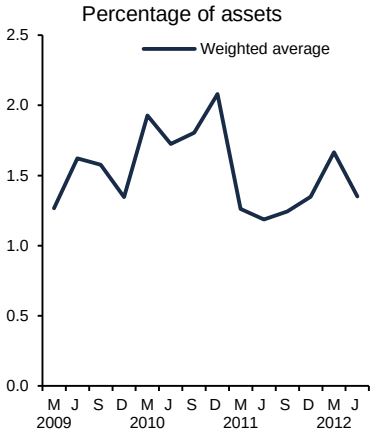
Graph 29
Structure of the assets, liabilities and capital, and income of brokerage firms

a) Structure of assets[1/], liabilities and capital



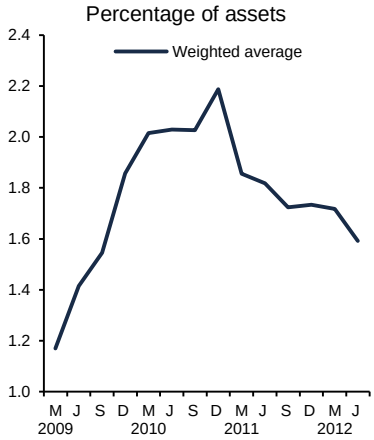
Figures as of June 2012
Source: CNBV

b) Trading income[4/]



Figures as of June 2012
Source: CNBV

c) Services income[5/]



Figures as of June 2012
Source: CNBV

1/ Assets adjusted for repo transactions.
2/ Other liabilities include stock liabilities, loans from banks and other entities, accounts payable and deferred taxes.
3/ Other assets include cash and equivalents, accounts receivable, permanent investments in stocks, furniture and equipment, and others.
4/ Trading income consists of profit and loss generated by the purchase and sale of securities, currencies, metals, and derivatives, as well as the revaluation of positions in such instruments.
5/ Services income includes net fees and income from financial consulting.

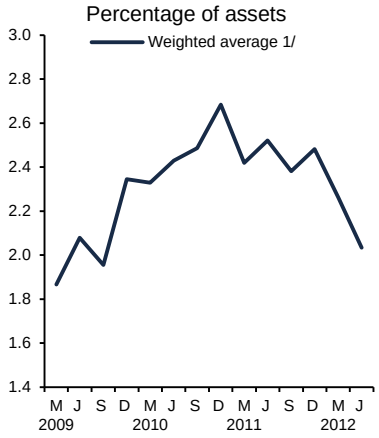
Profitability and solvency

Brokerage firms' net profit increased by 57.5 percent in real terms in the first half of 2012, compared to the same period of previous year. This higher profit was due to a 38.8 percent increase in trading income (graph 29b), a 6.7 percent increase in services income, a mild reduction −1.7 percent− in administrative expenses (graph 30a) and higher operational efficiency during the second half of the year (graph 30b). In regard to the solvency of the sector as a whole, the capital consumption index was 30.5 percent as of June 2012, higher than the 29.1 percent registered a year earlier (graph 31c).[56]

[56] The capital consumption index is used to measure brokerage firms' solvency. It is the ratio of capital requirements for market, credit and operating risks divided by the brokerage firm's capital. In order to be considered solvent, brokerage firms must maintain their capital consumption index below 80 percent.

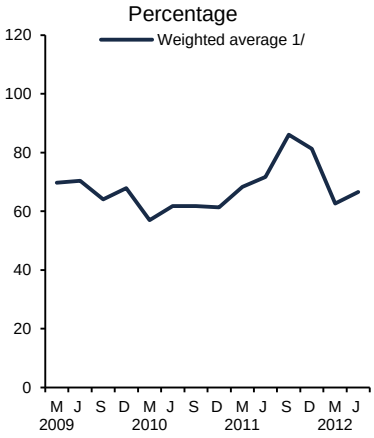
Graph 30
Brokerage firms' expenditure and efficiency ratio

a) Administrative expenses



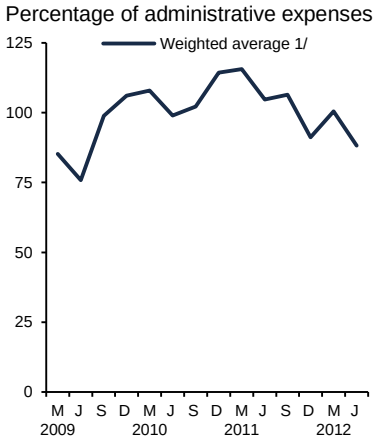
Figures as of June 2012
Source: CNBV

b) Efficiency ratio[2/]



Figures as of June 2012
Source: CNBV

c) Services income[3/]

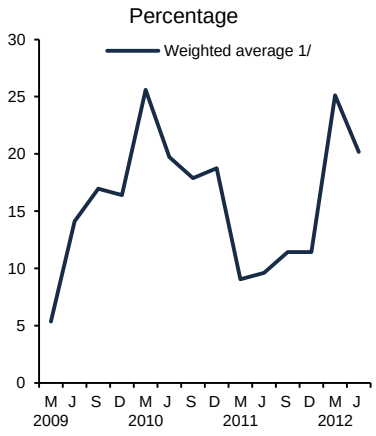


Figures as of June 2012
Source: CNBV

1/ The weighted average was calculated based on each institution's share in brokerage firm total assets.
2/ The efficiency ratio is obtained by dividing administrative expenses by total income for the period.
3/ Services income includes net fees and income related to financial consulting.

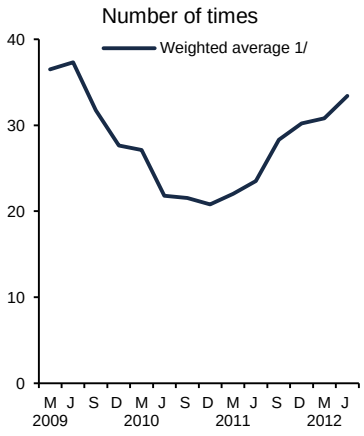
Graph 31
Brokerage firms' return on equity, leverage and solvency

a) Return on equity



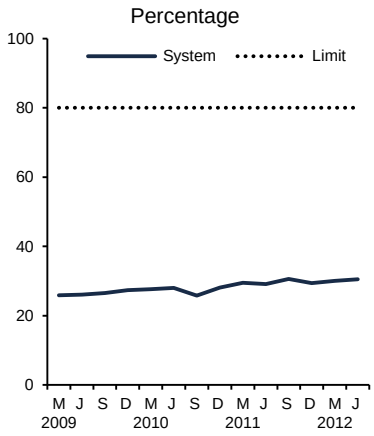
Figures as of June 2012
Source: CNBV

b) Total-assets-to-equity ratio



Figures as of June 2012
Source: CNBV

c) Solvency



Figures as of June 2012
Source: CNBV

1/ The weighted average was calculated based on each institution's share in brokerage firm total assets.

Market risk

As in the case of banks, variations in the value of brokerage firms' assets may result from changes in market factors, the issuer's credit rating or market liquidity conditions.

Changes in market factors

As of June 2012, brokerage firms' market VaR increased by 14.1 percent compared to the same month of the previous year (graph 32a). This higher risk can be attributed to the rise in debt securities holdings, primarily government instruments at floating rates (bondes). Market risk is mainly concentrated in the equity portfolio, which accounted for 82.2 percent of total risk as of June 2012, while the bond portfolio only represented 16.3 percent (graph 32b). Sensitivity, as measured by the DV01[57], fell 26.7 percent from June 2011 to June 2012; currently, it registers a level of 0.01 percent of net capital (graph 32c).The reduced losses in response to interest rate increases can be explained by a lower modified duration[58] in the brokerage firms' portfolio, which came down from 0.3 years in June 2011 to 0.19 years in June 2012.

Changes in the issuers' credit rating

Brokerage firms' debt securities credit risk[59] was 1.0 percent of net capital as of June 2012, accounting for a 7.9 percent increase with regard to the same month in the previous year. This was mainly due to higher holdings of B-rated securities. The sensitivity analysis suggests that if the ratings of brokerage firms' debt securities were to be downgraded by one and two levels, the estimated losses would amount to 1.2 and 5.1 percent of net capital, respectively.

Other risks

The lack of adequate controls over financial transactions may pose high risks to intermediaries and market operation. In mid-April 2012, the brokerage house Bulltick entered an erroneous sell order for 49.715 billion pesos. The mishap had a considerable impact on the Mexican Stock Market (BMV) benchmark (IPC). As a result, the National Banking and Securities Commission (CNBV) sent an official letter to the brokerage conveying remarks on the errors, and later, at the stockholders' meeting, an agreement to request the revocation of Bulltick's license was reached.

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[57] The DV01 measures losses or profits in a portfolio in response to a one basis-point increase in interest rates.

[58] Modified duration measures the security's price sensitivity to changes in interest rates and depends on both the term and distribution of the flows generated during the instrument's life. The formula for the calculation of modified duration is:

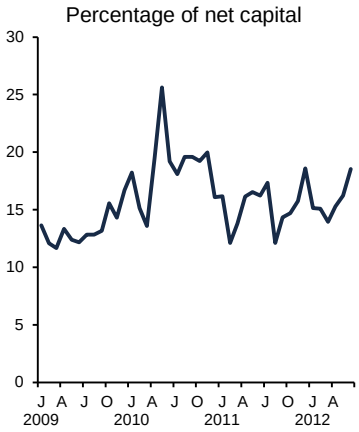
$$\frac{dP}{P} = -Dur.modificada \times dr$$

where dP is the change in the security's price given a one-basis point change in the nominal interest rate, dr is the change in the nominal interest rate and p the debt security value.

[59] See footnote on page 49.

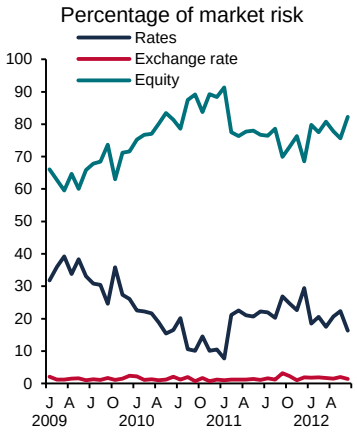
Graph 32
Brokerage firms' market risk

a) Brokerage firms' total VaR[1/]



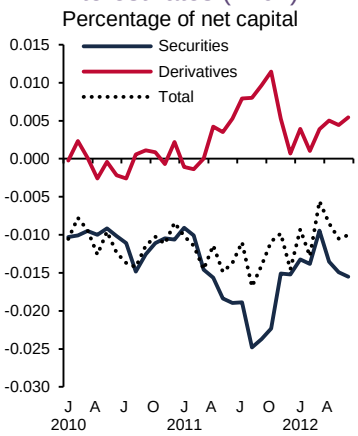
Figures as of June 2012
Source: Banco de México

b) Percentage of VaR by risk factor



Figures as of June 2012
Source: Banco de México

c) Changes in the trading book value in response to an increase of one basis point in interest rates (DV01)



Figures as of June 2012
Source: Banco de México

1/ VaR at a 99.9 confidence level and a term of 20 working days.

3.4 Insurance companies

The Mexican insurance market is the second largest in Latin America (with 808.3 billion pesos in assets as of June 2012), just after Brazil. Nonetheless, penetration as a percentage of GDP is low −2.1 percent−, below other Latin American markets like Brazil and Chile, where the insurance sector represents around four percent of GDP.

As of June 2012, the Mexican insurance sector was comprised of 103 entities, including one owned by the federal government and two mutual insurance companies. The real annual growth rate of the insurance sector's assets was 12.3 percent. Asset composition has not changed over the last year: investments, reinsurance and insurance debtors account for 77.6, 7.9 and 10.1 percent of assets, respectively. The sector's net profit to equity[60] was 19.9 percent as of June 2012, slightly up in regard to the 14.6 percent of the previous month. Insurance company profits are determined by the following factors: the issuance of premia, returns on investment, reserve creation costs, premium acquisition[61], operation and payment of claims. In the second half of 2012, direct premia[62] grew 9.9 percent in real terms, partly due to an improvement in the Mexican real sector.

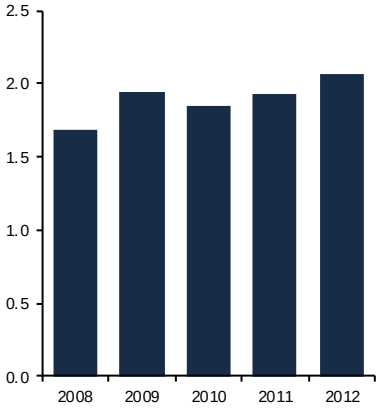
[60] Return on equity is calculated by dividing the annualized net profit by average equity.

[61] The acquisition heading relative to insurance companies' expenses refers to costs associated to the issuance of premia, including agents' fees.

[62] The premium is the fee received from the policyholder for the protection granted. Premia issued are policies signed by the insurance company. Issued direct premia are the total amount of the net premia corresponding to policies and endorsements issued to policyholders over a specific period and do not take into account the acquisition of premia generated by another insurance company (assumed reinsurance) or premium cessions to another insurance company (ceded reinsurance).

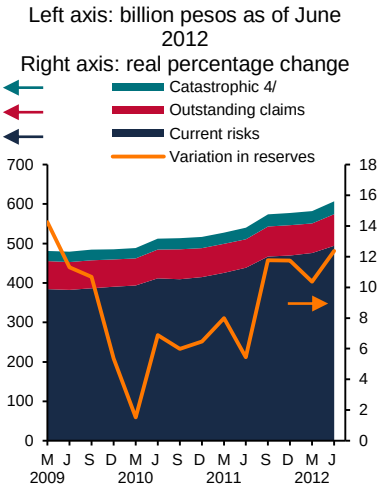
Graph 33
Insurance company market penetration and solvency indicators

a) Market penetration[1/ 2/ 3/]



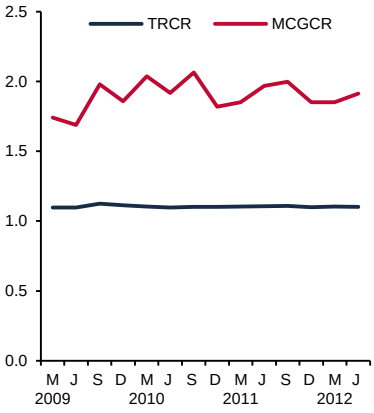
Figures as of June 2012
Source: CNSF and Banco de México

b) Technical reserves



Figures as of June 2012
Source: CNSF

c) Minimum capital guarantee coverage (MCGCR) and technical reserve (TRCR) ratios



Figures as of June 2012
Source: CNSF

1/ Penetration is obtained by dividing the total amount of direct premia by the nominal average GDP.
2/ 2012 figures are annualized for comparison purposes.
3/ The direct premia issued are the total amount of net premiums corresponding to policies and endorsements issued to policyholders over a given period and do not take into account the acquisition of premiums generated by another insurance company or cessions to another insurance company.
4/ Countries with catastrophic exposure have created intertemporal compensation mechanisms as part of their insurance system design. The most common compensation mechanisms are catastrophe reserves and compensation funds, which aim at guaranteeing insurance coverage and widening insurance penetration for catastrophic risks. Besides the creation of catastrophe reserves, in Mexico there is the Natural Disaster Fund (Fonden), which is a federal financial device used to deal with contingencies caused by a natural disaster. Nonetheless, in Mexico there is no such institution as the Spanish Insurance Compensation Consortium, a state entity with autonomous assets, which provides direct insurance given the lack of coverage (agricultural insurance or nuclear risk insurance).

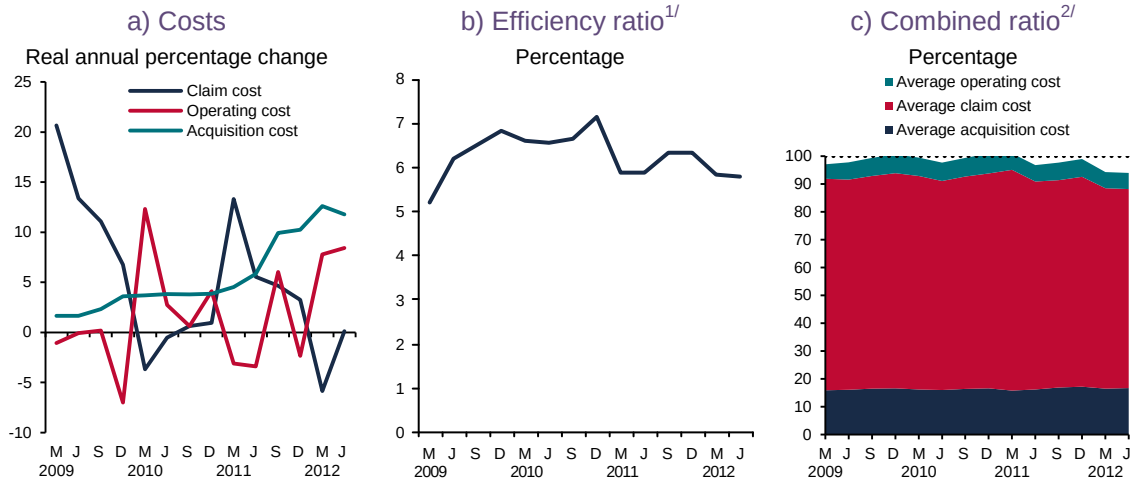
As of June 2012, the most profitable sector segments were pensions, with a profit of 0.2 pesos per peso of direct premium issued, and car insurance, with a 0.1 peso profit per peso of direct premium issued. Yet, the share in profits is higher for the car insurance heading than for pensions, accounting for 29.5 and 13.1 percent of net profits, respectively. As of June 2012, income from financial products[63] rose by 24.7 percent in real terms compared with the same month of the previous year. On the other hand, expenses derived from claims remained constant in real terms as of June 2012 with regard to the prior year. The life and car insurance segments account for most of said expenses, with 40.8 and 26 percent, respectively; at the same time, they represent 45.9 and 57.3 percent of the direct premium issued. The combined index,[64] which reflects the premium's generation and administrative capacity, registered an uptrend between June 2011 (96.8 percent) and December 2011 (99 percent) and a downtrend in the first half of 2012 (94 percent).

[63] Financial products include the product itself, investment valuation and sale, exchange income (expenses) and surcharges on premia (default interests).

[64] The combined index measures the technical profitability of an insurance company and evaluates the capacity of income generated by premia to meet the company's costs. The index is the sum of three indicators: a) net acquisition cost as a percentage of withheld premia: this indicator shows the direct cost per peso of a withheld premium (premium issued less premia cessioned in reinsurance), or in other words, direct costs generated by the sale of insurance policies; b) cost of the claim as a percentage of premiums written: this measures whether the level of loss the insurance company has faced has been met by revenues generated by the sale of policies after deducting expenses generated by the increase in reserves (written premia); and, finally c) the administrative cost as a percentage of issued premia; this measures the efficiency of premium placement by assessing total expenses per peso of premium sold.

Concurrently, the efficiency ratio was 6 percent by the end of the second quarter of 2012; premium issuance was consequently enough to meet claim, acquisition and operating costs as of June 2012 (graph 34).

Graph 34
Insurance sector costs



Figures as of June 2012
Source: CNSF

Figures as of June 2012
Source: CNSF

Figures as of June 2012
Source: CNSF

1/ The efficiency ratio is the net operating expense ratio divided by direct premia.
2/ A combined index lower than 100% implies that the value assigned to the premium is enough to cover the premium's generation and administration costs as well as claims during the life of the insurance policy.

The insurance sector's investment portfolio is diversified in different instruments –mostly long-term– available in the Mexican market. These are held to maturity, so as to match investments to the liability terms reflected in their technical reserves. Either higher volatility in returns on investments, an economic slowdown or a sudden increase of claims or catastrophic events may have an impact on the insurance sector performance. Underwriting risk is one of the major risks insurance companies face.[65] In the case of the pension and life insurance headings, this risk stands out given the increase in life expectation. Appropriate liquidity management is essential in insurance company operations, given the possibility of mismatches between investment and liability –mainly contingent– terms. This is why the regulation is very specific in relation to the amount of technical reserves[66] held and the adopted investment regime. Moreover, insurance companies must comply with a capital requirement, known as minimum capital guarantee. The technical reserve coverage ratio (TRCR) is a measure to assess adherence to the first requirement; as of June 2012, the TRCR was 10 percent higher than the minimum required.[67]

[65] Underwriting or technical risk derives from underwriting insurance contracts and is related to covered risks and business operating processes. It comprises various subrisks: premium, reserve, mortality, morbidity, disability, epidemic, longevity, administrative-expense and extreme- event subrisks, among others.

[66] Technical reserves represent the expected value of future liabilities related to the payment of claims, benefits, guaranteed securities, acquisition and administration expenses, among others, as well as any other future liability derived from insurance contracts.

[67] The General Mutual Insurance Company and Institutions Law (LGISMS) sets forth that institutions shall at all times maintain the investments meant to back technical reserves. The technical reserve coverage ratio (TRCR) is calculated by dividing total investments backing the technical reserves by the reserve amount. When this ratio is higher than or equal to one, it means that investments cover the technical reserves and that the company has enough funds to meet its liabilities.

The second requirement is measured by the minimum capital guarantee coverage ratio (MCGCR), which slightly declined from 1.97 in June 2011 to 1.85 in December of the same year; since then, it registered an uptrend to come back to 1.96 in June 2012 (graph 33b and c).[68]

The insurance sector has not been free from catastrophic events in 2012. In January, there were droughts in Guanajuato, Durango, Chihuahua, Tamaulipas and other northern states. Consequently, Agroasemex had to settle catastrophic insurance claims for pasture and forage by cattle breeders for up to 966.6 million pesos.[69] Claims paid by insurers for the 1,840 incidents caused by earthquakes –particularly the 7.4 degree earthquake of March 20− amount to 238.1 million pesos thus far this year, as reported by the Mexican Association of Insurance Institutions (AMIS).

Natural risks, such as earthquakes and hurricanes, may not only entail considerable losses, but also cause structural damage and disrupt economic activity, apart from the casualties derived from this type of events. Because of its geographical location and geological conditions, Mexico is highly exposed to damages caused by catastrophic events, particularly earthquakes and hydro-meteorological events. Thanks to insurance companies, the financial system contributes to compensating for losses and, hence, through a stable and affordable range of catastrophic insurance coverage, to minimizing negative potential effects on the real economy.

Upon the occurrence of such events, insurance catastrophic coverage allows for the swift replacement of productive assets, thus reactivating economic activity in the areas or regions hit by those incidents.[70] Given the technical nature of these risks –requiring intertemporal compensation among risks and regions−, the existence of a stable and affordable domestic coverage portfolio depends on the availability of catastrophic reinsurance in international markets, among other things.

Contrary to what happens with reinsurance coverage of regular risks (life, damages, accidents and illnesses), there is a well-documented failure in international catastrophic reinsurance, which, upon the occurrence of a major disaster in any part of the world, presents a sudden supply contraction that may translate into not only a significant increase in catastrophic reinsurance prices but also the temporary disappearance of such supply.[71]

In the current situation, with regard to the above mentioned market failure, local insurers would not be able to supply an affordable and stable insurance portfolio to cover the demand of

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[68] The minimum capital guarantee (MCG) is the insurance company capital requirement and is based on assumed risks. The MCG must be backed by assets invested in accordance with the General Mutual Insurance Company and Institutions Law (LGISMS). The minimum capital guarantee coverage ratio (MCGCR) measures the solvency of insurance companies and is obtained by dividing the sum of investments that back the MCG and excess investments backing technical reserves by the minimum capital guarantee requirement. An MCGCR greater than one implies that the investments cover the MCG requirement and that the company has additional investments for meeting it; when below one, investments that comply with security and liquidity requirements are insufficient to back the requirement. Unlike banks, insurance entities are not governed by a regulator body prescribing international standards.

[69] Currently, less than half of the cultivated area in the country has an agricultural insurance. Of the 22 million hectares planted, only 10 million have a policy, two million of which belong to private firms. The rest were jointly bought by the federal government and the states and only cover social-sector farmers, that is, those who have no more than 10 hectares cultivated with corn, wheat and some vegetables.

[70] Importantly, insurance companies are not the only entities that provide protection against severe natural disasters. The Federal Government has been putting a risk management strategy into action for several years, which, besides providing oil risk and debt cost coverage, includes the partial transfer of risks faced by public finances though the Natural Disaster Fund (Fonden). With this strategy, international reinsurance companies and specialized investors provide insurance schemes and catastrophe bonds to both protect critical infrastructure in hands of the federal and state governments and meet costs imposed on society triggered by an emergency situation. For that purpose, the Federal Government has led a global effort to open these markets to foreign countries, since traditionally they were exclusively open to insurance carriers.

[71] We note that this situation did not occur in 2011, when extreme events such as the Tohoku earthquake, the volcanic eruptions in New Zealand or the floods in Australia took place.

catastrophic coverage, as already happened in 2006, in the aftermath of hurricane Wilma in the Cancun area. This brought about economic vulnerability, since, without a loss compensation device, several regions in the country remained exposed to natural disasters.

Given the possibility of engendering this type of economic vulnerability, some countries have implemented mechanisms to restrain this failure's potential effects on international reinsurance markets. For instance, in some countries −Belgium, Denmark, United States (Florida and California), France, Spain, Iceland, Japan, New Zealand and Turkey−, explicit schemes have been put in place with substantial government involvement (in terms of operation and design) for long-term OBS (off-balance-sheet) catastrophic risk compensation. These programs provide opportunity for the immediate replacement of the catastrophic reinsurance portfolio in scenarios where such portfolio is globally disturbed. In other countries −Germany, Australia, Canada, Chile, Colombia, Korea, Ecuador, Italy, Mexico, Nicaragua, Norway, Peru, Romania, Switzerland and Venezuela−, the lack of catastrophic compensation devices gives way to the obligation to create catastrophic reserves on the balance sheet.

3.5 Pension funds (Siefores)

In Mexico the two major federal institutions in charge of social security for employees and their dependents are the Mexican Social Security Institute (IMSS) −for private company workers− and the State Worker Social Security and Services Institute (ISSSTE).[72]. For the sake of long-term financial stability, the pension system was reformed firstly for workers affiliated to the IMSS in 1997, and then for workers affiliated to the ISSSTE in 2007. In both cases, the pension system evolved from being based on defined benefits to defined contributions through individual accounts managed by specialized financial intermediaries called afores (pension fund managers) and Pensionissste.

Evolution of the investment regime and regulation

Since 1997, the investment regime of funds managed by afores −siefores− has been modified, in order to increase yields and investment diversification (table 6). As of 2007, the inclusion of new instruments in the investment regime has accelerated: individual shares of companies listed on the domestic stock market or on foreign stock markets through investment mandates, capital development certificates (CKDs), real estate investment trusts (fibras), commodities, mutual funds and mandates for foreign investments have been allowed. Along with these financial instruments, transactions in foreign currencies belonging to eligible countries were also authorized. Furthermore, funds were classified according to the affiliates' age. As of February 2008, each afore manages five obligatory funds (known as basic siefores), with an investment regime that varies depending on the affiliates' age, in such a way that risk decreases as retirement age approaches.

[72] Additionally, the states, Pemex, CFE and the military, among others, manage their own pension systems for their workers and dependants.

Table 6
Evolution of the siefores investment regime

		1997-1999	2000-2004	2005-2007	2008-2010	2011-2012
Debt	Governmental	✓	✓	✓	✓	✓
	Banking	✓	✓	✓	✓	✓
	Corporate	✓	✓	✓	✓	✓
	Foreign	×	×	✓	✓	✓
Equity	Indexes (local)	×	×	✓	✓	✓
	Stock (local)	×	×	×	✓	✓
	Indexes (foreign)	×	×	✓	✓	✓
	Stock (foreign)	×	×	×	×	✓
Currencies		×	✓ US dollars, euros, yens	✓ US dollars, euros, yens	✓ US dollars, euros, yens	✓ US dollars, euros, yens
Derivative		×	✓	✓	✓	✓
CKDs / fibras		×	×	✓	✓	✓
Commodities		×	×	×	×	✓
Mutual funds		×	×	×	×	✓
Mandates		×	×	×	×	✓

Source: Amafore and Banco de México

As far as risk management is concerned, siefores must comply with certain limits on exposure to market risk, measured by a VaR abiding by certain features laid down by the Consar. For that matter, some reforms have been undertaken: i) in June 2009, the methodology to estimate the VaR was modified, and the number of scenarios used for its calculation increased from five hundred to one thousand daily scenarios, with no changes in the confidence level of 95 percent; ii) in February 2010, the methodology to determine the VaR confidence level during highly volatile periods was also modified, with a view to preventing losses in siefores due to portfolio reallocation. Furthermore, VaR limits by type of siefore have been raised, in order to capitalize on changes in the investment regime that took place in recent years.

The broader investment regime will make investment portfolio management more complex. This poses new challenges for both afores, with respect to fund management, and the Consar, with respect to oversight. To meet these challenges, in December 2011, the Consar released some general provisions containing prudential guidelines relative to siefores portfolio management. The regulation obligates siefores to strengthen risk management units and investment and risk committees, and to emphasize the importance of the internal comptroller –each of the aforementioned bodies with specific functions, in order to ensure the appropriate management of workers' funds.

Changes in transfers and account reallocation

During the first years of life of the SAR, in the name of fostering competition, workers were able to switch afores freely. The process was nonetheless operationally intricate, and hence limited the actual number of transfers. In 2002, the process was simplified and the number of transfers significantly rose (the transfers were not necessarily beneficial to workers and did raise operating costs). On the other hand, in the case of workers who did not select an afore when starting their formal work life, their contributions are channeled to a concentrating account managed by Banco de México,[73] up until the Consar assigns an afore to them. Once the afores have received the accounts, they shall locate and register workers within two years; otherwise, the accounts shall be reallocated to a higher-return afore.

The reallocation of 11.9 million accounts (28.4 percent of which managed by afores) was undertaken on January 31, 2012. This represented an aggregate balance of 59 billion pesos. Balances held in Banco de México correspond to accounts registered in an afore known as a service provider. [74] As of December 2011, the Consar set forth new rules for the transfer of accounts that have been managed by an afore for less than one year, so that they be administered by afores consistently offering good returns. Transfers must abide by the following criteria: i) an afore may withhold allocated accounts if its net yield indicator (NYI) reaches or surpasses the median level during at least seventy percent of the last 24 months, without having been in the first quartile during twenty percent or more of said period; ii) an afore may receive transferred accounts provided it has a higher NYI, and this reached or surpassed the upper or middle tercile of all afores' yields during the last 24 months.

Siefores evolution

As of June 2012, funds managed by afores[75] totaled 1.7 trillion pesos. This figure was equivalent to 11.4 percent of GDP and implied 14.7 percent growth in real terms in regard to the same month of the previous year (graph 35a). Básica 3 Siefores managed the largest amount of funds (30.8 percent of total funds as of June 2012 and 21.5 percent of affiliates[76]), followed by Básica 2 (27.5 percent of funds and 16.8 percent of affiliates) (graph 35b). [77] At the end of June 2012, the number of accounts managed by afores amounted to 47.4 million, 46.2 million of which (97.5 percent of total accounts) belonged to workers affiliated to the IMSS.[78]

As for the portfolio composition, as of June 2012, government securities' share in total assets was 57.9 percent, which implied a 0.7 percent decline in regard to the same month of the previous year. As a result, stock and private securities' share in the portfolio rose by 1.0 percent of

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[73] Article 74 of the IMSS Law.

[74] As of January 31, 2012 and after a bidding process, afore XXI-Banorte was chosen as the service provider.

[75] Includes the balance of Pensionissste accounts.

[76] Figures as of May 2012 corresponding to workers affiliated to the IMSS. They do not include ISSSTE contributors nor independent workers.

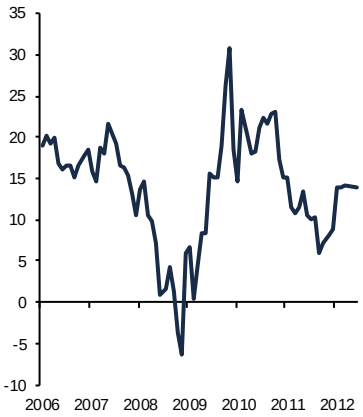
[77] Siefore básica 3 manages the funds of workers aged between 37 and 45, while Siefore básica 4 manages the funds of workers aged between 27 and 36. There are three additional types of Siefores: Siefores básicas 1 and 2, which as of July 28, 2011 modified the age range they were directed at (Siefore básica 1, for workers over 60; Siefore básica 2, from 46 to 49), and Siefore básica 5, for workers below the age of 25. Each of the funds has an investment regime that takes into account the risk profile and age of members and their investment horizons; thus, funds directed at the youngest workers are subject to a relatively riskier investment regime than Siefores básicas geared toward managing the funds of workers approaching retirement age.

[78] Includes: affiliated workers, allocated workers with certification, allocated workers with funds deposited in a siefore, allocated workers with funds deposited in Banco de México. The January increase in the number of accounts can be attributed to the fact that 4.2 million accounts (8.8 million pesos) were included in the XXI afore, that were previously deposited in Banco de México.

asset. The most conservative siefores (básica 1 and básica 2) invest most funds in low-risk instruments (graph 35c), while siefores that manage the accounts of relatively younger workers invest in higher-risk instruments with a higher expected return.

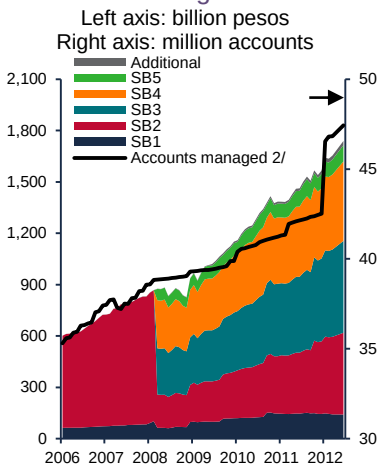
Graph 35
Siefores

a) Assets managed by afores



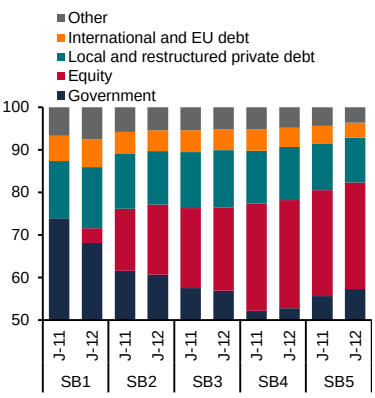
Figures as of June 2012
Source: Consar and Banco de México

b) Assets by type of siefore[1/] and number of accounts managed



Figures as of June 2012
Source: Consar

c) Structure of assets[1/]



Figures as of June 2012
Source: Consar

1/ SB1: siefore básica 1; SB2: siefore básica 2; SB3: siefore básica 3; SB4: siefore básica 4; SB5: siefore básica 5.
2/ The higher number of managed accounts recorded in January 2012 can be attributed to the fact that 4.2 million accounts were included in the XXI afore that were previously deposited in Banco de México.

Over the last four years, average fees paid by contributors have decreased by 6.3 percent annually. As of June 2012, commissions were YoY 1.3 percent of assets (table 7).

Table 7
Fee structure
Percentage of assets

Siefore	2008	2009	2010	2011	2012
Afirme Bajío	1.70	1.70	1.51	1.51	1.50
Azteca	1.96	1.96	1.96	1.67	1.52
Banamex	1.84	1.75	1.58	1.45	1.28
Bancomer	1.47	1.47	1.45	1.40	1.28
Banorte Generali	1.71	1.71	1.58	1.48	1.33 1/
Coppel	3.30	1.94	1.81	1.70	1.59
Inbursa	1.18	1.18	1.18	1.17	1.17
Invercap	2.48	1.93	1.73	1.72	1.59
Metlife	2.26	1.89	1.74	1.69	1.54
Pensionissste	1.00 2/	1.00	1.00	1.00	0.99
Principal	2.11	1.94	1.79	1.55	1.48
Profuturo GNP	1.96	1.92	1.70	1.53	1.39
SURA	1.74	1.74	1.61	1.48	1.31
XXI	1.45	1.45	1.42	1.40	N/A
Average 3/	**1.74**	**1.63**	**1.52**	**1.43**	**1.33**

Figures as of June each year
Source: Consar
1/ XXI-Banorte afore data
2/ Figures as of December 2008
3/ Weighted average by assets

Risks

As of June 2012, the market VaR of siefores was 1.0 percent of assets, 3.1 higher compared to the previous year (graph 36a). The weighted average maturity of basic siefores' debt securities –including Pensionissste− was 12.1 years as of June 2012. Likewise, as of March 2012, debt securities' modified duration[79] was 1.5 years (graph 36b), 13.4 percent higher in regard to the same month of the previous year. The sensitivity analysis suggests that if interest rates were raised by one hundred basis points, siefores would depreciate by 1.6 percent of their debt securities portfolio value (graph 36b). The stress analysis shows that if the changes in risk factors[80] that took place during the 2008 crisis occurred again, by June 2012, siefores would undergo a 12.9 percent depreciation of their asset value. [81]

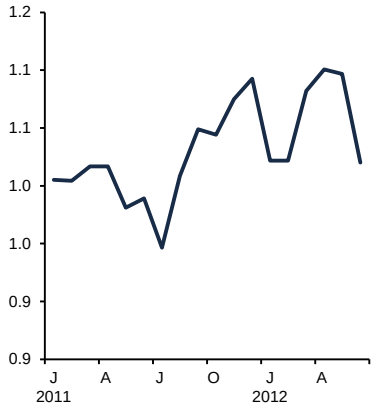
[79] For a definition, see footnote on page 58.

[80] Stock indexes, interest and foreign exchange rates.

[81] The period considered for the stress analysis was August through November 2008. During this period, siefores recorded a loss of 8.3 percent of their assets.

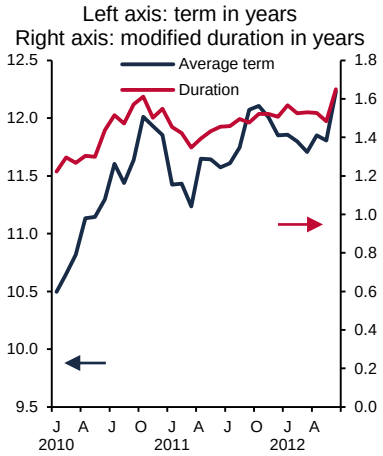
Graph 36
Term, duration and market risk: siefores

a) Evolution of siefores VaR[1/]: system



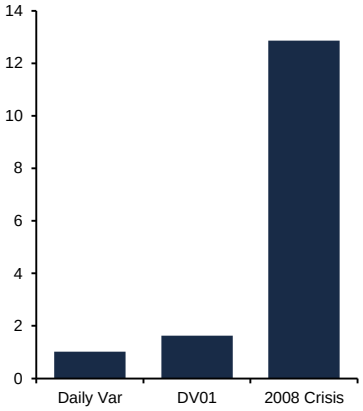
Figures as of June 2012
Source: Banco de México

b) Average term and modified duration of debt securities



Figures as of June 2012
Source: Consar and Banco de México

c) Risk measures: DV100, VaR and stress analysis



Figures as of June 2012
Source: Consar and Banco de México

1/ VaR at a 97.5 percent confidence level and a term of one working day

On the other hand, in response to a six standard deviation change in all financial variables – stock index, interest and exchange rates− a greater depreciation of 10.9 percent of managed assets would result from higher interest rates, whereas a decline of six standard deviations[82] in stock indexes would bring about a depreciation of 3.0 percent of assets (graph 38). [83]

Return and risk

Over the 36 months prior to June 2012, the weighted average annual return on siefores, in real terms and gross of fees, was 9.1 percent. The básica 5 siefore had the best performance, with a weighted average annual return of 11.1 percent in real terms. As for risk, graph 37b shows that the VaR of siefores is whithin the established regulatory limit for all intermediaries. Specifically, siefores with higher levels of VaR had the highest returns, and this correlation improved as of June 2012 compared to the same month of the previous year (graph 37a). Concurrently, afores with higher levels of VaR, displayed greater variability in returns a period later, whereas other afores with lower VaR, exhibited more stable returns (graph 37c). [84]

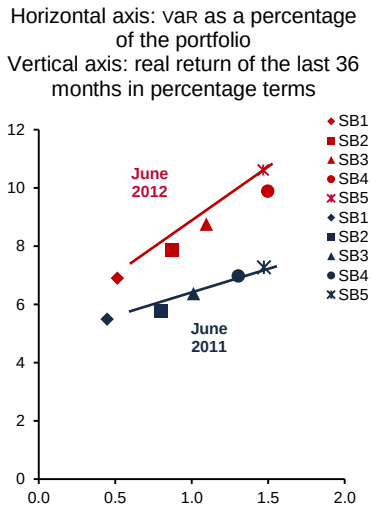
[82] As of June 2012, a six standard deviation change, in the case of the 720-day cete and the 360-day LIBOR return rates, was equivalent to a 133.9 and 156.9 basis point change, respectively. The calculations were made on the assumption that these changes are instantaneous.

[83] The Stock indexes used as benchmarks are the IPC for the Mexican market and the *Dow Jones* for the US market. A decline of six standard deviations would be equivalent to a reduction of 22.0 and 21.0, respectively.

[84] The comparison was made between the VaR at t and returns with management prices over the t to $t + 12$ month period.

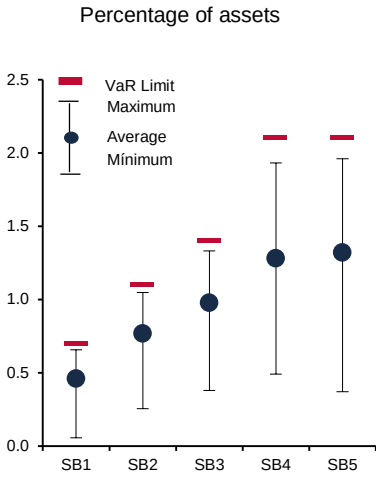
Graph 37
Return and risk indicators

a) VaR and profitability



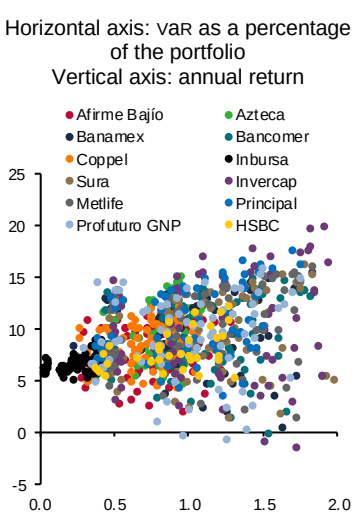
Figures as of June 2012
Source: Consar

b) Value at risk (VaR)[1/]



Figures as of June 2012
Source: Consar

c) VaR time series and annual profitability[2/]



Figures as of June 2012
Source: Consar

1/ Siefores VaR was calculated at a 97.5 percent confidence level and a risk term of one day.
2/ Calculated with management prices, that is, with respect to siefores' net assets without considering the fee provision nor historically charged fees, relative to the number of subscribed and paid-in shares.

Debt securities credit risk

Potential losses for siefores triggered by changes in their securities ratings have diminished,[85] for the daily credit VaR at a 97.5 percent confidence level was 0.1 percent of total assets as of June 2012 (graph 38b); in other words, 17.1 percent lower compared to the same month of the previous year. This fall can be attributed to the reduction in the share of securities with lower credit ratings in the siefores portfolio that took place in recent months. If securities ratings were downgraded by one and two levels, depreciation would be 0.3 and 1.1 percent of the asset (graph 38c).

[85] The footnote on page 49 describes the methodology employed, at a 97.5 percent confidence level and a one-day risk term.

Table 8
Annual nominal yields by afore[1/]
Percentage

Afore	2008	2009	2010	2011	2012	
					I	II
Afirme Bajío	5.03	12.44	12.00	6.77	10.91	10.42
Argos	6.40	N/A	N/A	N/A	N/A	N/A
Azteca	3.82	11.69	12.42	9.20	14.05	13.54
Banamex	1.18	16.75	14.21	7.17	13.20	13.89
Bancomer	1.20	14.50	14.03	7.35	13.13	13.68
Banorte Generali[2/]	1.28	11.07	13.57	1.55	13.60	13.17
Coppel	2.17	12.28	11.16	7.07	10.92	11.75
HSBC	3.73	12.42	13.01	N/A	N/A	N/A
Inbursa	6.71	8.58	6.87	6.11	6.93	8.00
Invercap	-2.19	15.17	19.44	7.42	16.83	14.65
Ixe	2.00	N/A	N/A	N/A	N/A	N/A
Metlife	0.98	13.32	14.97	7.63	13.99	14.06
Pensionissste	N/A	9.87	12.96	7.81	12.59	14.05
Principal	3.38	13.97	14.11	8.54	14.93	14.23
Profuturo GNP	0.31	15.62	15.07	5.49	11.74	12.93
Scotia	3.78	14.69	N/A	N/A	N/A	N/A
SURA	3.35	17.33	14.32	6.46	13.53	13.44
XXI	4.26	12.51	14.03	8.12	N/A	N/A
Average[3/]	**2.40**	**14.01**	**13.60**	**6.74**	**12.94**	**13.25**

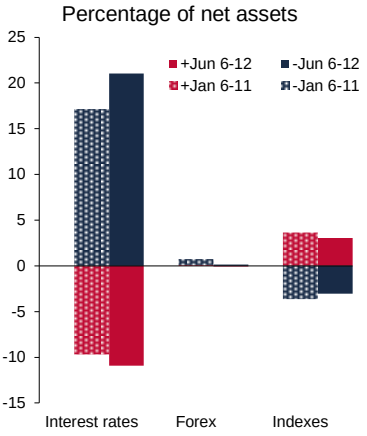
Figures as of the third quarter each year, except for 2012
Source: Consar
1/ Calculated with management prices
2/ XXI-Banorte afore figures from the first quarter onwards
3/ Weighted average by assets

Relevant events

In December 2011, Grupo Sura acquired the ING afore for 3.6 billion dollars, the biggest purchase ever made in the region by a Latin American company. In January 2012, the XXI-Banorte afore –a merger of the afores Banorte and XXI− became the fund manager with the highest number of affiliated accounts, 11.5 million accounts as of March 2012. At the beginning of 2012, the Pensionissste afore joined the competition among afores to draw contributors and is willing to receive transfers of individual accounts pertaining to workers affiliated to other fund managers. Workers whose individual accounts are managed by Pensionissste are given the opportunity to request transfer to other afores. Moreover, in May 2012, BBVA announced the sale of its pension fund managers in Latin America, including the Mexican afore.

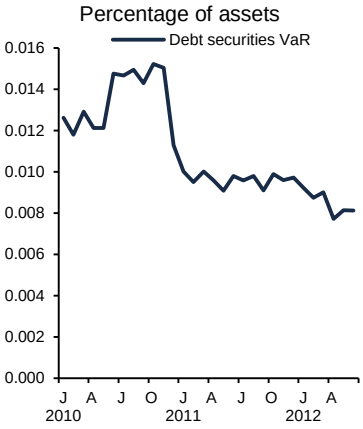
Graph 38
***Standard shift* and credit risk: siefores**

a) Losses or gains derived from a six-standard-deviation shift in risk factors[1/]



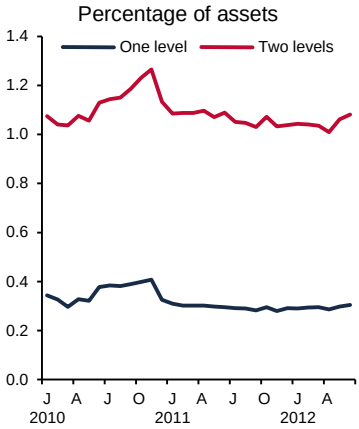
Figures as of June 2012
Source: Banco de México

b) One-day credit VaR at 97.5 percent



Figures as of June 2012
Source: Banco de México

c) Loss for one- and two-level downgrades: siefores[2/]



Figures as of June 2012
Source: Banco de México

1/ The *standard shift* corresponds to losses or gains obtained from the valuation in stress scenarios where risk factors are affected by a six-standard-deviation change. This deviation is calculated on the basis of monthly historical data as of January 2001.
2/ Includes debt securities and repo transactions.

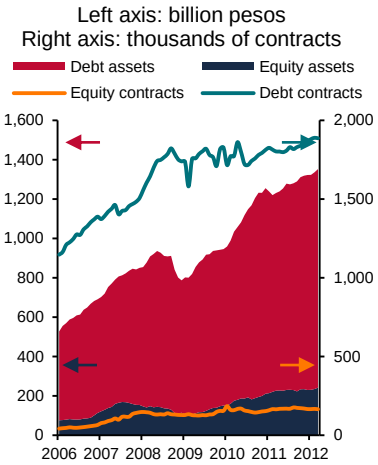
3.6 Mutual funds

As of June 2012, funds managed by mutual funds totaled 1.4 trillion pesos, accounting for 9.4 percent of GDP and real growth of 6.5 percent in real terms in regard to the same month of the previous year. Debt mutual funds managed 83.1 percent of assets, while equity mutual funds managed the remaining 16.9 percent.[86] Debt mutual fund assets were primarily concentrated in government securities –through both repo and outright transactions−, whereas equity mutual fund assets were mainly corporate and other mutual funds' shares (graph 39a and b). The number of mutual fund contracts was 2.1 million as of June 2012, which implied a 6.6 percent increase compared to the previous year.

[86] The Law on Mutual Funds establishes that debt mutual funds shall exclusively invest in assets such as securities, certificates or documents representing debt owed by a third party. By the same token, equity mutual funds, shall invest in assets such as stock, liabilities and other securities, certificates or documents representing debt owed by a third party.

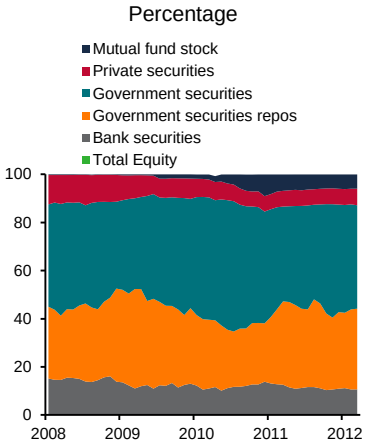
Graph 39
Mutual funds

a) Assets managed by mutual funds



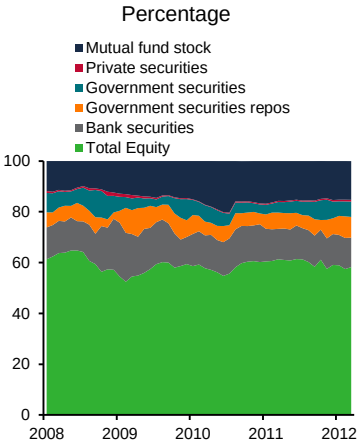
Figures as of June 2012
Source: CNBV

b) Structure of debt mutual fund assets



Figures as of June 2012
Source: CNBV

c) Structure of equity mutual fund assets



Figures as of June 2012
Source: CNBV

Returns

As of June 2012, equity mutual funds' YoY nominal return was 7.2 percent,[87] whereas that of debt mutual funds was 5.7 percent. The return of the latter is in line with the type of securities those entities concentrate their investments in, primarily in the short run. For their part, equity mutual funds exhibited a less positive performance, compared to that of the IPC as of June 2012 (9.96 percent).

Over the last four years, fees charged by mutual funds to their customers have fallen by 14.2 percent and they account for 0.9 percent of assets. Equity mutual funds charge higher fees on managed assets (1.1 percent), compared to fees charged by debt mutual funds (0.95 percent) (table 9).

Table 9
Fee structure[88]
Percentage

Type	2009	2010	2011	2012
Debt	1.11	1.16	0.96	0.98
Equity	1.22	1.37	1.29	1.14
System	**1.18**	**1.21**	**1.03**	**1.01**

Figures as of June each year
Source: CNBV
1/ Weighted average of all entities' asset share in the system

[87] Obtained by using mutual funds' share prices.

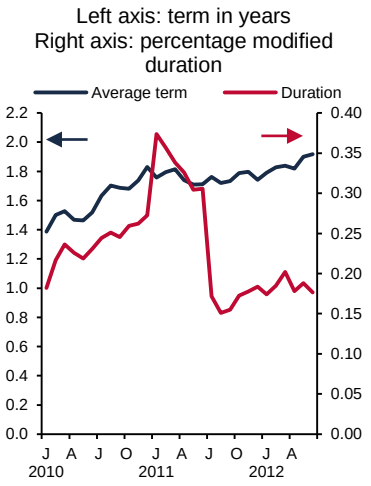
[88] Includes entry, exit, management, transaction and distribution fees.

Risks

The mutual fund portfolio is largely concentrated in short-term instruments, namely repos and cetes. In fact, these investments represented 36.1 percent of total portfolio; consequently, as of June 2012, the weighted average maturity was 1.92 years. Likewise, as of June 2012, deb securities' modified duration[89] was 0.2 years (graph 40a) and mutual funds' market VaR[90] was 0.5 percent of assets (graph 40b). The sensitivity analysis suggests that a one hundred basis point increase in interest rates would lead to a 0.1 percent loss in the portfolio value (graph 40c). The stress analysis shows that if the percentage changes observed during the 2008 crisis occurred again, by June 2012, mutual funds would undergo a 5.6 percent depreciation in their asset value.

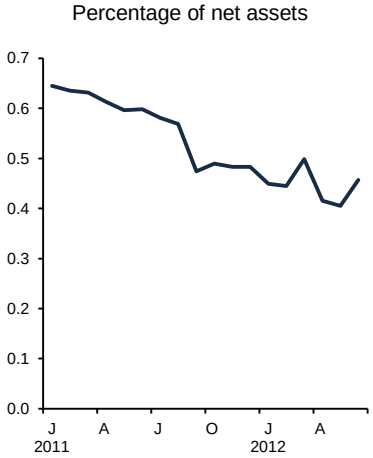
Graph 40
Market risk: mutual funds

a) Average maturity and modified duration of debt securities



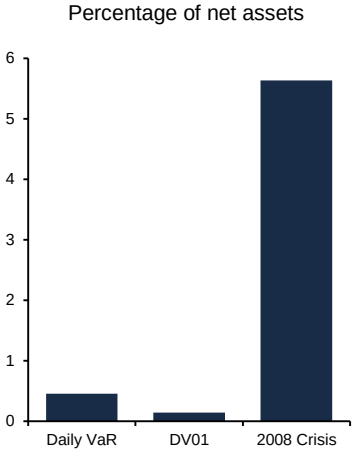
Figures as of June 2012
Source: AMIB and Banco de México

b) Mutual fund VaR



Figures as of June 2012
Source: AMIB and Banco de México

c) Risk measures: DV100, VaR and stress analysis



Figures as of June 2012
Source: AMIB and Banco de México

Graph 41a shows mutual funds' potential profits and losses in response to a six standard deviation change in all financial market variables –stock index, interest and exchange rates−. The biggest loss would be caused by a decline in the IPC (3.8 percent of asset if the IPC decreases by six standard deviations). A six standard deviation change in interest rates would bring about 0.83 percent asset depreciation, whereas changes in the exchange rate would have no significant effects on the portfolio value.

[89] See footnote on page 56.

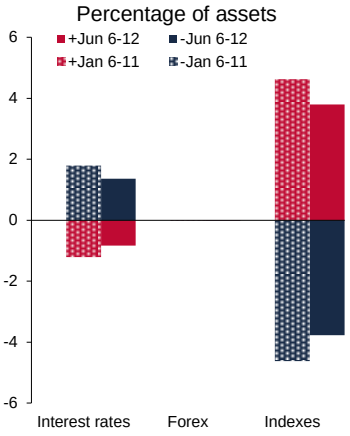
[90] One-day VaR at a 97.5 percent confidence level.

Debt securities credit risk

As of June 2012, debt securities credit risk, as measured by VaR[91], was 0.004 percent of mutual funds' assets, a 38.7 percent decline in regard to the same month of the previous year (graph 41b). This reduction was due to the increase share of AAA-rated securities in the portfolio. [92] In a scenario where securities ratings were downgraded by one and two levels, the loss would climb to 0.1 and 0.3 percent of total assets, respectively (graph 41c). Mutual funds' investments in European companies' debt securities amounted to 2.0 billion pesos as of June 2012, accounting for 0.1 percent of the total portfolio. With regard to state and municipal debt instruments, the balance totaled 1.6 billion pesos as of June 2012, which represented 0.1 percent of mutual funds' portfolio. This suggests that neither European nor state and municipal securities represent a significant exposure for the mutual fund portfolio.

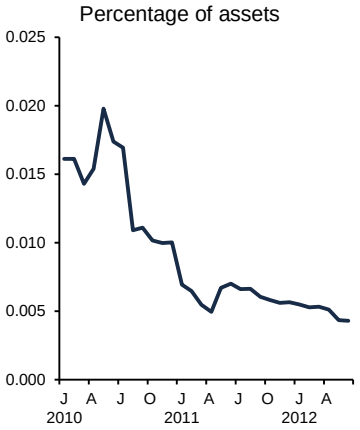
Graph 41
***Standard shift* and credit risk**

a) Losses or gains derived from a six-standard-deviation shift in risk factors[1/]



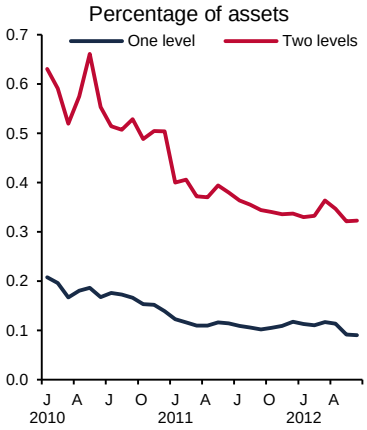
Figures as of June 2012
Source: Banco de México
1/ Includes debt securities and repo transactions

b) Daily VaR at 97.5 percent of the active



Figures as of June 2012
Source: Banco de México

c) Loss for one- and two-level downgrades: mutual funds[1/]



Figures as of June 2012
Source: Banco de México

[91] For further information on methodology, see note 49.

[92] One-day VaR at a 97.5 percent confidence level. The analysis does not include government securities.

3.7 Development banks and trusts

Development banks[93] and trusts are part of the Mexican financial system. Through these entities, the public sector provides services and products that complement those offered by private financial intermediaries. The role of institutions that make up the development financiaI system, namely development banks, Fideicomisos Instituidos en Relación con la Agricultura (FIRA) and Financiera Rural (FR), is to provide first- and second-tier credit and guarantees, while offering special development programs and technical assistance. Particularly, in times of economic distress, such intermediaries have become an important vehicle for the implementation of counter-cyclical policies.

Credit granting

As of June 2012, the direct loan portfolio of development banks, FIRA and FR totaled 528 billion pesos, equivalent to 17 percent of the total credit granted by the Mexican banking system as a whole (commercial and development banks). The latter also guaranteed 326 billion pesos-worth of additional loans ("induced credit"). [94] As of that date, the sum of both concepts was 854 billion pesos (figure 2), which accounted for a 27.5 share in total banking financing (graph 42). [95]

The direct credit balance can be classified in different ways: as first-tier, second-tier, and federal-government-agent credit; or as credit to the private sector, to the public sector, and federal-government-agent credit; or by market segment. As of the end of the first half of 2012, the direct loan portfolio recorded a real annual increase of 14 percent (graph 45c). Of the portfolio balance, first-tier credit accounted for 60 percent, second-tier for 38 percent and federal-government-agent credit for the rest. As of the date of the analysis, we note that first-tier credit (graph 43) and loans to the private sector (graph 44a) were prioritized.

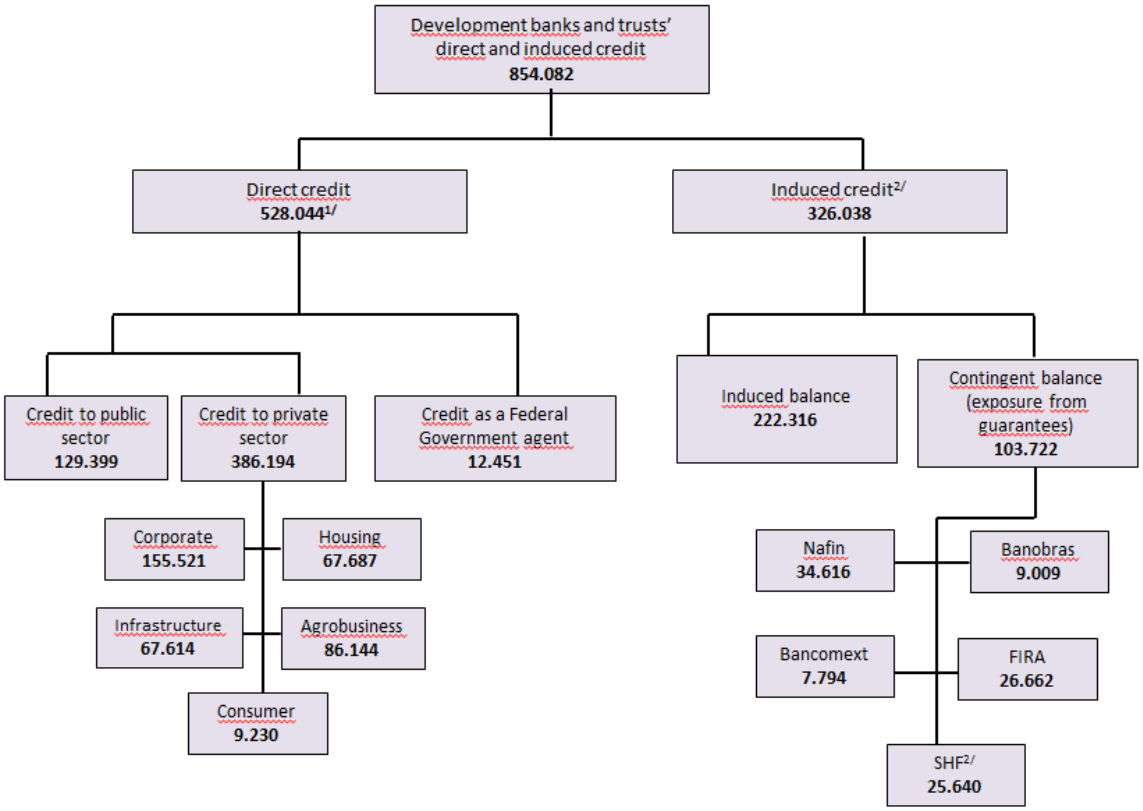
During the last four years, development banks' countercyclical action has been of utmost importance, exhibiting high growth rates in the placement of loans, mainly for infrastructure thanks to new financial schemes (real annual growth rate of 22.0 percent). By the same token, first-tier credit recorded a high growth rate, primarily to the non-financial private sector (real annual growth rate of 30.7 percent).

[93] The term development banks refers to the Banco Nacional de Obras y Servicios Públicos (Banobras), Nacional Financiera (Nafin), Banco Nacional de Comercio Exterior (Bancomext), Banco Nacional del Ejército, Fuerza Aérea y Armada (Banjército), Banco del Ahorro Nacional y Servicios Financieros (Bansefi), and Sociedad Hipotecaria Federal (SHF).

[94] Induced credit refers to the credit granted by diverse private financial intermediaries that is partially guaranteed by development banks, FIRA or FR. The amount includes guarantees issued by the SHF Mortgage Insurance. The figures mentioned are Banco de México estimates.

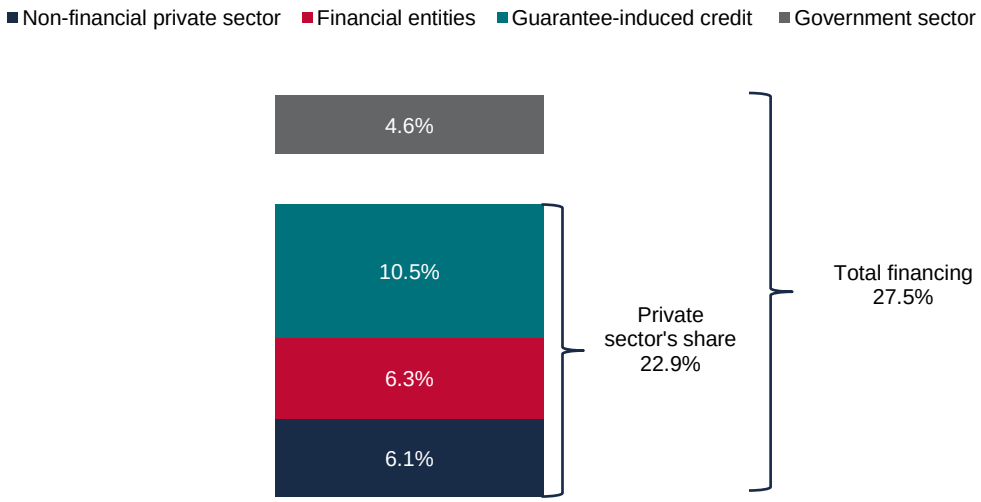
[95] Total financing refers to the sum of the loan portfolio and the induced balance by guarantees granted.

Figure 2
Direct and induced credit by guarantees granted
Billion pesos



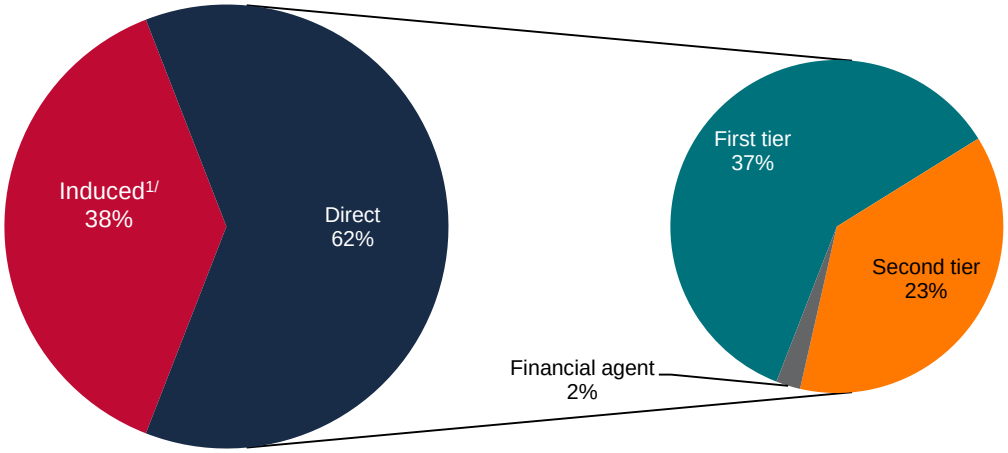
Figures as of June 2012.
1/ Development banks' credit balance. First-tier credit: 318.090 billion pesos; second-tier credit: 197. billion pesos.
2/ Includes guarantees issued by the SHF Seguros de Crédito a la Vivienda (scv).

Graph 42
Development banks, FIRA and Financiera Rural's share in total bank credit



Figures as of June 2012
Source: Banco de México

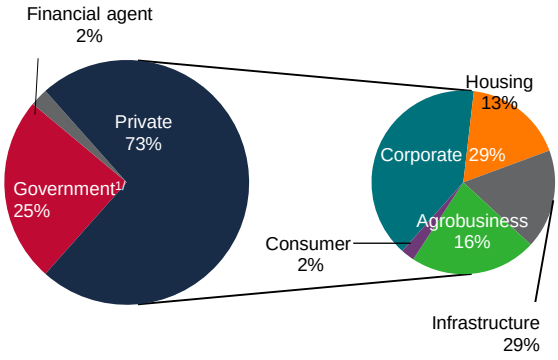
Graph 43
Composition of total credit balance
Percentage



Figures as of June 2012
Source: Banco de México
1/ Induced credit includes the SCV

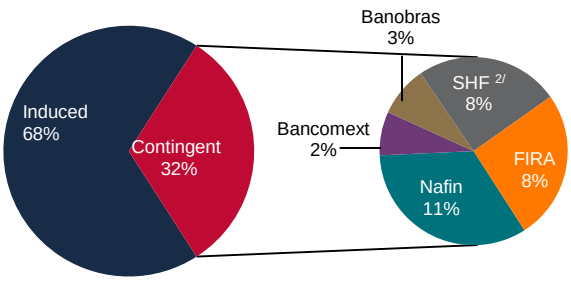
Graph 44
Composition of direct and induced credit balances

a) Composition of direct credit balance
Percentage



Figures as of June 2012
Source: CNBV and Banco de México
1/ Credit to states and municipalities totaled 100 billion pesos
2/ Includes guarantees granted by the scv

b) Composition of induced credit balance
Percentage



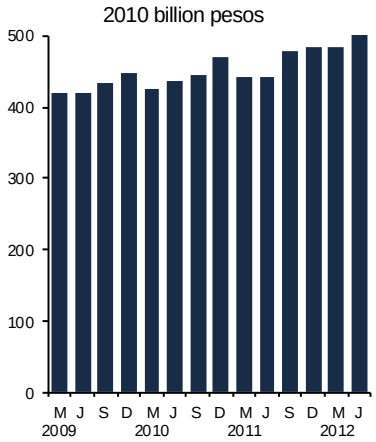
Figures as of June 2012
Source: CNBV and Banco de México

As of the end of June 2012, first-tier credit grew by 25 percent in real YoY terms (graph 45c). This was mainly driven by the Banobras and Bancomext real annual growth of 22 and 25 percent, respectively. During that period, Banobras and Bancomext accounted for 76 percent of first-tier loans.

With respect to the second-tier loan portfolio, as of the end of the first semester of 2012, Nafin, FIRA and the SHF[96] accounted for 94 percent. This portfolio registered a real annual increase of two percent, compared to its previous level. This change was a result of an increase in the FIRA portfolio, the second tier credit balance of which grew by 15.9 percent in real terms; concurrently, the SHF recorded a real YoY decline of 16.4 percent in the second-tier credit heading.

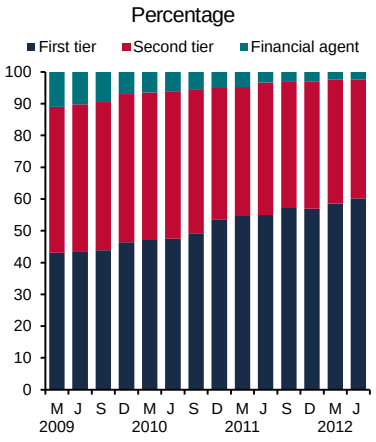
Graph 45
Loan portfolios of development banks, FIRA and Financiera Rural

a) Balance performance of the direct credit portfolio



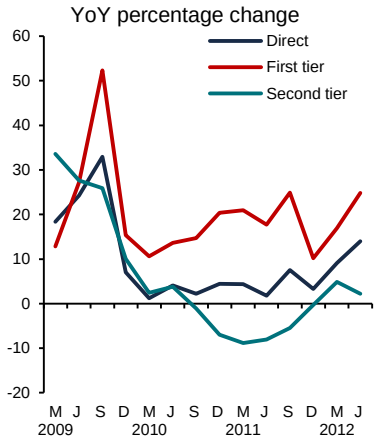
Figures as of June 2012
Source: CNBV and Banco de México

b) Composition of the direct credit portfolio



Figures as of June 2012
Source: Banco de México

c) Direct, first- and second-tier portfolios



Figures as of June 2012
Source: Banco de México

Trends in direct credit to the private and public sector

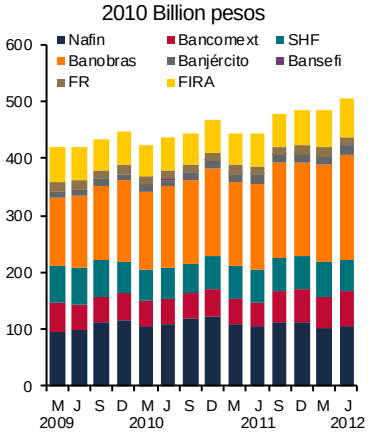
Direct loans granted to the private sector by development banks, FIRA and FR totaled 386 billion pesos as of June 2012 (graph 46b), which represented 73 percent of these institutions' total loan portfolio. During the period of June 2011 to June 2012, this portfolio registered real growth of 18 percent (graph 46c). Particularly, the 44 percent annual real growth rate in loans to the infrastructure sector is worthy of mention, followed by the corporate and consumer sectors with real growth rates of 22 and 21 percent, respectively.

The share of development bank loans in public-sector financing continues to recede. Over the last year, except for Banobras, whose main purpose is the funding of public-sector infrastructure projects (the federal government, state-owned entities, states and municipalities), loans to this sector decreased by 20 percent in real terms. Considering Banobras, the public-sector loan balance amounted to 129 billion pesos, corresponding to a growth rate of 8 percent compared to June 2011.

[96] Credit granted by the SHF includes personal and bridge loans.

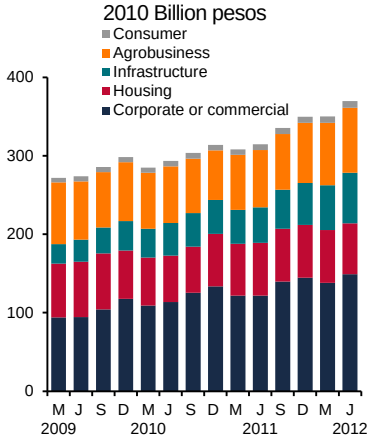
Graph 46
Direct loan portfolios of development banks, FIRA and Financiera Rural

a) Balance performance of the direct credit portfolio and share by institution



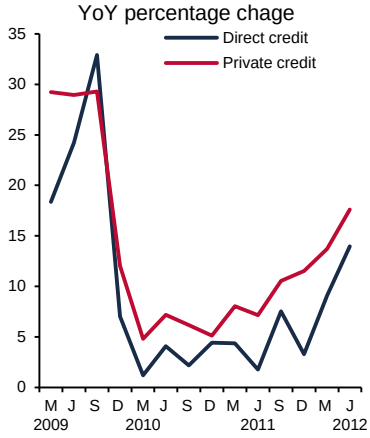
Figures as of June 2012
Source: CNBV and Banco de México

b) Performance of credit to private sector by type of activity[1/]



Figures as of June 2012
Source: Banco de México

c) Direct and private credit



Figures as of June 2012
Source: Banco de México

1/ For comparative purposes with other sections of this *Report*, private-sector credit by economic activity includes first- and second-tier loans.

As of June 2012, direct loans to the infrastructure sector for projects with a source of payment of their own reached 460.3 billion pesos, essentially distributed among road construction, power stations and water treatment plants. Over the last four years, loans to this sector have doubled, thanks −to a great extent− to the National Infrastructure Fund support to diverse projects through subordinated loans.

On the other hand, private sector loans granted by Nafin and Bancomext rose by 41 percent, as a result of greater support for the petrochemical and auto industry, as well as for large wind projects. With respect to Nafin, 38 percent of gross loan placement through development programs corresponded to production chains, 5 percent to the traditional discount program, equipment and micro-enterprises, and 53 percent to induced credit derived from the guarantees program.[97] Aproximately 87 percent of loans placed by Bancomext corresponded to first-tier transactions; among the recipients, the following sectors stand out: tourism, in-bond export, auto, autoparts, manufacturing and industrial parks. As of June 2012, direct loans granted to the housing sector dropped 4 percent in real annual terms. The decline can be mainly attributed to a fall of 7 percent in real annual terms of the SHF portfolio. During said period, and Banjército accounted for 99 percent of mortgage loans. Between June 2011 and June 2012, direct loans to the agribusiness sector granted by FIRA and FR rose by 13 percent in real terms.

Issuance of credit guarantees

A high percentage of development bank FIRA and FR transactions have focused on the granting of credit guarantees. Even though these transactions are not recorded on the balance sheets of development banks, they have a far from negligible impact on loan supply. As of June 2012, the so-called induced credit[98] amounted to 326 billion pesos, with an average guarantee of 32

[97] See box 3 in the *Financial System Report: September 2011.*

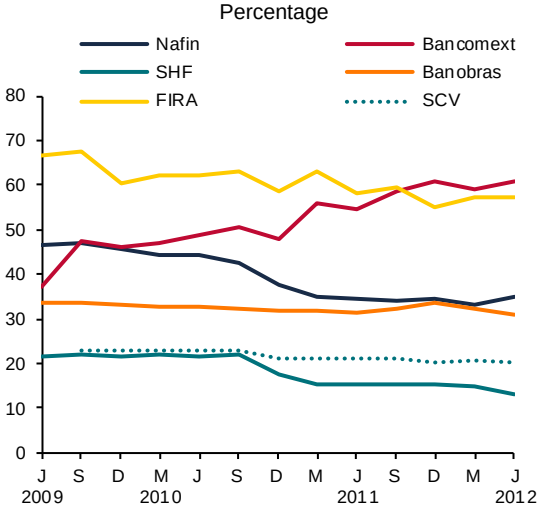
[98] See footnote 45 for a definition of induced credit.

percent (graph 47a). Induced credit is placed through commercial banks, non-bank financial institutions and loan securitization vehicles.

The contingent guarantee balance, in other words, the credit risk to which these institutions are exposed by virtue of said transactions, amounted to 103.7 billion pesos as of June 2012. This balance exhibited an annual increase of 6.2 percent in regard to the same period in the previous year. This jump was chiefly driven by higher Nafin and Bancomext balances, which presented growth rates of 17 and 25 percent, respectively. The SHF balance, including its mortgage insurance company, Seguros de Crédito a la Vivienda (SCV),[99] dropped three percent compared to June 2011, as a consequence of the cancellation of guarantees the SHF received in lieu of payment (graph 47b).

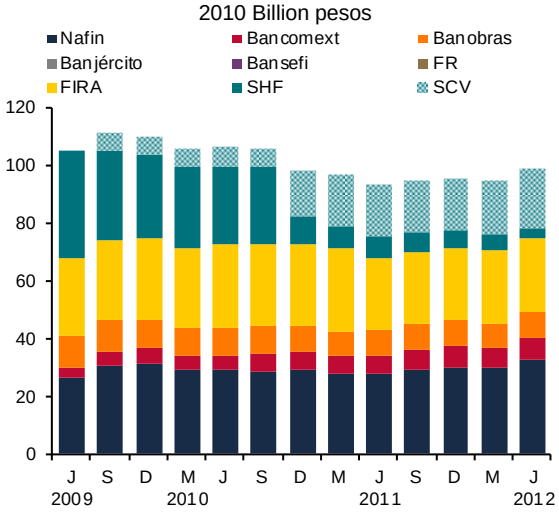
Graph 47
Contigent balance of guarantees granted by development banks, FIRA, Financiera Rural and SCV

a) Average guaranteed percentage by institution



Figures as of June 2012
Source: CNBV and Banco de México

b) Contingent balance performance by institution



Figures as of June 2012
Source: CNBV and Banco de México

As of June 2012, 84 percent of total credit guarantees had been granted by Nafin, SHF (including SCV) and FIRA; Nafin's contingent balance registered a real annual growth rate of 17 percent, while FIRA recorded a real annual increase of one percent. In regard to Bancomext, its loan guarantee portfolio jumped 25 percent in real annual terms due to the issuance of letters of credit and guarantees. 94 percent of guarantees granted by Nafin were channeled through its automatic guarantee program for small and medium-sized companies. [100] The rest was split between bond-issue guarantees (one percent) and the guarantee granted for the construction of Terminal II of the Mexico City International Airport (five percent), 50 percent of which belongs to Banobras. Likewise, Banobras' contingent guarantee balance decreased by one percent YoY; total guarantees granted by this bank were channeled to infrastructure projects at the three levels of government.

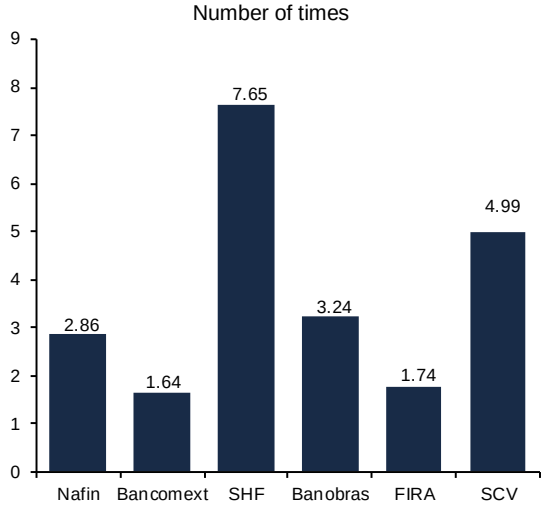
[99] In March 2009, the SHF subsidiary, Seguros de Crédito a la Vivienda (SCV), started operating, and, as of September 2009, the SHF transfer of guarantees to SCV began. As of June 2012, the migration of SHF guarantees to its mortgage insurance company amounted to 19.927 billion pesos. See box 3 in the *Financial System Report: September 2011.*

[100] See box 9 of the *Financial System Report: June 2010.*

The guaranteed loan balance of development banks is partially backed by counter-guarantee budgetary funds of up to 7.3 billion pesos, granted by several federal entities such as the Ministry of Economy, the Ministry of Finance and Public Credit (SHCP), among others. Said funds partially cover the losses that development banks would incur, in the event of default by borrowers. As of June 2012, the induced credit balance of 326 billion pesos translated into an average of 3.1 pesos of credit granted per peso guaranteed (graph 48a). If the SCV is excluded, the induced credit balance amounts to 218 billion pesos, and the average to 2.7 pesos of credit granted per peso guaranteed.

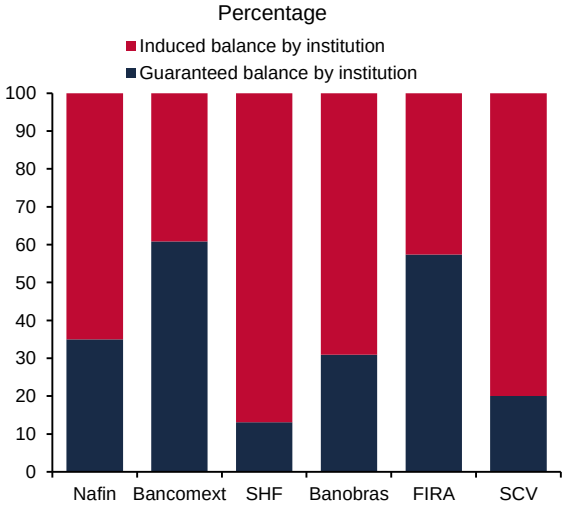
Graph 48
Performance of guarantees issued by development banks, FIRA and Financiera Rural

a) Pesos of final credit granted per peso guaranteed (induced credit by institution)



Figures as of June 2012
Source: Banco de México

b) Induced credit performance by institution as of March 2012



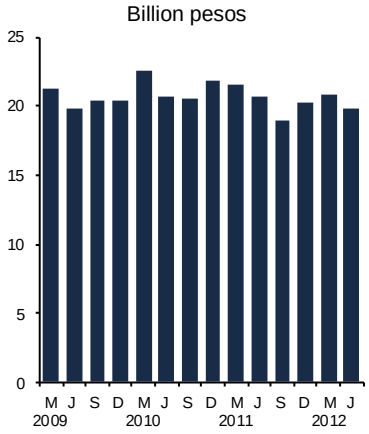
Figures as of June 2012
Source: Banco de México

Financial indicators

The YoY interest spread of development banks, FIRA and FR has remained at an average level of 21 billion pesos over the last two years (graph 49a). As of the end of June 2012, a 4 percent decline in the financial margin was recorded compared with the same period in the previous year. Regarding the creation of loan loss reserves, they fell down 48.7 percent *vis-à-vis* June 2011 (graph 49b), as a result of the decrease recorded in Banobras and the SHF. As of the first half of 2012, net profit rose by 44 percent (graph 49c), owing to the settlement of loans and the cancellation of reserves by reason of the application of new loan provision criteria –set forth by the CNBV– at the state and municipal levels.

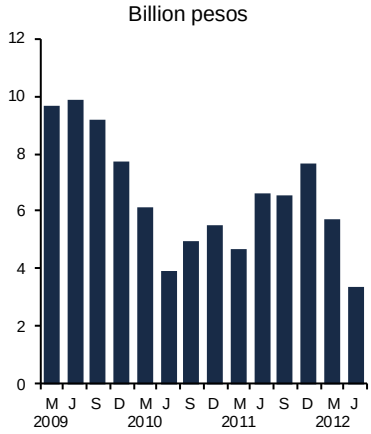
Graph 49
Financial indicators of development banks, FIRA and Financiera Rural

a) YoY Interest spread



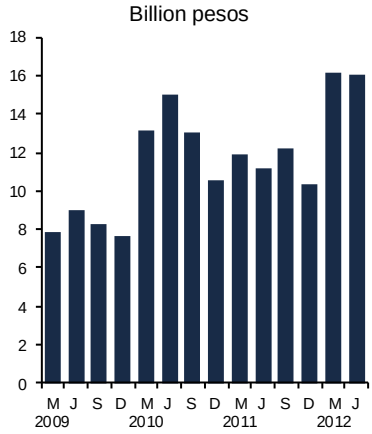
Figures as of June 2012
Source: CNBV and FIRA

b) YoY Creation of loan loss reserves



Figures as of June 2012
Source: Banco de México

c) Development entities' YoY net profit



Figures as of June 2012
Source: Banco de México

Development banks' average capital adequacy ratio has remained at 15.5 percent over the last three years. As of June 2011, the ratio was 15.3 percent.[101] The development banking sector is adequately capitalized, although, if its current growth pace persists, some entities would require more capital to keep up.

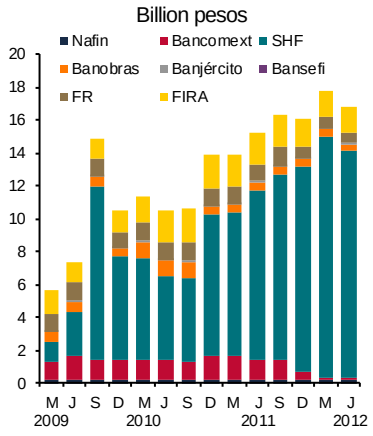
As of June 2012, development banks' past-due loans −FIRA and FR− rose 10 percent compared to the same period in the prior year, by virtue of an increase in the past-due mortgage portfolio, caused by the hardships that mortgage sofoles and sofomes had to deal with and the resulting conversion of loan portfolios in lieu of payment: second-tier loans replaced by first-tier loans (graph 50a). Essentially, the aforementioned hardships are a consequence of the deficiencies in these entities' business model, which grants long-term loans on the basis of short-term funding. This model has proved to be vulnerable in stress periods.[102] Yet, excluding the SHF from that calculation, past-due loans decreased by 41 percent versus June 2011, which implies other entities experienced an improvement in their loan portfolio quality. Simultaneously, the coverage ratio decreased from 1.6 to 1.4 times over the same period (graph 50b) and the delinquency rate remained below 3.4 percent. The adjusted delinquency rate followed a similar pattern, since write-offs were applied for low amounts. Thus, the average adjusted delinquency rate for the period was 3.6 percent (graph 50c).

[101] FIRA and Financiera Rural are not banking institutions, and therefore do not calculate capital adequacy ratios.

[102] Importantly, the economic slowdown that succeeded the last financial crisis had significant repercussions, particularly on sofoles and sofomes debtors, including housing developers. This made it absolutely clear that, besides said financial risk, there were serious deficiencies in credit granting procedures and portfolio management by certain intermediaries. Since then, the sector undergoes a consolidation process, with several entities being wound up, others acquired by banks and some others restructured.

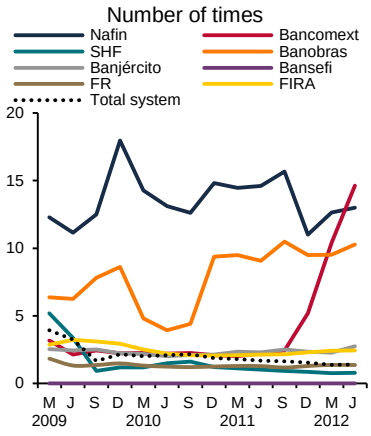
Graph 50
Loan portfolio of development banks, FIRA and Financiera Rural

a) Non-performing loans



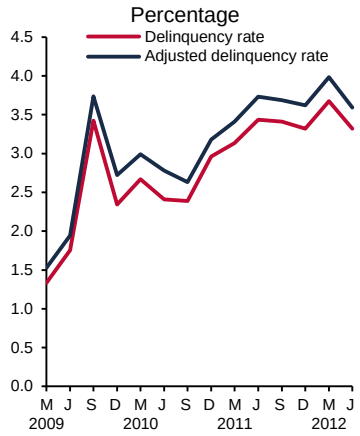
Figures as of June 2012
Source: CNBV and FIRA

b) Coverage ratio[1/]



Figures as of June 2012
Source: CNBV and FIRA

c) Delinquency rates[2/]



Figures as of June 2012
Source: CNBV and FIRA

1/ Loan loss reserves as a percentage of past-due loans.
2/ The adjusted delinquency rate is the past-due loan portfolio plus write-offs over the previous twelve months divided by the total loan portfolio plus write-offs over the previous twelve months.

3.8 Infonavit

The National Workers Housing Fund Institute continues to be the main provider of mortgages in Mexico. The number of loans granted in the first half of 2012 rose by 28 percent compared to the same period in the previous year. Yet, in real terms, the amount of loans granted decreased by 6.5 percent (graph 51a). [103] This can be explained by a more diversified credit portfolio available for workers, along with more alternative financing sources offered by the Institute, such as mortgage-backed securitizations.[104,105]

In addition to the direct loans granted by the Infonavit, other financial entities, primarily banks, have supported workers in the purchase or improvement of their homes through joint programs. For 2012, the Infonavit had anticipated to grant 490 thousand loans, with an investment of 186.3 billion pesos, 70 million of which would be put in by the financial sector through the above mentioned joint programs. In terms of sustainability, during 2011 and the first half of 2012, the Institute income increased, while indicators related to deterioration in the portfolio remained stable (graph 51c).

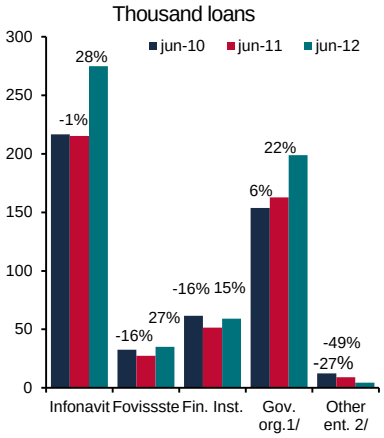
[103] As of June 2011, the Infonavit had allocated 55.9 billion pesos in housing financing, a figure well above last year allocation. As of June 2012, the amount granted was 54.5 billion pesos.

[104] From 2006 to 2010, the Institute granted 460 thousand credits per year on average.

[105] In 2012, the Infonavit started to offer two new financing options: fixed-rate loans in pesos and supplementary credits, additional to already existing programs, such as Cofinancing, Additional Income Cofinancing, Infonavit Total, Infonavit Total AG, Infonavit Support and Renovate your home.

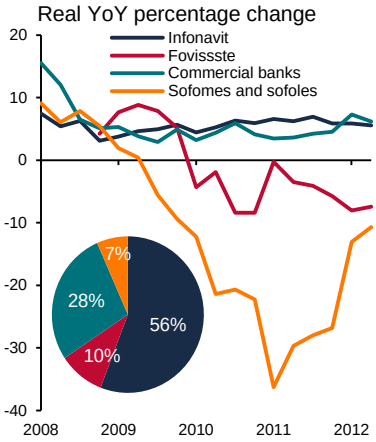
Graph 51
Housing market development indicators

a) Housing loans by originator



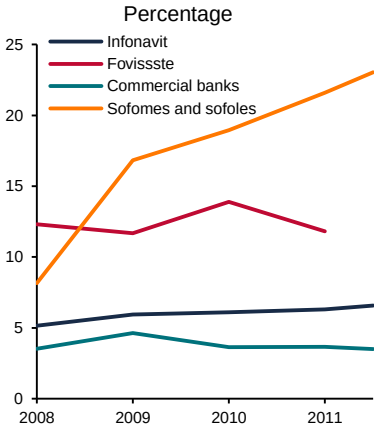
Figures as of June 2012
Source: Conavi

b) Housing portfolio[3/]



Figures as of June 2012
Source: AMFE and Banco de México

c) Housing portfolio delinquency rates



Figures as of June 2012
Source: CNBV, Infonavit, Fovissste and AMFE

1/ Includes: Conavi, Fonhapo and SHF
2/ Includes: Banjército, Pemex, CFE, Habitat, Issfam and state housing entities (orevis)
3/ Only includes the portfolio within each institution's balance.

In that period, record income figures were recorded due to workers' contributions, and the growth in the past-due portfolio reverted. During the first half of 2012, the Institute's annualized income totaled 142.6 million pesos, 7.4 percent above the same period in the previous year. This can be attributed to the 7.2 percent increase in workers' contributions and 12.1 percent growth in capital amortizations. Along these lines, the two latter are Infonavit's main source of income, and, as of June 2012, they accounted for 89 percent of the Institute's total revenues. As of the same date, the delinquency rate was 6.6 percent, 0.58 percentage points lower than in June 2011, owing to a better debt collection policy[106] and to the Infonavit Guarantee application.

With regard to financing sources, the Infonavit has continued to promote its housing certificates (Cedevis) issuance program, capitalizing on the demand for mortgage-backed securitizations by siefores, for these securities are considered to be low-risk instruments. [107] The demand for the latter is a result of the former's moderate delinquency level, similar to that of commercial banks' mortgage-backed securitizations (approximately 9 percent for both, as of June 2012) and far lower than that of securitizations issued by mortgage sofomes (39 percent as of June 2012).

[106] In 2005, the Infonavit established a three-stage debt collection model with a view to reducing the high levels in past-due loans. The first stage is regular debt collection, which is applied to workers who contribute throughout the credit life. The second stage is social debt collecting, aimed at recovering credits when debtors have lost their jobs, taking into account their capacity and willingness to pay, through a 4-stage process consisting of three months each: i) Preemptive collection: aimed at preventing default on payment through time extensions and unemployment insurance. ii) Administrative collection: seeks debtors' payment through collection efforts. iii) Portfolio recovery: debt restructuration for affiliates willing to pay through the implementation of the program Solución y Cuenta Nueva (Solution and New Account), which offers various support options. iv) Reconciliation: personal interaction to reach an agreement. Specialized collection is the third stage of the model through which judiciary covenants, allocations, transfers in lieu of payment, transfer of rights, liquidation products or write-offs are established.

[107] Cedevis are senior trust bonds backed by Infonavit mortgages. Infonavit loans are securitized through the cedevis scheme in capital markets. Cedevis represent an alternative funding source for the Institute, since resources stemming from placement are reinvested in new credits granted to affiliated workers.

Further, the credit portfolio backup of Infonavit's issuances was on average 31.5 percent more than the issue value. This was a considerably higher backup than that offered by mortgage-backed securitizations issued by banks and mortgage sofomes.

The Infonavit has continued those placements, although, as of the second half of 2011, the Institute resolved to target higher-income affiliates rather than the low- and middle-income sectors it had traditionally focused on. From June 2011 to June 2012, of the six issues placed by Infonavit, five were classified as Cedevis Total for an aggregate amount of 8.2 billion pesos (graph 52b). [108]

Nevertheless, the last traditional placement undertaken by the Institute in that period was the highest –five billion pesos− since the program started in 2004. These issues were welcome by investors: the 5 Cedevis Total issuances were placed at 81 basis points above the benchmark sovereign rate, whereas the tratidional issues at 78 basis points.

In December 2011, some amendments were made to the Institute's Law. The Senate of the Republic approved the draft reform of articles 43, 44, 47 and the transitory article eight. As a result, pensioners will be able to request to the Infonavit or corresponding afore the reimbursement of their retirement and housing funds; this has simplified the reimbursement procedure for workers' funds. [109] The Institute plans to carry out 500 transactions per year to return their savings to pensioners. It is estimated that the Infonavit will refund a total amount of 18 billion pesos to a million pensioners that have retired since 1997.[110] The reform also established the possibility of granting a second mortgage loan to workers with the joint effort of private sector companies. This opens the door to the private sector using, by means of compensation, the Infonavit origination and debt collection platform, thus facilitating the return of private intermediaries to the mortgage credit sector.

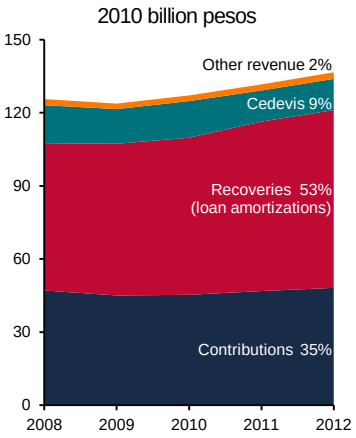
[108] Cedevis Total is the scheme through which Infonavit Total loans are securitized in capital markets. The Infonavit Total portfolio is made up of high-income affiliates with higher rates, house value and loan amount. Cedevis Total securitization may be completely managed by the Infonavit or another institution may participate as constructor. Of the five existing Cedevis Total issuances, the first two were cofinanced by Banamex and the last three were not cofinanced at all.

[109] The Infonavit or the Afores shall be responsible for the validation of data

[110] Within 18 months after the publication of the reform, reimbursement shall be completed. From September 8 to December 8 2011, the Infonavit paid 643,944 pesos to 11 thousand pensioners who won cases and complaint disputes against the Institute and thus recovered funds saved in their housing 97 subaccount.

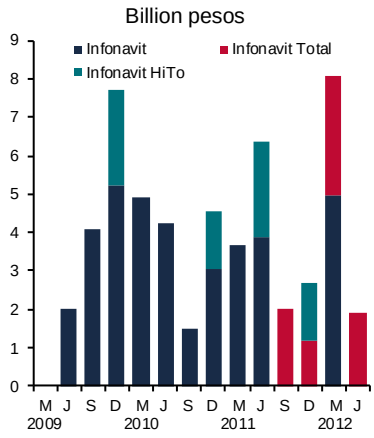
Graph 52
Infonavit fund sources

a) Infonavit fund sources



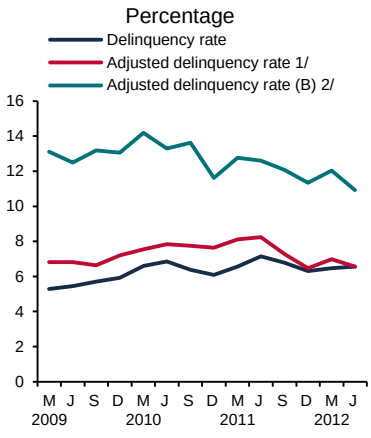
Figures as of June 2012
Source: Infonavit

b) Mortgage-backed securities issued by Infonavit



Figures as of June 2012
Source: Banco de México

c) Loan portfolio risk indicators



Figures as of June 2012
Source: Infonavit

1/ The adjusted delinquency rate is the sum of past-due loans, the accumulated flow of written-off loans in the last four quarters, and full-reserve loans divided by total loans plus the accumulated flow of written-off loans and full-reserve loans in the last four quarters.
2/ The adjusted delinquency rate (B) is the sum of past-due loans, the accumulated flow over the last four quarters of written-off and full-reserve loans, as well as loan payment extensions divided by total loans plus the accumulated flow over the last four quarters of written-off and full-reserve loans.

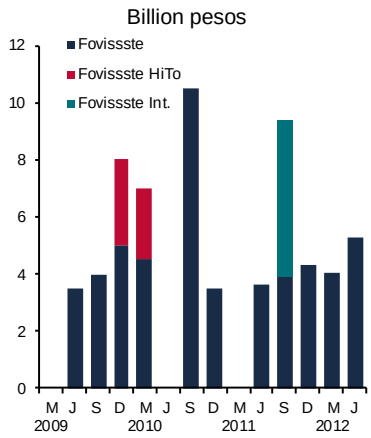
3.9 Fovissste

The ISSSTE Housing Fund (Fovissste) has endeavoured to make granting the of mortgage loans more efficient, by correcting the operating procedure deficiencies detected in 2006. Apart from improving origination criteria and strengthening operating procedures, recovery policies have been polished. This is the case for surplus loans, that is, loans granted that exceed the affiliates' ability to pay. The correction process has been undertaken via restructuring and agreements between the Fovissste and its affiliates. Surplus loans, regarded as troublesome, have a remaining average term of 24 years.

With regard to the portfolio quality, past-due loans decreased by 21.4 percent in real terms compared to the end of 2010. This improvement was reflected in the reduction in the delinquency rate which came down from 13.8 percent at the end of 2010 to 11.8 percent at the end of 2011. If carry-forward loans are considered as past-due loans, then the delinquency rate would be 14.1 and 12.0 percent, respectively. As for past-due loans coverage by loan-loss provisions, the coverage ratio picked up from 194 percent at the end of 2010 to 226 percent at the end of 2011.

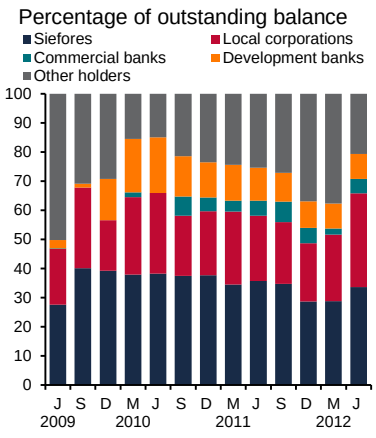
Graph 53
Fovissste mortgage-backed securitizations

a) New placements



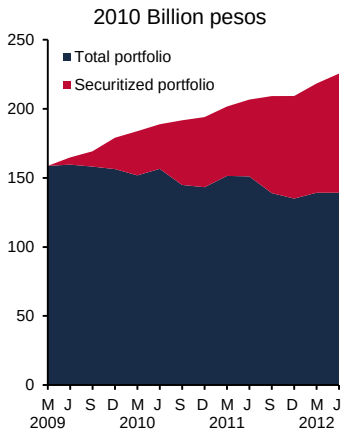
Figures as of June 2012
Source: Indeval and Banco de México

b) Holdings



Figures as of June 2012
Source: Indeval and Banco de México

c) Portfolio performance



Figures as of June 2012
Source: Indeval and Banco de México

Just as the Infonavit, the Fovissste has continued to place debt to support its mortgage credit granting function. The fund's success in preserving investor interest, especially in siefores, is reflected in three indicators: issue size (4.4 billion pesos on average), issue cost (128 basis points above the corresponding benchmark sovereign rate) and the low delinquency levels displayed thus far by these issuances (1.4 percent as of June 2012). As of June 2012, the Fovissste had issued five mortgage-backed securitizations for 23 billion pesos (graph 53).

3.10 Other financial entities and activities not subject to traditional banking regulation

The Financial Stability Board and the diverse international regulatory entities have paid greater attention to the follow-up of risks that may derive from financial entities and activities not subject to traditional banking regulation. There are indeed financial entities that can reach high levels of leverage and that partake in the transformation of terms and liquidity; namely, sofoles, unregulated sofomes, financial factoring and leasing companies, popular credit and savings companies (socaps, sofipos and credit unions), as well as non-financial entities whose core business is fund granting. Within this segment, asset securitizations are included (mortgage-backed and non-mortgage).

The vast majority of these entities and activities are subject to prudential regulation. This is not as strict and intensive as that for commercial banks. For instance, most of the above mentioned entities do not have to meet capitalization, risk management and portfolio diversification requirements, nor origination standards, among others. Even for those entities that are governed by a regulatory framework similar to that of the banking sector, like the sofipos and socaps, their supervision follow-up and structure might be insufficient due to a lack of infrastructure to conduct the intensive oversight banks do undertake (table 10).

Table 10
Regulation applicable to entities not subject to traditional banking regulation

Entity	Capitalization requirements	Deposit insurance	CNBV Accounting criteria	Prudential Criteria					
				Risk management	Provisioning of portofolio	Risk diversification	Liquidity ratio	Information Disclousure	Credit process
Regulated Sofomes y sofoles	✓	n.a.	✓	✓	✓	✓	×	✓	✓
Unlinked Sofoles 1/	×	n.a.	✓	×	×	×	×	✓	×
Unregulated Sofomes	×	n.a.	×	×	×	×	×	×	×
Financial leasing companies	×	n.a.	✓	×	×	×	×	✓	×
Factoring companies	×	n.a.	✓	×	×	×	×	✓	×
Warehouses	×	n.a.	✓	×	×	×	×	✓	×
Sofipos									
Level 1	✓	✓	✓	×	✓	✓	✓	✓	×
Levels 2 - 4	✓	✓	✓	✓	✓	✓	✓	✓	✓
Socaps									
Basic level	-	-	-	-	-	-	-	-	-
Level 1	✓	✓	✓	×	✓	✓	✓	✓	×
Levels 2 - 4	✓	✓	✓	✓	✓	✓	✓	✓	✓
Credit Unions	✓	n.a.	✓	✓	✓	✓	✓	✓	✓
Financial entities issuing debt	×	×	×	×	×	×	×	✓	×
Financial entities not issuing debt	×	×	×	×	×	×	×	×	×

1/ Unlinked sofomes are those that do not have patrimonial links with financial groups and banks.
Source: Ley de Instituciones de Crédito, Ley de Protección y Defensa al Usuario de Servicios Financieros, Ley General de Organizaciones y Actividades Auxiliares del Crédito, Ley de Ahorro y Crédito Popular, Ley para Regular las Actividades de las Sociedades Cooperativas de Ahorro y Préstamo y Ley de Uniones de Crédito, together with circulars issued by CNBV for each financial entity.

As of June 2012, the assets of this group and financial entities and activities not subject to traditional banking regulation accounted for a sixth (6.4 percent of GDP) of commercial banks' assets (39.4 percent of GDP). Sofoles and sofomes[111] stand out in this group, some of which underwent financial difficulties during the last crisis, particularly mortgage entities.[112] The increase in risk aversion, the short-term debt market contraction and the hardships to obtain long-term funds through securitizations undermined these entities' ability to renew or replace contracted liabilities, whose impact, by the way, is exacerbated by term mismatches on their balances (graph 54). [113]

Mortgage sofoles and sofomes continue to face difficulties to tap funds. Their relative size within the financial system assets is nonetheless small (1.1 percent of financial assets as of March 2011). Furthermore, the deterioration in mortgage-backed securities issued through the mortgage sofoles and sofomes portfolio has also continued, and consequently, they are no longer able to

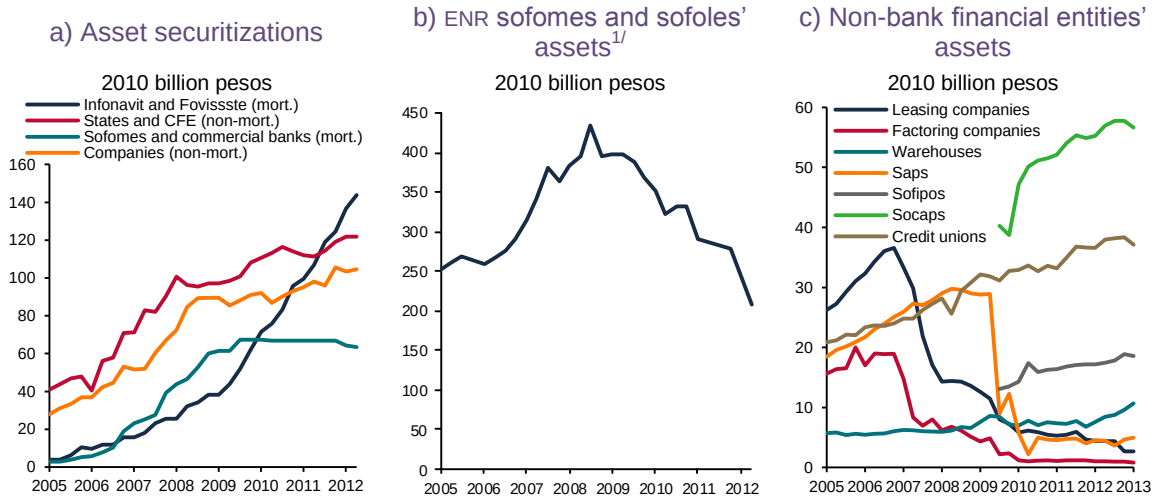
[111] Regarding sofoles, as of July 19, 2013, the related applicable articles will be abrogated; hence, authorizations granted by the Ministry of Finance and Public Credit, in accordance with article 103 fraction IV of the Law on Credit Institutions will no longer be valid. In order for them to operate, they will have to reform their Articles of Association; otherwise, they will be dissolved and liquidated. A progressive transformation of sofoles into unregulated sofomes has been observed over the last years. Currently, there are only 19 of the former.

[112] As of August 2012, auto sofoles and sofomes accounted for 38.1 percent of total assets, mortgage sofoles and sofomes for 32.7 percent, corporate ones for 14.8 percent and other sofoles and sofomes for 14.4 percent.

[113] Some of these intermediaries had to file for insolvency to restructure their liabilities or to liquidate their assets. Hipotecaria Su Casita and Metrofinanciera, the first and third mortgage sofomes before the crisis, came out of insolvency thanks to agreements with creditors and partnership recapitalization. In other cases, such as Loan and Home (Crédito y Casa) –with a market share of 11 percent before the crisis− and Hipotecaria Vértice, assets were liquidated. On September 25, 2012 Hipotecaria Su Casita declared in default.

resort to these financing sources (graph 54a). [114] This situation notwithstanding, there has been a recent surge in auto and corporate sofomes' debt issues, thanks to the entry of new market players.

Graph 54
Other financial entities and activities



Figures as of June 2012
Source: Indeval

Figures as of June 2012
Source: AMFE

Figures as of June 2012
Source: CNBV

1/ Included sofoles are those that have no patrimonial links with financial groups or commercial banks. The data of sofomes' assets only include those associated with the AMFE. The real drop in assets over the last years can be explained by some sofoles and sofomes' lower activity, the liquidation of some others and the reduced number of entities reporting data. In addition, the AMFE also includes other companies granting loans that are not registed as sofomes.

Popular savings and credit entities (PSCE), such as sofipos[115] and socaps[116] have grown at an average rate of 7.0 percent in real annual terms since 2010. Yet, these entities' assets accounted for a meager 0.8 percent of GDP as of june 2012. These entities provide financial services to communities where there is no presence of commercial banks. The regulation for PSCE sets prudential rules according to the size of the assets they possess.

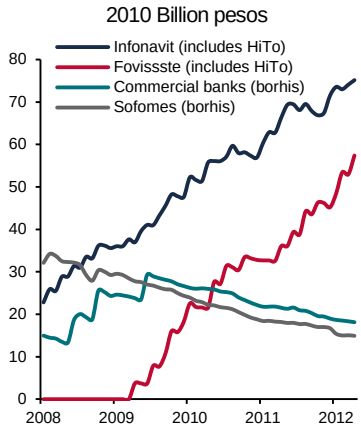
[114] For further information, see the *Financial System Report: September 2011*.

[115] The Popular Financial Corporations (sofipos) are microfinancial institutions incorporated as variable stock corporations, authorized by the CNBV to operate in conformity with the Popular Savings and Credit Law (LACP) and after a favorable opinion has been delivered by a Federation. They were born in 2001 with the purpose of safeguarding savers' deposits pertaining to the popular sector, that had operated informally thus far, and they conferred authorization, oversight and sanctioning powers to the CNBV. Additionally, they have an auxiliary oversight scheme undertaken by "Federaciones" and a deposit insurance managed by the SHCP through a Protection Fund. The CNBV authorizes the incorporation and functioning of sofipos, and assigns them an operation level (from I to IV) set forth in the LACP in accordance with the total assets they possess. The minimum capital requirement increases as assets do. Level IV sofipos are allowed a broader range of transactions, including credit card issuances, and the offer and allocation of mutual fund shares among their members. These mutual funds are managed by Sociedades operadoras de sociedades (Management companies of corporations) or by those in whose equity they participate in indirectly.

[116] The purpose of Savings and Credit Cooperative Societies (socaps) is to fulfill not-for-profit savings and credit transactions with their partners and financial intermediaries. They are part of the Savings and Credit Cooperative Societies (socaps) sector, regulated by the Law Regulating Savings and Credit Cooperative Societies (LRASCAP), published in 2009.

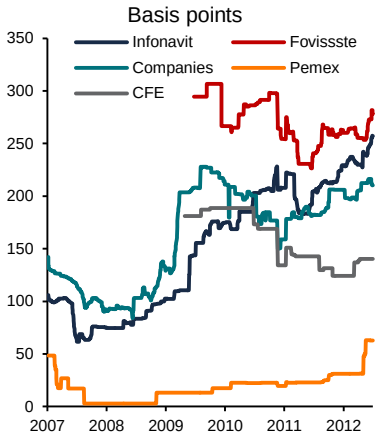
Graph 55
Characteristics of mortgage-backed securities

a) Outstanding amount of mortgage-backed securities



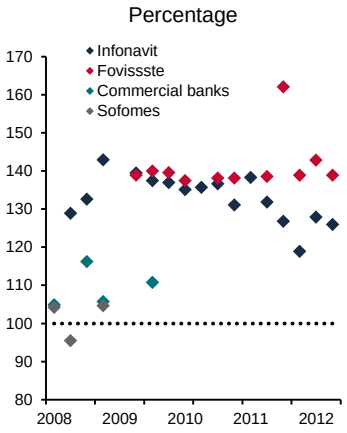
Figures as of June 2012
Source: Banco de México and Valmer

b) Exit coupon rate minus the udibono's return adjusted by term



Figures as of June 2012
Source: Valmer

c) Securitized portfolio amount as a proportion of issued amount



Figures as of June 2012
Source: BMV

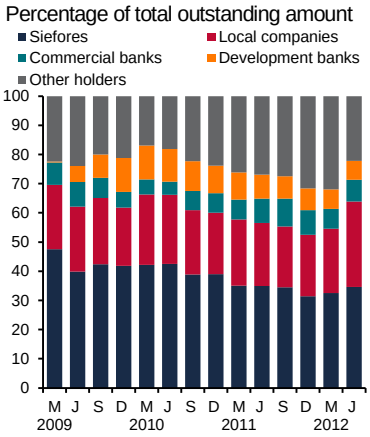
Asset securitizations

With the purpose of tapping funds and reducing asset-liability mismatches, mortgage sofoles and sofomes started to resort to mortgage-backed securitizations as of 2006. Hence, by April 2011, the securitized portfolio accounted for 23.4 percent of these intermediaries' portfolio. The increasing deterioration in the quality of underlying assets, together with the prevailing uncertainty in financial markets in the aftermath of the 2008 US crisis, deterred investors from these instruments, to the extent that not even a single mortgage-backed securitization by sofoles or sofomes has been issued since 2008. As of June 2012, these entities' valid mortgage-backed securitizations accounted for 24 percent of total mortgage-backed securitizations and 7 percent of all securitizations.

Investors have continued to invest in the mortgage-backed securitizations issued by the Infonavit, even during the 2008 crisis and very actively in recent years (graph 55a). As of 2009, Fovissste issues have been welcomed by investors. The conservative structuration practices of both organizations, requiring securitized portfolio levels per amount issued higher than 30 percent (graph 55c) and the issuances' sound performance, have built up confidence among investors −particularly regarding siefores− to such an extent that their joint current balance has surpassed non-mortgage securitizations issued by state entities and private companies in similar financial conditions (graph 55b and 56).

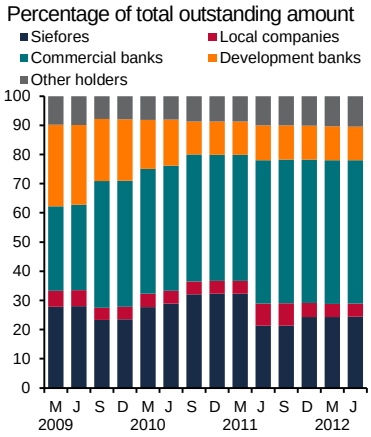
Graph 56
Mortgage-backed securities holders

a) Infonavit and Fovissste



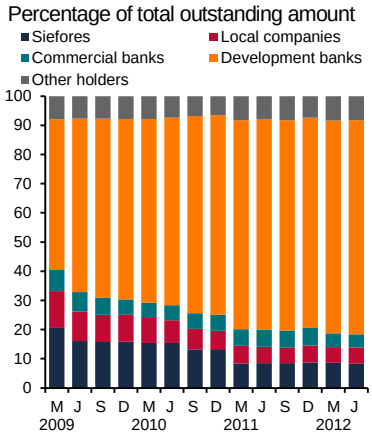
Figures as of June 2012
Source: Banco de México

b) Commercial banks



Figures as of June 2012
Source: Banco de México

c) Mortgage-backed sofomes



Figures as of June 2012
Source: Banco de México

There are some non-financial companies that devote themselves to credit granting. These companies abide by the same legislation as any other incorporated company; some of them issue debt instruments in the market, and are consequently subject to the regulation applicable to other issuers. Entities devoted to leasing and automotive or consumer financing are in the same situation. As in the case of unregulated sofomes, there are only available data for these companies provided they carry out debt issues. It is therefore difficult to determine the size of funds granted by these companies and unregulated sofomes.[117]

Risks associated to these financial entities and activities

Importantly, even though alternative fund sources have a stake in financial intermediation and present benefits for financing customers, they also represent a source of risks that must be monitored. Firstly, levels of leverage must be followed up, as well as the sector's exposure to refinancing risks that result from granting long-term loans based on short-term financing. As the sector grows, the complications that derive from excessive leverage or poor liquidity risk management, may have a negative impact on the functioning of the financial system as a whole.

Secondly, the interactions between these entities and the banking sector must be assessed in order to minimize the possibility of contagion between the sector not subject to traditional regulation and some regulated institutions.[118] As of June 2012, banks' exposure to these entities represented 2.4 percent of the performing commercial bank loan portfolio. Such exposure is thus limited and is not deemed to be a problem.

Lastly, the possibility of having easier access to financing through this sector may result in overindebtedness in some population segments and companies. Likewise, since these funds are not

[117] As of December 2011, companies of this kind issuing debt on security markets held assets for 4.2 percent of their capital, and the granted loans to assets ratio was 66 percent, similar to financial entities whose main purpose is lending.

[118] The constant revision of the regulatory framework for commercial banks' exposures to these entities and activities is fundamental. With respect to upcoming banking prudential regulation in Mexico, a number of measures aiming at alleviating some of the above mentioned risks associated to these entities are currently being taken into account. Specifically, in the case of Mexican banks, the new Basel III capitalization rules introduce more elevated capital requirements on securities banking positions. Additionally, current amendments to the regulation include a new methodology for the creation of provisions based on retail portfolio expected losses, which also apply to the entities in question.

subject to origination criteria as strict as those applied to banks, the quality of loans could easily deteriorate. It is therefore essential that authorities rely on sufficient information to monitor these financial entities and activities' performance, highlighting the relevant information necessary to assess their asset growth and risk indicators status.

4. Financial markets

In recent times, Mexican financial markets have demonstrated to be sufficiently liquid and thus to have promoted an adequate price setting process. Nevertheless, local markets are far from being immune against foreign market difficulties, particularly from the European market. The most evident contagion event took place in the foreign exchange market: unprecedented exchange rate levels that had not been recorded since March 2009 gave rise to the not inconsiderable peso depreciations of the fourth quarter of 2011 and the first quarter of 2012. These depreciations were partly due to the higher global risk aversion caused by the downfall in European equity and debt markets. In the same way, the securities market was hit during the last quarter of 2011, although the government debt market has exhibited a particularly positive performance. Significant reductions in interest rates along the debt securities' yield curve have been observed throughout 2012, with record lows in virtually all maturities; also, the curve has considerably flattened. Finally, in spite of high-volatility periods, the equity market has revived thanks to the issuance of new instruments.

4.1 Foreign exchange market

During the period covered by this Report, the peso underwent periods of high volatility, due to a great extent to the prevailing circumstances in foreign financial markets (graph 57a). However, observed depreciations were temporary and the peso gradually adjusted to the trend followed by the Mexican economic fundamentals. Of these, the sound fiscal, monetary and foreign exchange policies are worthy of mention, together with a moderate debt to GDP ratio and the record high levels in international reserves, strengthened by the IMF Flexible Credit Line (graph 57b).

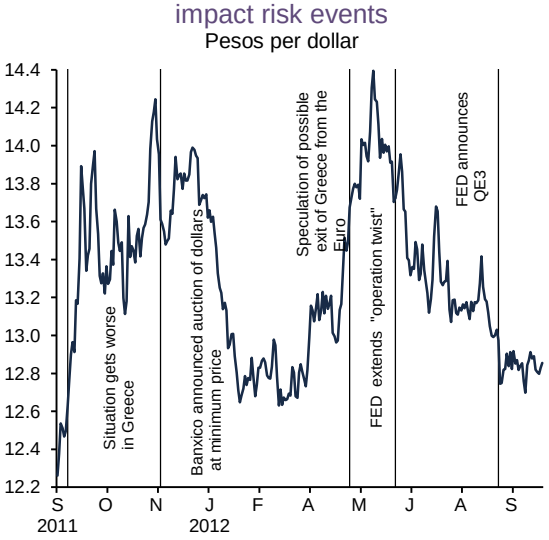
Over the last months, it is possible to distinguish four episodes that confirm the peso quotes' degree of sensitivity to prevailing conditions in international markets. The first occurred during the fourth quarter of 2011, as a result of the uncertainty triggered by the Greek debt restructuring. During that period, the exchange rate surpassed 14 pesos per dollar, thus exhibiting a nominal depreciation of thirteen percent at the end of the year. In response, the Foreign Exchange Commission called off the auction of US-dollar put options to Banco de México and resumed the daily auctioning of 400 million dollars at a minimum exchange rate. [119]

The second episode took place during the first quarter of 2012, and was characterized by relative calm, owing to actions implemented by the ECB at the end of 2011 and the release of more positive than expected economic data in the US. The peso appreciated significantly over that quarter, registering a nominal gain of eight percent at the end of such period.

[119] For further explanation on auctions of US-dollar put options to the central bank and daily US-dollar auctions, see box 11 of the 2009 *Financial System Report.*

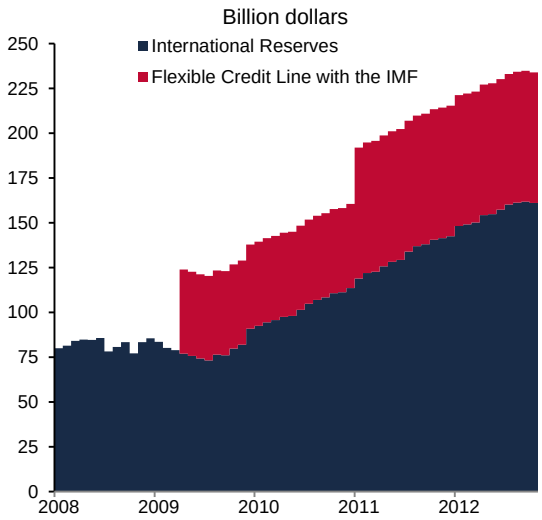
Graph 57
Foreign Exchange Rate and International Reserves

a) Fixed exchange rate and significant high-impact risk events



Figures as of October 2012
Source: Banco de México

b) International reserves



Figures as of October 2012
Source: Banco de México

During the third episode, which occurred in the second quarter of 2012, the publication of weak economic data for the US and the lack of agreement in Europe triggered a new period of volatility, during which the peso reached levels that had not been registered since March 2009. In May, the US-dollar auctioning at minimum prices resulted in up to two allocations, and the speculative peso long position at the Chicago Mercantile Exchange (CME) decreased by more than 4.4 billion dollars. Likewise, the nominal exchange rate adjustment and the inflation trend allowed for real exchange rate depreciation during that episode, which alleviated the negative impact of the international environment on the Mexican economy.

Lastly, during the third quarter, a new episode of relative stability took place, based on certain central banks' measures, like the ones implemented by the Bank of England, the US Federal Reserve, the Bank of Japan and the ECB.[120] Particularly, measures adopted by the ECB contributed to substantially reducing the catastrophic risk of a potential default on the part of any EU member countries, and even their exit from the Monetary Union. The resulting positive environment favored an appreciation of the peso, which came back to the lows observed in the first quarter. This perception change was also reflected in the adjustment of speculative positions of peso futures at the CME: the beginning of the quarter saw a short peso position, which gradually became a long position and even reached a level close to record highs (graph 58a). Thus, the peso quote consolidated at levels under 13 pesos per dollar and the outlook for its future performance greatly improved (graph 58b).

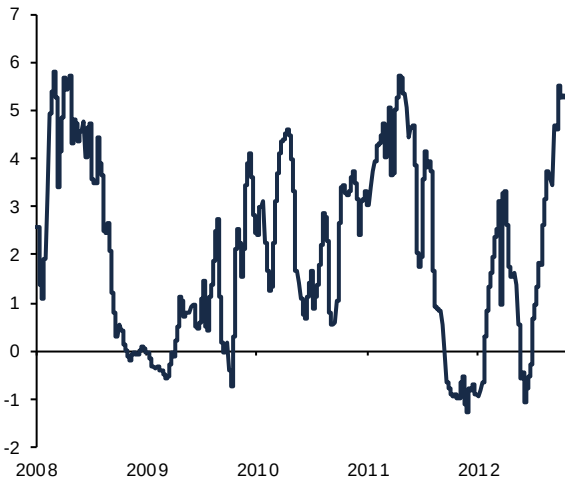
Despite the volatility observed during the period covered by this Report, the foreign exchange market conditions were far more orderly than during other similar past episodes. For instance, in September 2011, the implicit volatility of exchange rate options and the peso bid-ask

[120] The Bank of England increased its asset purchase program from 50 to 375 billion pounds. The ECB announced the new unlimited purchase program of sovereign bonds with a maturity of up to three years and on the condition that the involved country has a rescue program. The Federal Reserve System announced a third round of asset purchases in mortgage-backed bonds for a monthly amount of 40 billion dollars, and did not specify a closing date for such purchases. The Bank of Japan increased its asset purchase program from 10 to 55 trillion yens.

spread rose. Nonetheless, the highest levels observed during that period were a quarter of those registered in 2009 (graph 59a and b). On the other hand, foreign exchange market liquidity, as measured by spot trading volume, spiked up to pre-crisis levels (graph 59c). In addition, we should note that the domestic currency has gained in relative importance in international foreign exchange markets, by virtue of its convenient operation –the market is now open twenty-four hours a day– and the transparent and rare intervention of authorities in Mexican foreign exchange policy. Lastly, the foreign exchange rate regime has represented a significant adjustment factor in the determination of macroeconomic policy in Mexico, for it allows the partial absorption of diverse shocks impacting the domestic economy and contributes to the orderly adjustment of the real exchange rate.

Graph 58
Peso positioning and forecasts

a) Peso net speculative position in the CME[1/]



Figures as of October 2012
Source: Bloomberg and Banco de México
1/ Chicago Mercantile Exchange

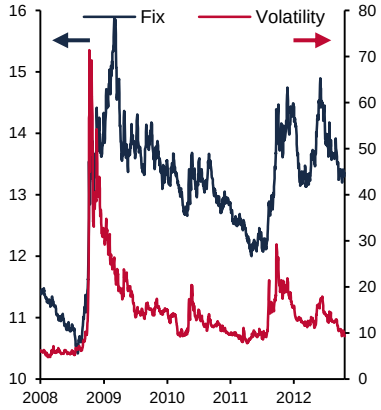
b) Foreign exchange rate forecasts

Figures as of September 2012
Source: Banco de México surveys to economic analysts

Graph 59
Foreign Exchange Market

a) Foreign exchange rate and implied volatility in 1-month options

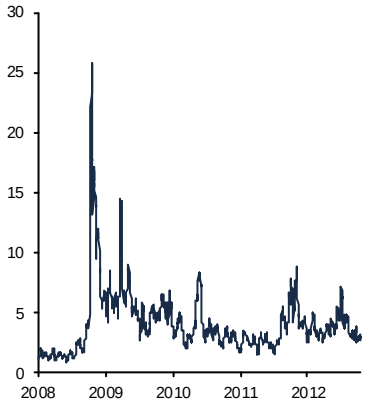
Left axis: pesos per dollar
Right axis: percent



Figures as of October 2012
Source: Banco de México and Bloomberg

b) Foreign exchange rate and bid-ask spread[1/]

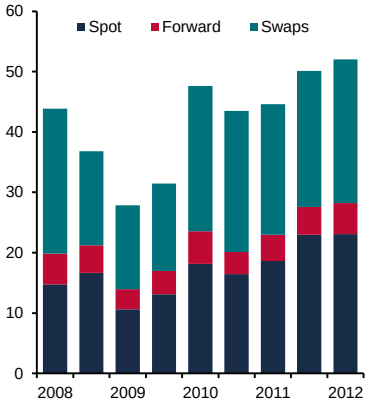
Cents



Figures as of October 2012
Source: Banco de México

c) Total foreign exchange turnover

Daily average in million dollars



Figures as of April 2012
Source: BIS triennial survey and biannual surveys of the Bank of England and the Fed.

1/ 20-day moving average

4.2 Capital market

Debt market

In spite of the exacerbation of global risk aversion during the period covered by this Report, foreign investors' demand for peso-denominated fixed-rate instruments continued to rise. This has been observed since the inclusion in 2010 of government debt in the World Government Bond Index (WGBI).[121] Furthermore, this trend has been accompanied by a far from negligible fall in interest rates that has benefitted debt issuers insofar as the improvement of conditions to access financing in pesos or other currencies is concerned.

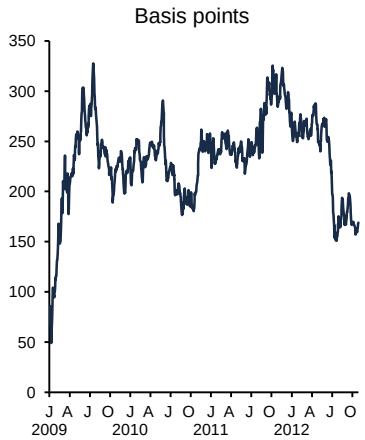
As for federal debt, the returns on fixed-coupon bonds considerably decreased for all maturities, especially in the middle long section of the peso-denominated curve. Moreover, the slope of the curve, as measured by the 30- and 3-year return spread, substantially dropped too, reaching levels not observed since 2009 (graph 60a). The described flattening of the return curve is all the more significant when considering that, during the second quarter of 2012 and despite the peso volatility and depreciation of that period, return rates reached record lows for all maturities above three years. Further, the record lows of US interest rates notwithstanding, the interest rate spread between US dollar- and peso- denominated instruments has considerably decreased (graph 60b). It should also be noted that the flattening of the return curve is not exclusive of Mexico, since other emergent markets have also seen reductions in long-term interest rates. This pattern has been nevertheless more pronounced in Mexico (graph 60c), although, over the last months, a strong correlation between the peso and US dollar rates has been observed. In that sense, in the wake of

[121] For an explanation of the WGBI index, see the box 1 of the 2010 *Financial System Report*.

the minimum levels reached and the postponement of expected additional measures by the Fed, US interest rate highs have had an impact on Mexican rates.

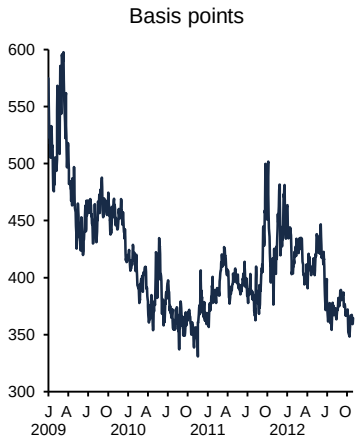
Graph 60
Interest rates

a) Slope of the 30- and 3-year return curve (Mexico)



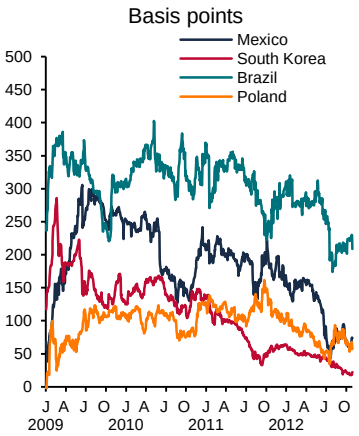
Figures as of October 2012
Source: Pricing Services Provider

b) 10-year interest rate spread between US and Mexico



Figures as of October 2012
Source: Bloomberg

c) Slope of the 10- and 2-year return curve



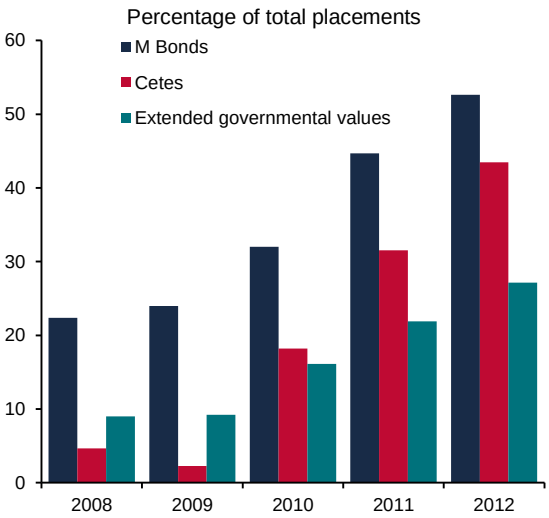
Figures as of October 2012
Source: Bloomberg

This disconnection between interest and foreign exchange rates is unprecedented in Mexico. This very particular situation may be explained by a combination of extremely loose monetary policies in the main developed countries and the sound Mexican macroeconomic environment. Hence, over the last months, foreign investment in peso-denominated government securities has continued to significantly increase (graph 61a). Specifically, regarding the cetes, the most notable increase was observed in the first quarter of 2012, as a result of a greater number of foreign investors taking advantage of arbitrage opportunities in the forward and money markets (graph 62).

Thus, the long-term holdings of securities by foreign investors continued to rise virtually throughout the whole period covered by this Report, and has now reached historic highs. In fact, by the time this report was written, nearly half of the internal fixed-rate government debt was in hands of foreign institutional investors. The intervention of these actors allows the government to tap funds under more convenient circumstances, and since these are long-term investments, they contribute to the stability of market returns. However, this fact poses a not inconsiderable future challenge, for institutional investors usually hold their investments to maturity, what reduces the securities secondary market turnover, and therefore might have an adverse effect on the liquidity of such market, considering institutional investors hold a substantial share of such issues. In the case of the peso-denominated sovereign debt, foreign investors already hold more than 70 percent of the total amount placed at certain maturities (graph 61b).

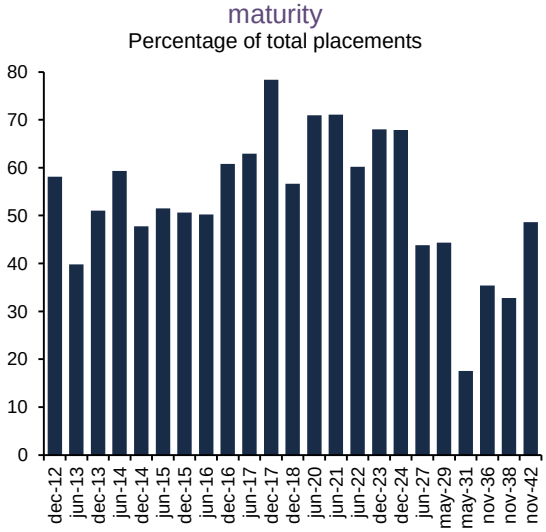
Graph 61
Government securities holdings by foreign investors

a) Holdings of different broad government securities[1/]



Figures as of October 2012
Source: Banco de México

b) Concentration of foreign holdings by bond maturity

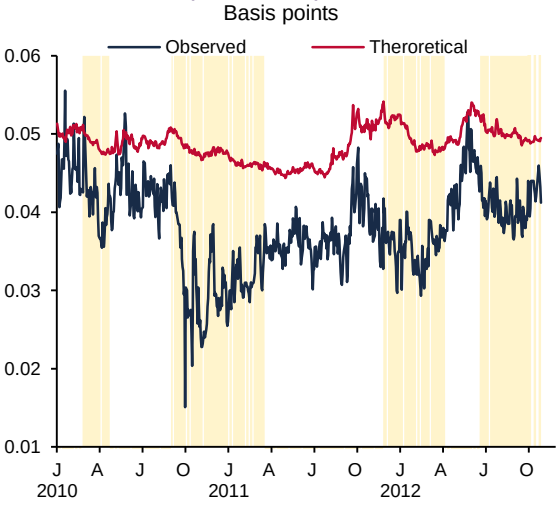


Figures as of October 2012
Source: Banco de México

1/ Securities issued by the Federal Government, Banco de México and the IPAB.

Graph 62
Foreign exchange rate and relevant variables

a) Forward points



Figures as of October 2012
Source: Banco de México and Bloomberg

b) Foreign holding of cetes

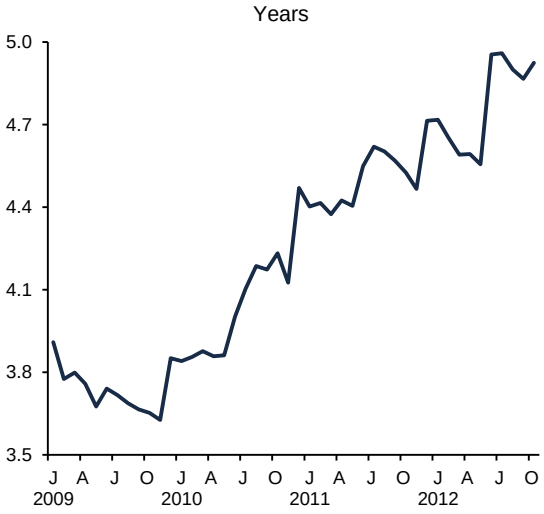
Figures as of October 2012
Source: Banco de México

The peso-denominated federal debt portfolio has an average maturity of nearly five years (graph 63a). This average maturity has continued to increase at a faster pace than that of US public debt (graph 63b). At the end of the first half of 2012, the federal debt balance as a percentage of GDP was 26 percent. Additionally, the federal government resumed the syndicated placement of securities (table 11).[122]

The improvement in financing conditions in Mexico is also visible in international markets. To this respect, January 2012 saw the record placement of 10-year US dollar-denominated debt with the lowest historic spread versus US Treasury bonds, as well as the first placement of Samurai bonds, not guaranteed by the Japan Bank for International Cooperation (JBIC) (graph 64a). These positive trends can also be observed in the return rates of previously placed debt, which have registered record lows (graph 64c).

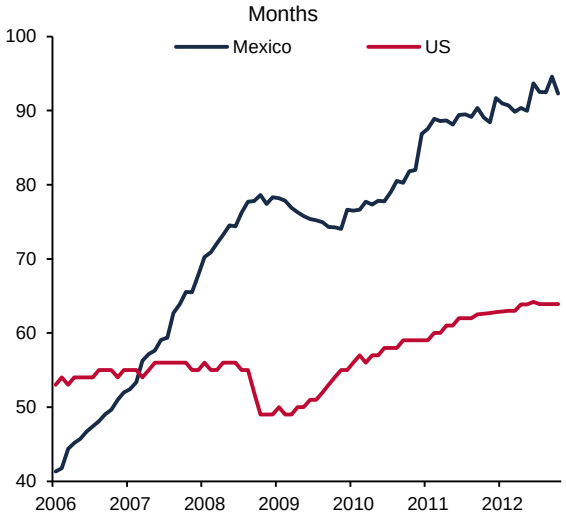
Graph 63
Government securities maturities

a) Maturity of the government debt portfolio



Figures as of October 2012
Source: Banco de México

b) Average maturity of market government debt



Figures as of October 2012
Source: Banco de México and US Treasury Department

[122] Syndicated placements are a debt handling strategy which aims at achieving greater liquidity in new issues. Through this mechanism, higher initial amounts are placed with the aid of institutions that participate as market makers. Amounts placed through this scheme are up to five times higher than those placed in traditional auctions and the process is similar, with the emphasis on the distribution and allocation of new securities.

Table 11
Syndicated auctions of bonds and udibonos

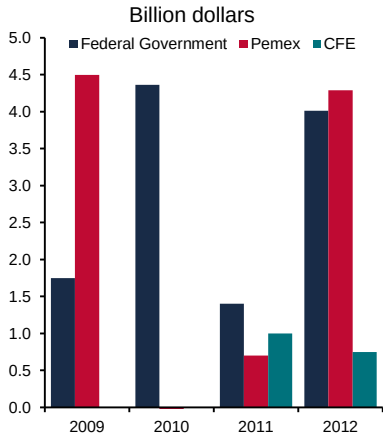
Date	Instrument	Maturity	Allocated amount Bonds: million pesos Udibonos: million udis	Overdemand Times as much the allocated amount	Placement rate Percentage
Feb - 10	10-year Bond	Jun - 20	25,000	2.95	7.66
Mar - 10	30-year Udibono	Nov - 40	3,500	3.50	4.27
Jul - 10	5-year Bond	Jun - 15	25,000	2.20	6.13
Feb - 11	10-year Bond	Jun - 21	25,000	2.50	7.44
Mar - 11	10-year Udibono	Dec - 20	3,500	2.70	3.50
Jul - 11	5-year Bond	Jun -16	25,000	2.50	6.00
Sep - 11	20-year Bond	May - 31	25,000	1.26	7.11
Feb - 12	10-year Bond	Jun - 22	25,000	1.80	6.30
Apr - 12	30-year Bond	Nov - 42	15,000	2.60	7.46
Jul - 12	5-year Bond	Jun - 17	30,000	1.40	4.88
Aug - 12	10-year Udibono	Jun - 22	3,000	2.20	1.55

Figures as of September 2012
Source: Banco de México

In addition, other public issuers, namely Pemex and the Federal Electricity Commission (CFE), have obtained very good conditions for their financing in international markets, involving maturities and currencies never used before. A placement by Pemex in Australian dollars and the first placement in US dollars with a 30-year maturity by the CFE are noteworthy.

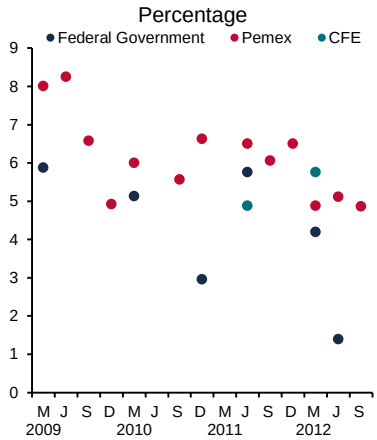
Graph 64
Placement of public debt overseas

a) Public sector net placement overseas



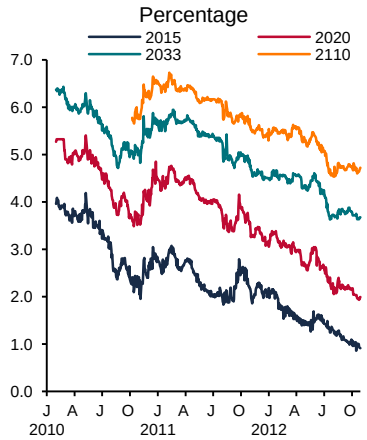
Figures as of October 2012
Source: Banco de México

b) Coupon rates of placed securities[1/]



Figures as of September 2012
Source: Bloomberg

c) Federal government bond yield in US dollars



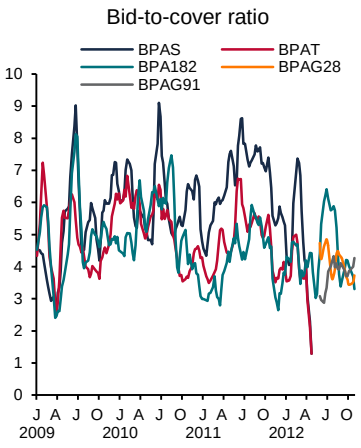
Figures as of October 2012
Source: Bloomberg

1/ Includes issuances in dollars, euros, swiss francs and yens

As far as the domestic debt market is concerned, the introduction of new instruments – the BPAG28 and BPAG91− by the Bank Deposit Insurance Institute (IPAB) in April 2012 is worthy of mention. These instruments aim at refueling demand (graph 65a) and diminishing the spread between interest and reference rates (that which turns out to be higher, among the government funding rate, 28-day cetes for BPAG28 and 91-day cetes for BPAG91) (graph 65b and c). As of the end of 2010, said spread had shown significant increases in the IPAB securities auctions. Its narrowing is attributable to the considerable fall in 28- and 91-day cetes returns, which had been used as reference rates and consistently remained at levels below the central bank's target interest rate. Therefore, the new instruments have a different reference for coupon payment: a minimum equivalent to the one-day government funding rate has been established.

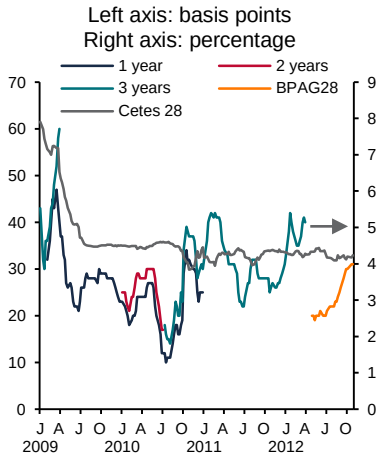
Graph 65
IPAB debt

a) Securities demand in primary auction/



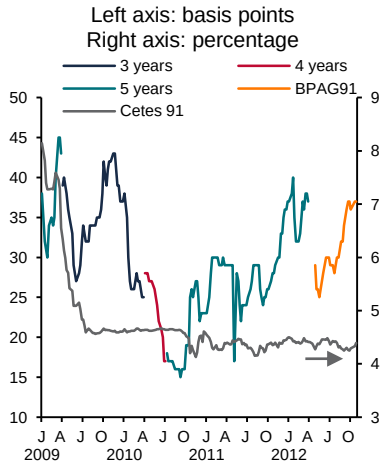
Figures as of October 2012
Source: IPAB
1/ Moving average of four weekly auctions
2/ Result from primary auctions

b) Surcharge of BPAS, BPAG and benchmark cetes 2/



Figures as of October 2012
Source: Banco de México

c) Surcharge of BPAT, BPAG and benchmark cetes2/



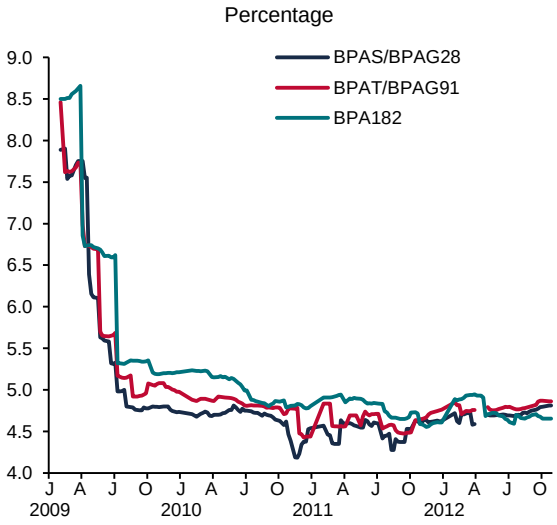
Figures as of October 2012
Source: Banco de México

This measure has allowed new IPAB instruments to be placed at interest rate spreads similar to those recorded in October 2010 (graph 66), and, in some cases, with a greater number of bids during auctions. The relatively positive outlook for the Mexican economy has played in favor of private issuers, particularly in regard to the placement of debt in international markets. In 2011, the balance of total placements was 14.1 billion dollars, a billion dollars higher than the 2010 maximum level (graph 67a). Importantly, the first renminbi-denominated placement undertaken by a Mexican issuer took place in February 2010. This issuer had managed to fulfill its first sale of Samurai bonds in October 2011.

The placement of new issuances in the Mexican market continued to rally. During the first quarter of 2012, the balance of placements with terms greater than a year increased grew 143 percent in real terms compared to the same period in the previous year (graph 67b). Some foreign issuers have taken advantage of both these favorable liquidity conditions in the peso-denominated debt market and foreign investors' appetite for peso-denominated issuances to place bonds in the Mexican market. The total amount of placements with terms below one year slightly increased as a percentage of total issuances, but did not equal levels reached in 2088 and 2009 (graph 67c).

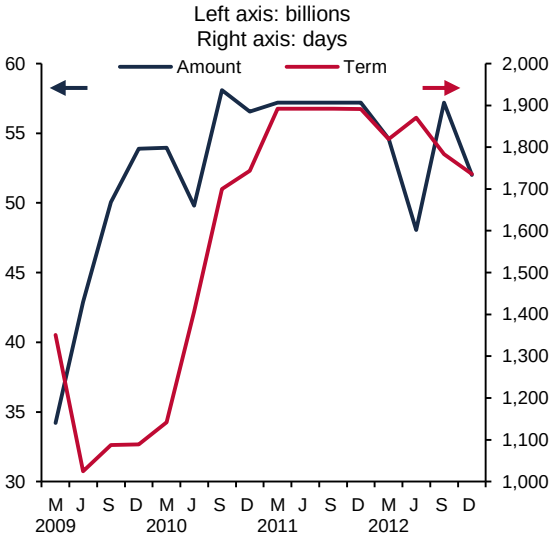
Graph 66
IPAB Placements

a) Weighted financing cost by instrument



Figures as of October 2012
Source: Banco de México

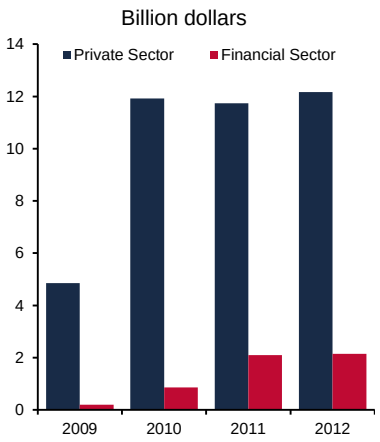
b) Quarterly placement of IPAB securities



Forecast for December based on the fourth-quarter placement announcement.
Source: Banco de México

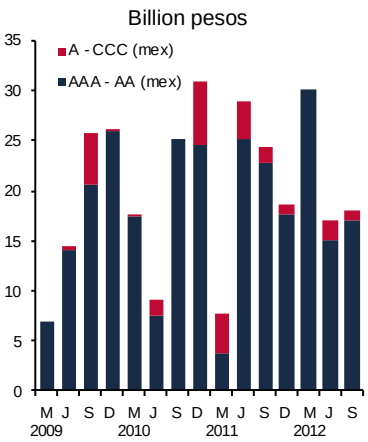
Graph 67
Private-sector placements

a) Long-term annual placement in the foreign market



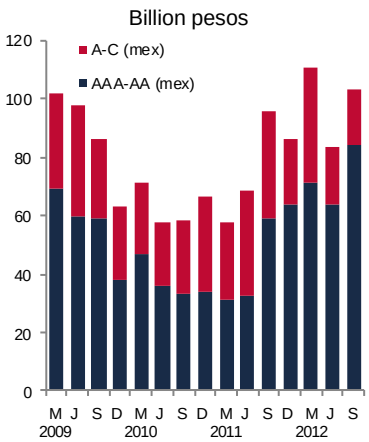
Figures as of September 2012
Source: Banco de México

b) Long-term quarterly placements in the domestic market



Figures as of September 2012
Source: Banco de México

c) Short-term quarterly placements in the domestic market



Figures as of September 2012
Source: Banco de México

During the last quarter of 2011, securities placement by states, which had not been in place for longer than a year, resumed. Thus, the governments of Chihuahua, Oaxaca and the Federal District issued debt for more than six billion pesos. The issuance of debt certificates by Pemex under the Global Depositary Notes scheme is also noteworthy;[123] this mechanism makes the offer of peso-denominated securities in international markets possible. On the other hand, in September 2012, Cemex and its creditors reached an agreement to extend from February 2014 to February 2017 the maturity of loans and notes for 6.155 million dollars. The agreement included the placement of 500 million in notes due June 2018. A month after the announcement of the new restructuring, Cemex issued a 10-year bond for 1.5 million dollars, with which it will pay in advance the 2013 and 2014 terms.

Equities

The volatility and uncertainty observed in international financial markets was also reflected in the equity market. In 2011, the IPC return was negative during most of the third quarter. Nevertheless, a recovery was recorded during the last months of 2011, as a response to the measures announced by Eurozone countries. Hence, having registered losses of up to 17.7 percent throughout the year, the final IPC annual loss was only 3.8 percent.

Optimism triggered by the ECB long-term trading and the electoral results in Greece led the IPC to historic high levels of above 41 thousand units. This surge was also driven by foreign investors' purchases, which at the end of September totaled 3.9 billion dollars; this was a favorable result, especially when compared to the sales of equities by foreign investors in 2011, which in turn amounted to 6.2 billion dollars (graph 68a). According to Emerging Portfolio Fund Research data, a similar phenomenon occurred in all emerging markets (graph 68b). During the first nine months of 2012, the IPC cumulative return was 10.2 percent in pesos and 19.4 percent in US dollars (graph 68c).

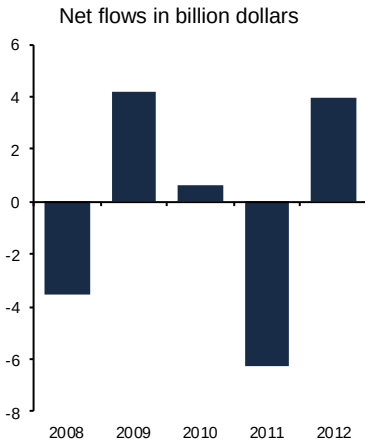
The positive trend in the IPC during 2012 has promoted the issuance of new initial public offerings. At the beginning of 2012, around ten companies stated they would list their shares at the BMV, eight of which would be initial public offerings for an approximate amount of four billion dollars. By the time this report was written, four new offerings of this kind have been undertaken by the following companies: Alpek (an Alfa subsidiary), Corporativo Inmobiliario Vesta, Grupo Financiero Santander México (an affiliate of Banco Santander España and Crédito Real). In regard to Santander, their initial public offering of 52.798 billion pesos is the highest ever placed at the BMV, exceeding more than four times the OHL initial public offering of 2010. The issuance by the Santander Mexican affiliate was higher than the total amount placed in 2010, 2011 and preceding offers of 2012 (graph 69a). This issuance will reinforce Banco Santander España's funds, thereby improving their Tier 1 capital by half a percentage point.[124] These positive conditions have also led issuers to tap funds through secondary offerings. In October, Promotora y Operadora de Infraestructura (PINFRA) gathered 1.365 billion pesos through a secondary offering and Mexichem made it known they would offer up to one billion dollars in additional shares.

[123] Global Depository Notes (GDN) are debt instruments created by a depository bank that certifies ownership of a local currency-denominated debt security. GDNs emulate the terms (interest rate, maturity date, credit quality, etc.) of particular local currency-denominated bonds. Nevertheless, instead of securing the bond in the local market, they are Euroclear/Clearstream eligible (European clearing and settlement systems for financial securities).

[124] The improvement in Banco Santander España's Tier 1 capital results from an accounting surplus that will be registered on the reserves heading, for it will continue to keep control of its Mexican affiliate.

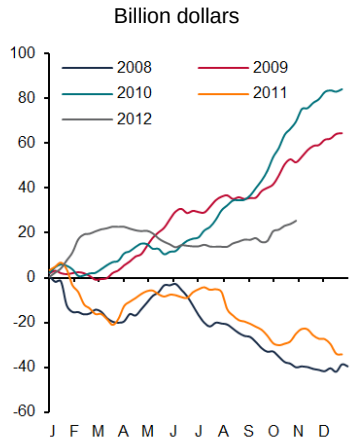
Graph 68
Investment flows and performance of emergent stocks

a) Foreign investment in the stock market



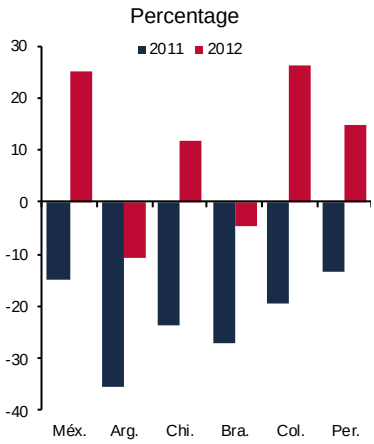
Figures as of September 2012
Source: Banco de México
1/ Annual cumulative flows
2/ In US dollars

b) Flows dedicated to emerging equity funds[1/]



Figures as of October 2012
Source: EPFR Global

c) Latin America stock markets' return [2/]

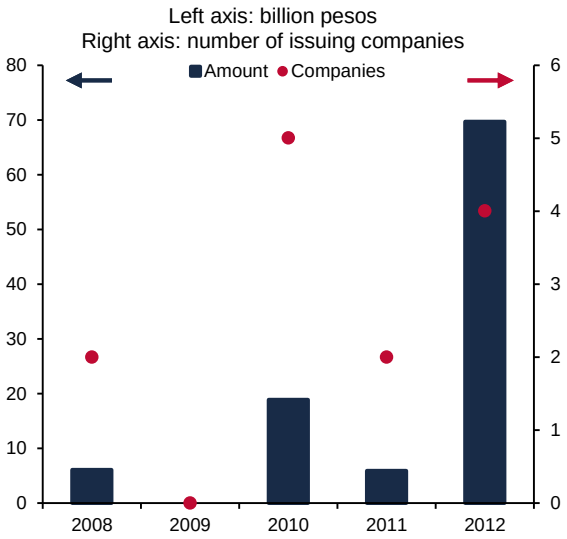


Figures as of October 2012
Source: Bloomberg

The issuance of new equities has revived over the last twelve months, especially by real estate trusts (fibras) and through Development Capital Certificates (DCC). On one hand, in March 2012, the Fibra Uno trust reopened a fibra issued one year before for an amount of 8.876 billion pesos (in March 2011, 3.615 billion pesos had been issued), 4.945 billion of which came from the domestic market and the rest from abroad. By the time this report was written, Fibra Uno has been the sole issuer of this kind of instruments. On the other hand, as of October 2011, there have been ten new DCC issuances, including a five billion pesos issue −the highest since their creation− (graph 69b). The amount placed during the first ten months of 2012 more than doubled the total amount placed in 2011.

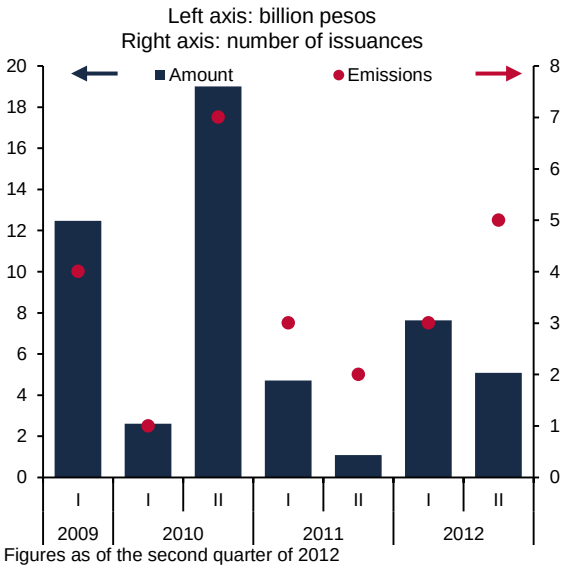
Graph 69
Issuance of equities

a) Initial public offerings



Figures as of October 2012
Source: Bloomberg

b) Issuances of Development Capital Certificates (DCC)



Figures as of the second quarter of 2012
Source: Indeval

In the period covered by this *Report,* there was an incident in the stock market: fifteen minutes before the end of the April 13, 2012 journey, Bulltick, a brokerage firm, entered an erroneous sell order for the Naftrac of about 50 billion pesos –as a reference, this instrument's daily average turnover had been 8.2 billion pesos in 2011−. The mishap brought about changes of above 10 or 15 percent in certain stocks, and, ultimately, the suspension of the brokerage. Moreover, this incident made the IPC register a 2.3 percent loss on that day. The BMV let Bulltick cancel the transactions; hence, at the end of the day, the loss reverted and the IPC recorded a reduction of only 0.56 percent. In the aftermath, Bulltick requested revocation of their brokerage license and announced the suspension of operations and the liquidation of their assets in Mexico.

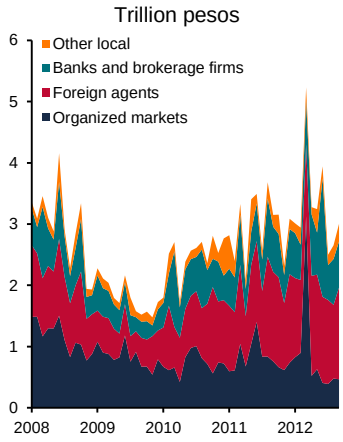
On its part, the CNBV resolved to implement actions to reduce the likelihood that an event of such kind and magnitude could occur again. These actions, to be put in place by the CNBV, brokerage firms and the Commission itself, envisage introducing pre-transaction controls to the stock central system, with a view to restraining atypical price and volume positions. Further actions are related to changes in the auctioning process, the revision of the BMV operating and management powers and the application of more comprehensive audits by the BMV on brokerage firms' pre-transaction controls.

4.3 Derivatives market

Despite the delicate prevailing environment in international financial markets, during the period covered by this Report, derivative markets operated in an orderly fashion and exhibited acceptable liquidity conditions. Derivative transactions have up the pace of growth that started as of the second half of 2009. The turnover observed during the first half of 2012 surpassed the level registered before the 2008 international financial crisis had an effect on the derivatives market (graph 70a). This growth was chiefly driven by a higher share of foreign counterparties (graph 70b).

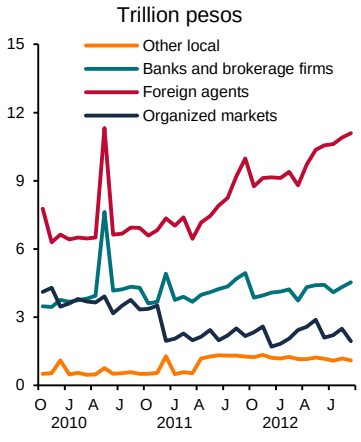
Graph 70
Current notional value and turnover in the derivatives market

a) Monthly turnover in the derivatives market by type of counterparty[1/]



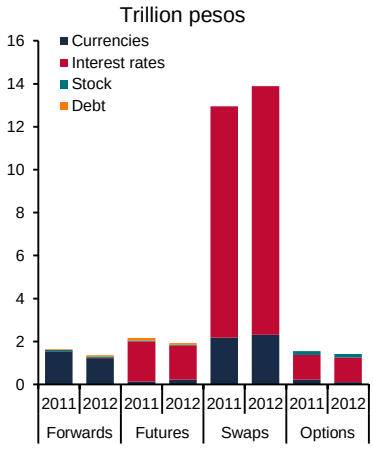
Figures as of September 2012
Source: Banco de México

b) Current notional value at the end of the month by type of counterparty[1/]



Figures as of September 2012
Source: Banco de México

c) Current notional value at the end of the month by type of instrument and underlying asset[1/]



Figures as of September 2012
Source: Banco de México

1/ Figures in pesos. Includes purchases and sales.

The international financial environment –recently characterized by low interest rates in major economies− has promoted financial inflows to developing countries with sound and stable fundamentals. Therefore, the growing derivatives market in Mexico can be attributed to the greater number of interest rate swaps by foreign counterparties seeking higher returns. The peso depreciation observed during the second quarter brought about an increase in currency forwards traded by said investors, mainly through carry trades (graph 71).[125]

On the other hand, the partnership between Grupo BMV and the Chicago Mercantile Exchange Group (CME) –finally achieved in April 2011− has fostered the development of the organized market in Mexico. Mexican intermediaries have raised their positions on futures listed on foreign stocks; namely, currency, US Treasury bond and Eurodollar futures. Similarly, amendments to the rules relating to the type of trade that may be entered into through organized markets −effective as of November 2011− allow the listing of interest rate swaps. Additionally, motivated by the G20 commitments, the SHCP, CNBV and Banco de México are drafting further amendments to the

[125] See box 2 in the Financial SVer re*Financial System Report: Junio de 2010*: “Las operaciones de acarreo en divisas (*carry trade*)”.

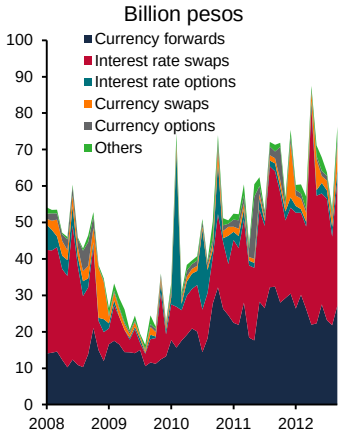
existing regulation in order to promote transparency and stability in the derivatives market. A positive development of the organized market in Mexico is therefore expected.

The amendment project recently discussed by authorities will contribute to the use of central counterparties to engage in derivative trades, and thus reduce the counterparty risk taken on by intermediaries. Although, the turnover in Mexico relates mostly to over-the-counter transactions, interest rate swaps and peso-dollar forwards account for most trades. Specifically, 28-day TIIE swaps, which have displayed a constant growth rate over the last years, account for 84% of the turnover of the first half of 2012. Moreover, the new operating regulation will be applied to derivative instruments, since, currently, their terms and contract types are highly standardized (graph 72b).

Finally, the excess demand for federal debt securities (cetes and M bonds) notwithstanding –this has been the case since their inclusion in the Citigroup WGBI index in October 2010−, the turnover of futures indexed to said securities has dropped as of the last quarter of 2011 (graph 72c). By the same token, the turnover of commodity derivatives has been low. As of October 2010, regulatory changes set forth by Banco de México established that financial intermediaries must receive prior authorization to trade this type of underlying assets.

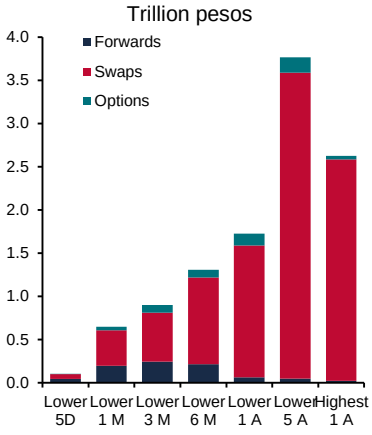
Graph 71
Current notional value and turnover traded by foreign counterparties in the derivatives market

a) Daily turnover by type of instrument and underlying asset[1/ 2/]



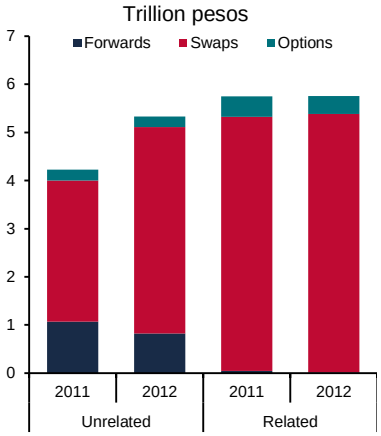
Figures as of September 2012
Source: Banco de México

b) Current notional value as of 06.30.2012 by term and type of instrument[1/]



Figures as of September 2012
Source: Banco de México

c) Current notional value as of 06.30.2012 by type of instrument for related and unrelated counterparties[1/]

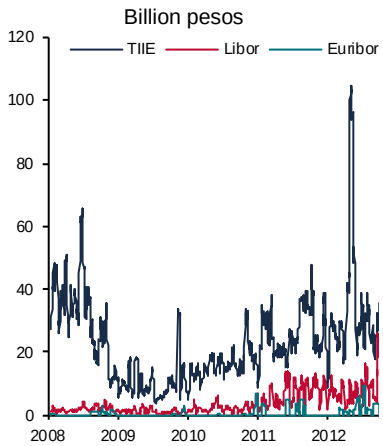


Figures as of September 2012
Source: Banco de México

1/ Figures in pesos. Includes sales and purchases.
2/ Monthly average

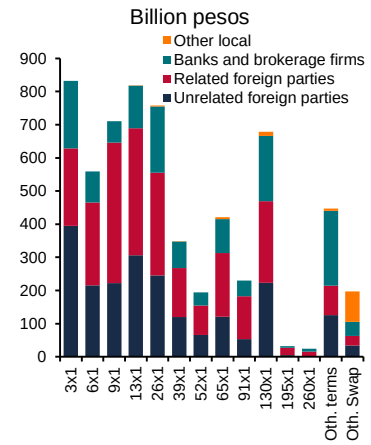
Graph 72
Turnover in interest rate swaps and Federal Government debt futures

a) Daily turnover by reference rate[1/]



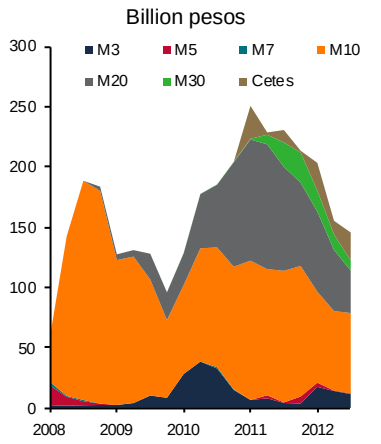
Figures as of September 2012
Source: Banco de México

b) 2012 TIIE swap turnover by maturity and type of counterparty[1/]



Figures as of September 2012
Source: Banco de México

c) Quarterly turnover of federal bond futures[1/]



Figures as of September 2012
Source: Banco de México

1/ Figures in pesos. Transactions among regulated financial institutions were adjusted.

5. Financial system infrastructure

The operation of financial intermediaries and markets is supported by a substantial infrastructure encompassing payment systems, central securities deposits, securities settlement systems and central counterparties.

In April 2012, the Committee on Payment and Settlement Systems (CPSS) and the International Organization of Securities Commissions (IOSCO) published the *Principles for financial market infrastructures* (Principles) which established standards on design and operation minimum requirements that must be met by entities that partake in every country's domestic financial infrastructure. In the document, different aspects relating to legal, risk management and capital requirements were specified in order to guarantee the correct functioning of financial infrastructure, even in a crisis scenario. It follows that this document is considered as the fundamental international framework for the assessment of financial infrastructure.

These Principles replaced the standards that were applicable to some infrastructure components.[126] The most relevant changes relate to the following aspects: requirements on credit, liquidity and business risk management, together with criteria about access to infrastructure components and transparency. The most significant change refers to the establishment of standards for two infrastructure components, which, as a result of G20 measures to strengthen the OTC derivative market, have recently gained in importance: central data deposits and central counterparties. Particularly, the Principles introduced very strict and specific requirements for central counterparties. As soon as the CPSS and the IOSCO publish the assessment methodology for the new Principles, Banco de México will evaluate local components and take steps to bring them under the applicable norms.

The main components of the Mexican financial system infrastructure are described below; namely, the Electronic Interbank Payment System (SPEI), the Securities Deposit, Administration and Settlement System (DALI), the Central Securities Counterparty (CCV), Asigna Clearing and Settlement (Asigna), the Banco de México Accountholders Service System (SIAC) and the Continuous Linked Settlement (CLS).[127] At the end of the chapter, we comment on the envisaged reforms for the OTC derivative market.

[126] *Core Principles for Systemically Important Payment Systems* (CPSS, 2001), *Recommendations for securities settlement systems* (CPSS-IOSCO, 2001) and *Recommendations for Central* Counterparties (CPSS-IOSCO, 2004).

[127] At the beginning of each year, Banco de México determines and publishes in the Official Federal Gazette, the payment systems it considers to be systemically important in accordance with the Law on Payment Systems, which provides that for a payment system to be deemed systemically important the following criteria must be met: i) at least three financial institutions participate in the system; and ii) that the monthly average settlement amount accepted by the agreement or procedure for such clearing be of at least 100 billion UDIs in a calendar year. The systems operated by the central bank are considered systemically important even if they do not settle the aforementioned average amount. In 2012, Banco de México determined that the systemically important payment systems are the SPEI, the SIAC and the DALI.

5.1 The Electronic Interbank Payment System (SPEI)

The SPEI is the chief interbank transfer system in pesos run by Banco de México. Its main characteristics are the capacity to process a large number of transfers in real time and with a high level of security, along with the possibility to clear any amount. Additionally, the system design allows financial entities to automate settlement processes, reduce costs and provide customers the SPEI transfer service at low prices.

A total of 47 banks, Banco de México and 43 non-bank financial institutions participate in the SPEI (table 12). In June 2012, the SPEI processed a daily average of 834 thousand settlements amounting to 1.248 trillion pesos (graphs 73a and b). Earlier, in March 2012, the processing of settlements for IMSS pension funds initiated, and, in May, the ISSSTE pensions followed suit. These payments are made upon the instructions of the Federal Treasury (Tesofe) and they are added to payroll liquidations and governmental suppliers, which were already processed by the SPEI. With the inclusion of these settlements, the SPEI has processed more than three million settlements in one day. Importantly, the Tesofe processes settlements through Banco de México.

As of April 2012, SPEI users get an electronic receipt of the settlements carried out through the system. The procedure can be defined as follows: the recipient bank issues the electronically subscribed receipt and sends it to Banco de México. Then, the latter makes the receipt available to its customers on its webpage. The receipt service provides higher certainty and confidence to bank customers using the SPEI.

Table 12
SPEI Participants

Type of Institution	Number of Participants		
	Jul-10	Jul-11	Jul-12
Commercial banks	40	40	41
Brokerage firms	17	18	18
Development banks	6	6	6
Money exchanges	5	5	5
Insurance companies	5	5	6
Multiple purpose financial companies	1	1	2
Limited purpose financial companies	1	1	0
Popular financial institutions	2	3	6
Pension funds management companies	1	1	1
Mutual funds management companies	1	2	2
Banco de México	1	1	1
CLS	1	1	1
DALI	1	1	1
TELECOMM	1	1	1
Total	**83**	**86**	**91**

Source: Banco de México

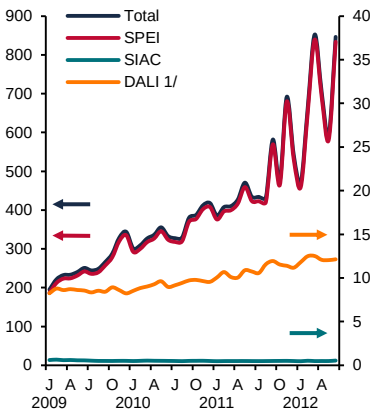
5.2 Banco de México's Accountholders Service System (SIAC)

The SIAC is a system that was established by Banco de México to manage the accounts that banks, other financial entities and the public sector hold in the central bank. Participants can use the SIAC as a payment system to undertake fund transfers. Furthermore, Banco de México provides intraday liquidity through two mechanisms: i) intraday current-account overdrafts, provided they are guaranteed by deposits in the central bank; and ii) repo sale of federal and IPAB securities through which banks obtain liquidity from the central bank. The liquidity provided by Banco de México via the first mechanism is mainly limited by the total amount of mandatory long-term deposits the banks hold in the central bank. On the other side, the liquidity that banks can obtain via the second channel is limited by their capital. Banks can transfer funds from the SIAC to the SPEI payment system or DALI securities clearance system at any time. At the end of the operational journey, banks shall not have open intraday overdrafts or repos in their accounts; otherwise, they may be sanctioned by the central bank.

In June 2012, the SIAC settled an average 535 transactions daily, worth 87 billion pesos (graphs 73a and b). That same month, banks obtained intraday liquidity through account overdrafts for 191 billion pesos and repo transactions for 229 billion pesos.

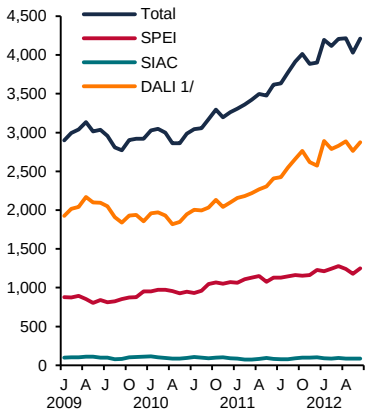
Graph 73
Systemically important systems

a) Average number of daily transations



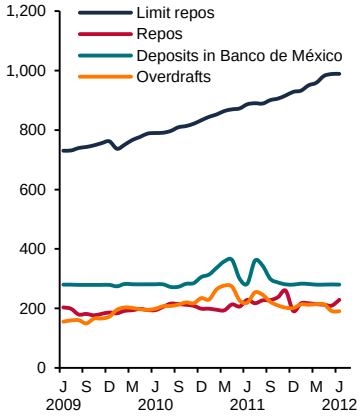
Figures as of June 2012
Source: Banco de México
1/ DALI replaced the SIDV in November 2008

b) Daily average value



Figures as of June 2012
Source: Banco de México

c) Use of Banco de México's intraday liquidity



Figures as of June 2012
Source: Banco de México

5.3 The Securities Deposit, Administration and Settlement System (DALI)

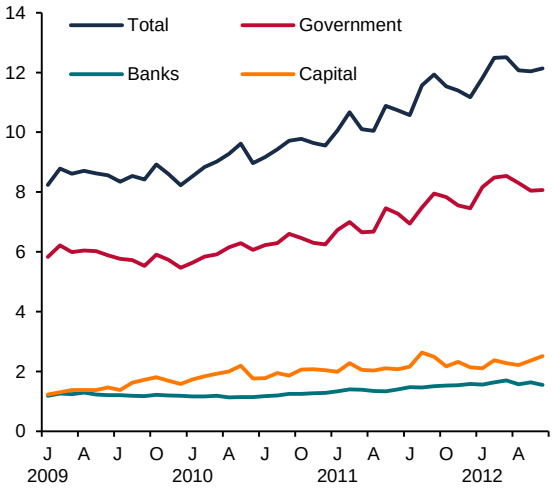
The DALI is managed by the Indeval and its primary role is both to retain custody of shares and debt securities issued domestically and settle transactions related to such instruments. Some of the transactions processed by the DALI are: direct and repo trading transactions, securities lending, settlement of interest, dividends and maturities. The DALI is regulated and overseen by the CNBV and Banco de México. This system provides service to pension fund managers, banks, brokerage firms, insurance companies, Banco de México itself, foreign banks and the Central Securities Depositary Office of Chile.

The DALI processes settlement transactions under the Delivery versus Payment (DvP) scheme, with which the delivery of securities from the seller to the buyer is subject to the corresponding buyer's payment. To implement DvP, the DALI offers its depositors securities and cash accounts on which overdrafts are not allowed. Moreover, the DALI does not grant credit to depositors; it is based on an optimal clearing model through which transactions are settled virtually in real time.

The DALI system clears two thirds of the total amount of settlements in Mexican payment systems. In June 2012, the DALI settled a daily average of 12,132 transactions worth 2.875 trillion pesos (graphs 73a and b). Nearly 85 percent of them corresponded to government securities, 12 percent to bank and other company debt securities transactions, and the remaining three percent to capital market transactions (graph 74b).

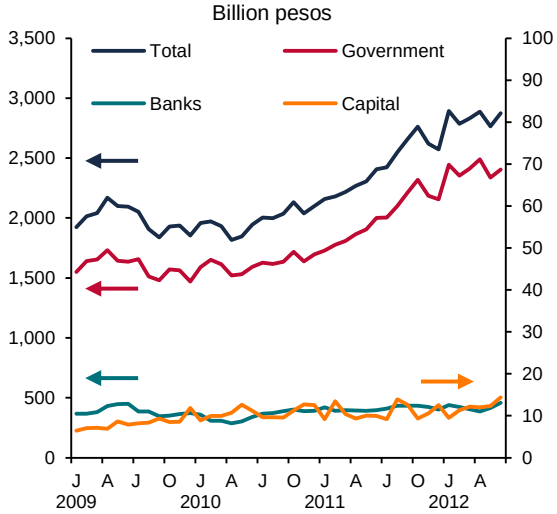
Graph 74
Securities Settlement System (DALI)

a) Average number of daily transactions



Figures as of June 2012
Source: Banco de México with Indeval data

b) Daily average value



Figures as of June 2012
Source: Banco de México with Indeval data

5.4 The Central Securities Counterparty (CCV)

The CCV is the entity responsible for clearing and settling all stock transactions traded on the BMV. In acting as a central counterparty, the CCV's major function is to act as a mediator between the original parties in all transactions, in such a way it becomes buyer for every seller and viceversa. The CCV is part of Grupo BMV and is regulated and overseen by the CNBV and Banco de México. Credit institutions and brokerage firms participate in this system –they are known as settlement partners.

In order to manage the risks to which it is exposed, the CCV counts on a series of procedures and resources known as a security network. This network's primary measures include collateral requirements from settlement partners. There are two types of requirements, the first –known as contributions fund− aiming at covering potential securities price variations; the second –known as clearing fund− can be used to share losses derived from a settlement partner's noncompliance, should contributions to the contributions fund be insufficient to cover such losses.

Additionally, the CCV has a reserve fund comprised of the sanctions and penalties that have been charged on settlement agents. It also counts on its own capital to meet a potential default by settlement agents. The CCV currently has 26 settlement partners, 25 brokerage firms and a bank. In July 2012, the CCV settled a daily average 89 thousand transactions worth approximately 13 billion pesos. In the same period, the contributions fund balance amounted to 2.234 billion pesos, the clearing fund to 99 million pesos, the reserve fund to 78 million pesos and the CCV's capital to 169 million pesos.

5.5 Asigna Clearing and Settlement (Asigna)

Asigna is the central counterparty responsible for transactions traded in the Mexican Derivatives Market (MexDer). Asigna is part of Grupo BMV and is regulated and overseen by the SHCP, CNBV, and Banco de México. In order to manage risk, Asigna requires the provision of initial collateral from settlement partners for intraday transactions. During their validity, Asigna determines gains or losses for each of its settlement partners at the end of the day. Furthermore, for the purpose of coping with potential noncompliance, Asigna counts on capital and a shared fund, made up of additional contributions by settlement partners, which represent a percentage of the initial collateral.

In July 2012, the daily average notional amount of contracts traded was 11.537 billion pesos, of which 35.6 percent corresponded to U.S. dollar futures, followed by BMV IPC futures with 23.1 percent, federal government bond futures with 22.7 percent, interest rate futures with 18.2 percent, and the rest corresponding to options and other futures contracts. As of the end of June 2012, participants held a shared fund of 2.059 billion pesos and Asigna's capital totaled 254 million pesos.

Asigna is currently working on the modernization of its technology infrastructure. This modernization involves the reduction of hardware platforms, the updating of computer systems, the promotion of automated processes among users (*Straight Through Processing* or STP), including the use of standards in communication protocols. Banco de México will require Asigna to abide by the *Principles for financial market infrastructures*, recently published by the CPSS and IOSCO. Compliance with these norms will imply the closing of the gap in risk management control. For instance, Asigna does not corroborate settlement partners' collateral sufficiency before acting as a central counterparty in transactions; therefore, in some cases, it could require atypical collateral amounts from those partners. Thus, in case the settlement partner is not able to gather the required collateral, the transaction would continue its course and Asigna would have to resort to its safety network.

This hypothetical scenario −possible according to current rules and agreements− represents an opportunity area to improve risk management mechanisms. Specifically, two improvement areas have been identified for the acceptance phase of Asigna transactions: i) that management devices use information available in the market, so as to filter and reject transactions with elements going out of reasonable trading ranges; and ii) that Asigna refuses to operate as a counterparty in transactions not complying with the established conditions in its risk management framework, even in the case of transactions agreed in the stock market. The fact that transactions are directly originated in the stock market does not guarantee they are error-free and that they may not pose a threat to the good functioning of the central counterparty.

5.6 Continuous Linked Settlement (CLS)

The CLS is a foreign exchange transaction settlement system that offers a payment-versus-payment scheme, which eliminates settlement risk.[128] It is run by the CLS-Bank, a bank that is headquartered in New York. The CLS settles foreign exchange trades in 17 currencies, accounting for 60 percent of the global foreign exchange market. In order to make the payment-versus-payment model possible, the CLS participates in the systems of payments of those countries issuing the currencies it trades. Besides the elimination of the referred risk, its participants also benefit from significant liquidity savings, for the system asks participants to deliver to it only the difference between total sold and bought amounts in each currency.

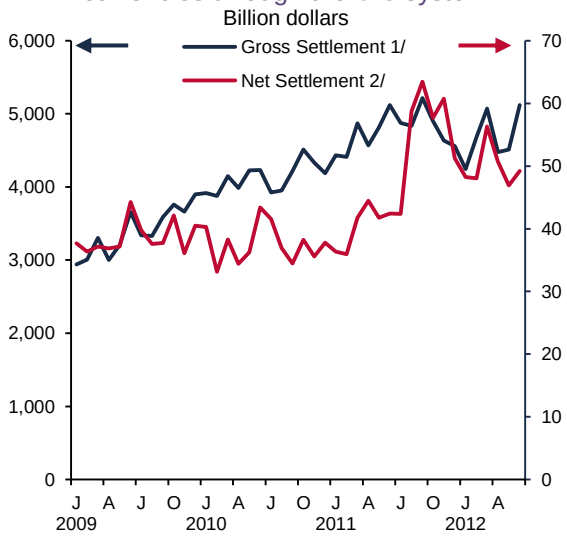
The Mexican peso is traded through the CLS since 2009. According to the 2010 *Bank for International Settlements Triennial Survey*, the foreign exchange market is one of the main financial markets in Mexico and the daily trade of the peso in the global foreign exchange market amounts to 50 billion dollars, of which around17 billion are traded in Mexico. The participation of the peso in the CLS adds security to peso trades and allows foreign banks with strict risk controls to include the peso among the currencies they exchange. Given the importance of the CLS for global financial stability, an international cooperation agreement in terms of oversight has been established, in which Banco de México takes part, together with the central banks of the currencies settled within the system. The purpose of this agreement is that the CLS complies with the best international practices.

Currently, the CLS is comprised of 63 direct participants and more than nine thousand indirect participants. As of June 2012, the CLS settled a daily average USD 5.1 trillion (graph 75a). With respect to the Mexican peso, the daily average was USD 44 billion.

[128] Settlement risk materializes when a counterparty in a foreign exchange trade fulfills the agreed delivery of the currency and does not receive the corresponding compensation in exchange. In order to suppress this risk, a payment-versus-payment scheme is used; this ensures that a participant will deliver the agreed currency provided the counterparty delivers the corresponding currency.

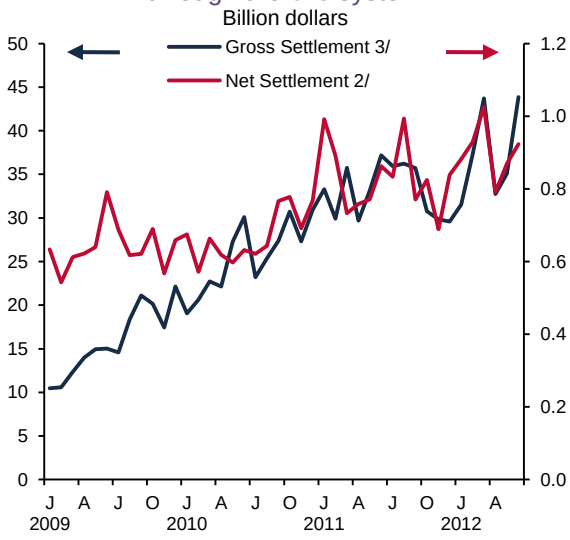
Graph 75
Settlement of transactions through the CLS

a) Daily average amount settled in all currencies through the CLS system



Figures as of June 2012
Source: CLS Bank

b) Daily average amount settled in pesos through the CLS system



Figures as of June 2012
Source: CLS Bank

1/ Gross settlement: value of transactions settled through the CLS.
2/ Net settlement: total amount necessary to settle gross transactions.
3/ Gross settlement: total value of transactions including the peso that are settled through the CLS.

5.7 Reforms to OTC derivative markets

The 2008 financial crisis shed light on three major risks in OTC derivative markets: i) that these markets were extremely concentrated and it was highly likely that risk contagion would very swiftly spread among participants; ii) that credit risk exposures could be very high with respect to some very active and systemically important counterparties, financial institutions and companies; and iii) insufficient transparency with regard to the positions held by market participants. Consequently, in September 2009, the G20 financial authorities agreed to set specific targets for the market in order to tackle the identified deficiencies. They also decided that before the end of 2012 all standardized OTC derivative transactions should be traded on electronic platforms and settled through central counterparties. Further, they agreed that all contracts relating to OTC derivative transactions must be reported to central data registries and that OTC derivative transactions not settled in central counterparties must be subject to lower capital requirements.

In Mexico, financial authorities agree that regulatory reforms will be instrumental in strengthening the OTC derivative market, while satisfying the G20 commitments. In the first stage, these reforms will be implemented through a secondary regulation issued by each authority in accordance with its own powers. Hence, a number of amendments will be undertaken in the following areas:

i. *Rules for derivative transactions,* in order to specify which products must be standardized and make them be settled and cleared through central counterparties;

ii. *Provisions applicable to companies managing devices that make securities transactions possible*, resulting from the convenience of current brokers following more strict government and transparency requirements. These will enable them to become electronic trading platforms; and,

iii. *Rules for participants in derivative contracts listed on the stock market (*tripartite rules), the objectives being to implement all reforms necessary for, firstly, the functioning of stock exchanges and trading platforms, considering their relationship with managers and customers; and secondly, the management and trading of central counterparties' risk, considering their relationship with settlement partners. Norms for central data registries will be included in this heading.

6. Financial position of households, firms and the public sector

This section describes the financial position of households, non-financial private companies' indebtedness and the situation of public finances. The creditor position of households grew during the second quarter of 2012 versus the same period of the previous year.[129] The recorded growth in households' holdings of financial assets offset their increasing levels of indebtedness. As far as non-financial private companies are concerned, their indebtedness continued to grow. This implied that the financing market for productive projects –an indispensable part of sound economic performance− is picking up. Public finances have performed positively, thanks to surplus income. Finally, the deficit targets approved by Congress have been met both in 2011 and the first half of 2012.

6.1 Households

The financial position of households in regard to the financial system (defined as the difference between monetary aggregate M2 assets[130] held by households and their debt *vis-à-vis* the financial system) amounted to 26.9 percent of GDP in the second quarter of 2012 (graph 76a).[131,132] That figure was 1.5 percentage points above that observed in the same period of 2011 (graph 76b). The growth in the creditor position of households during the second quarter of 2012 resulted from a 1.6 percent GDP increase in annual terms, whereas their indebtedness only grew by 0.2 percent of GDP

As for assets, household financial savings, defined as the financial instruments aggregated within M2 held by households, exhibited a higher growth rate as of the fourth quarter of 2011. In June 2012, this aggregate increased by 9.5 percent, compared to the same month in 2011 when it grew by 4.1 percent (graph 77a). Particularly, voluntary household savings recorded variations above those observed the previous year. In June 2012 they recorded an increase of 10.1 percent while a year earlier they just grew by 4.4 percent (graph 77a). Meanwhile, obligatory savings did not cease to grow, and in June 2012 they posted a growth rate of 8.6 percent, more than doubling the 3.6 percent rate recorded the prior year (graph 77a). This performance was primarily based on increased workers' contributions, resulting from improved labor conditions in the formal economy and a higher valuation of the assets that are part of obligatory savings.

[129] The growth rates reported in this section refer to real annual variations, unless otherwise specified.

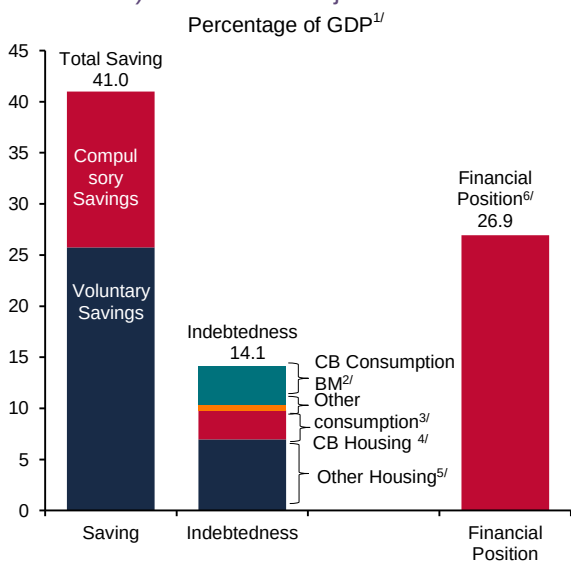
[130] The monetary aggregate M2 includes the monetary aggregate M1 and domestic financial assets in hands of residents. The monetary aggregate M1 is comprised of bills and coins in public hands, check accounts, current account deposits in resident banks and savings and loans institutions' demand deposits. Financial assets in hands of residents include resident banks' financial savings systems other than current account checks and deposits, securities in hands of residents and pension funds other than siefores, among others.

[131] The monetary aggregate M2 is defined as: i) bills and coins in public hands, ii) residents' liquid and term deposits in banks and savings and popular loans entities; iii) public and private securities in hands of residents; iv) housing funds; v) pension funds in Banco de México, and vi) the Pensionissste bond.

[132] Indebtedness with the financial system is defined as consumer and mortgage loans granted by commercial banks and their ER sofomes subsidiaries, development banks, sofoles, ER sofomes, savings and popular loans entities, Infonavit and Fovissste.

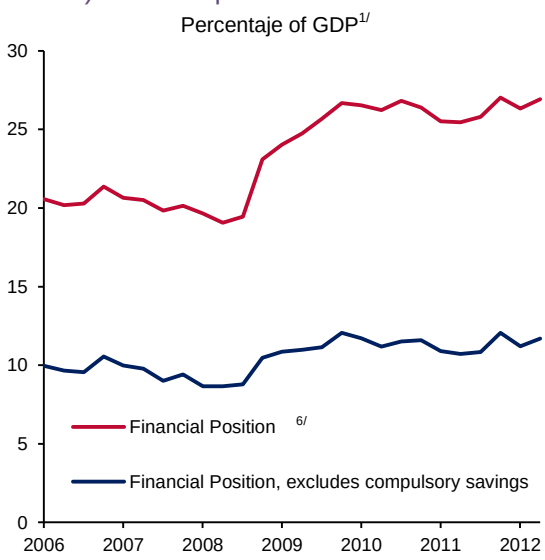
Graph 76
Financial Situation of Households

a) Balances as of june 2012



Figures as of June 2012
Source: Banco de México

b) Financial position of households



Figures as of June 2012
Source: Banco de México

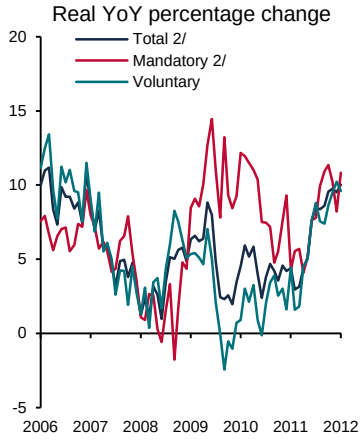
1 / The sum of the parts may not add up to total due to rounding. The figures correspond to June 2012 balance as a percentage of nominal GDP average of the last four quarters.
2 / Includes credit granted by commercial banks (BM) and its subsidiaries sofomes ER.
3 / Includes lending by development banks, sofoles, sofomes ER Entity and savings and loans.
4 / Includes lending by commercial banks.
5 / Includes lending by development banks, sofoles, sofomes ER, Infonavit and Fovissste.
6 / financial assets (M2 households) minus liabilities (borrowing from the financial system). Excludes shareholding.

In regard to liabilities, household credit sustained a stable growth trend in the second half of 2011 and the first half of 2012, on the back of increasing consumer credit and a sustained but rather more moderate mortgage loan expansion. In June 2012, household credit grew by 6.6 percent, whereas in June 2011 the growth rate was 7.3 percent (graph 77b). When analyzing the portfolio, we note consumer credit and mortgage loans grew by 15.0 and 3.4 percent in June 2012, respectively, compared to the respective growth rates of 8.8 and 6.7 percent in the earlier year.

Hence, the higher consumer credit can be attributed to the increase in commercial bank loans. Particularly, there was significant growth in payroll loans. This was due, on the demand side, to their lower costs as opposed to other consumer credit alternatives. On the supply side, however, banking institutions have boosted this type of loans given their default rate is lower than that of other financing sources. Concurrently, the credit cards heading, which holds the highest share in the consumer credit portfolio, gradually increased its balance as of mid-2011, after several quarters of decline (graph 77c). Mortgage loans, on their part, sustained the uptrend recorded since mid-2010 (graph 77b), mainly due to the Infonavit and the increasing activity of commercial banks in this heading.

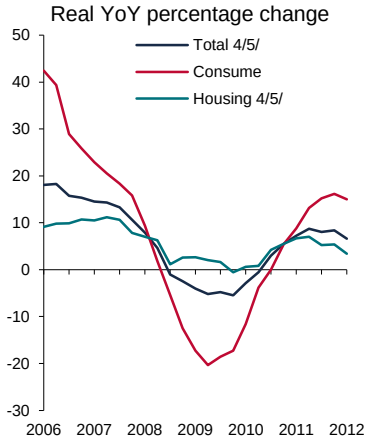
Graph 77
Households: financial savings and loans

a) M2 voluntary and mandatory household savings[/]



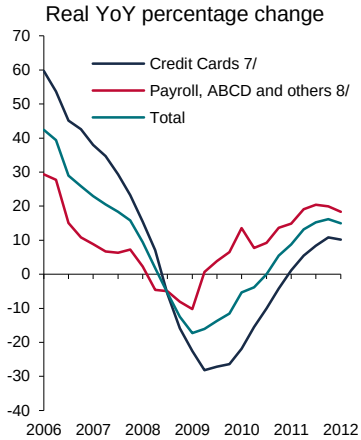
Figures as of June 2012
Source: Banco de México

b) Total household loans by destination[3/]



Figures as of June 2012
Source: Banco de México

c) Consumer loans[6/]



Figures as of June 2012
Source: Banco de México

1/ Defined as monetary aggregate M2 in the power of households. Voluntary savings is the difference between savings in household financial instruments (M2 households) and obligatory savings. Obligatory savings include retirement funds (IMSS and ISSSTE) invested in monetary aggregate instruments, housing funds (Infonavit and Fovissste) and Pensionissste bonds.
2/ Figures between December 2008 and November 2009 have been adjusted to exclude the effect of amendments to the ISSSTE Law.
3/ Includes the total loans of banks, leasing companies, sofoles, sofome ER and popular savings and loans entities as well as Infonavit and Fovissste loans. These figures are affected by the conversion of some non-bank financial intermediaries into unregulated ENR sofomes.
4/ Figures between January and December 2007 have been adjusted so they are not distorted by the reclassification of corporate-sector bridge loans for homebuilding.
5/ Growth rates between December 2007 and November 2008 have been adjusted so they are not distorted by the inclusion of Fovissste in the statistics.
6/ Includes direct bank loans, loans associated with bank restructuring programs, credit granted by credit card sofomes, and the total credit of non-bank financial intermediaries.
7/ Refers to credit granted by commercial banks through credit cards.
8/ ABCD includes loans for the purchase of consumer durables and other consumer loans from banks and other non-bank banks. This category also considers credit cards other than those granted by commercial banks.

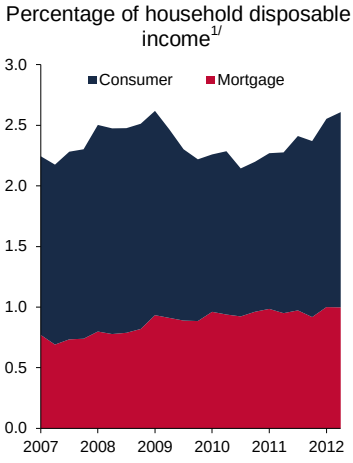
In the second quarter of 2012, the total household debt service and that of its consumer and mortgage loan components accounted for 2.6, 1.6 and 1.0 percent of disposable household income, respectively (graph 78).[133,134] The consumer credit debt service increased *vis-à-vis* the second quarter of 2012, whereas the mortgage loan debt service was similar to that of the prior year.

[133] Debt service is defined as the households' payment of interest and commissions on consumer and mortgage loans granted by commercial banks, along with loans taken out with Infonavit.

[134] Disposable household income was calculated using INEGI data. Figures for 2012 are preliminary.

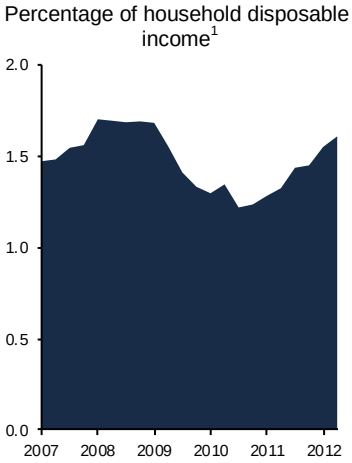
Graph 78
Household debt service

a) Household debt service



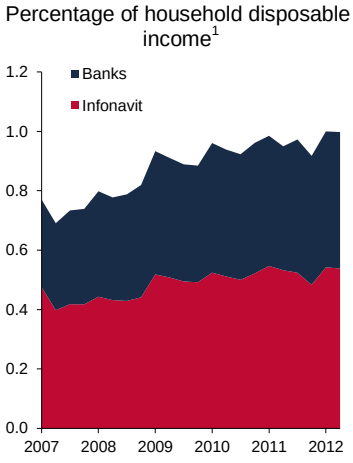
Figures as of June 2012
Source: Banco de México

b) Consumer credit debt service2/



Figures as of June 2012
Source: Banco de México

c) Mortgage credit debt service3/



Figures as of June 2012
Source: Banco de México

1/ Disposable household income was calculated using INEGI data.
2/ The consumer loan debt service is the payment of interest and commissions on consumer loans granted to households by commercial banks.
3/ The mortgage loan debt service is the payment of interest and commissions on mortgage loans granted to households by commercial banks and Infonavit.

6.2 Non-financial private companies

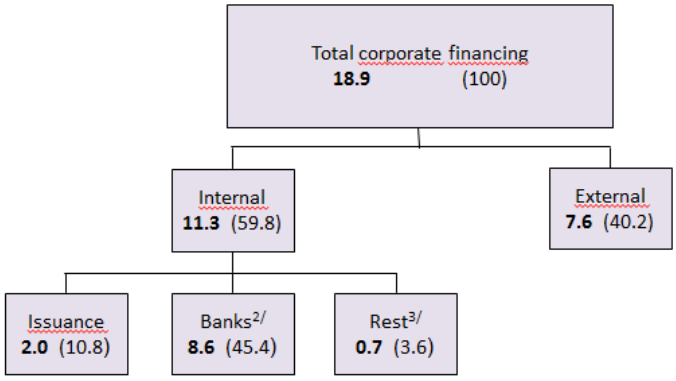
Total financing granted to non-financial private companies accounted for 18.9 percent of GDP (figure 3) as of the second quarter of 2012, 11.3 percentage points of which corresponded to the internal component and 7.6 percentage points to the external component.[135] As for internal financing, bank loans remain the major source of funding for companies, accounting for 8.6 percent of GDP.

Further, total financing to non-financial private companies held an uptrend that began in mid-2010 and continued throughout 2011 to the first quarter of 2012. This was driven by the continued growth of domestic financing and the increase in external financing over that period (graph 79a). In June 2012, total financing grew by 13.2 percent due to variations in the internal and external components (in constant pesos) of 11.4 and 15.9 percent, respectively.

The positive internal financing growth rate was based on loans and securities issuances (graph 79b). Loans granted by banks and other non-bank financial institutions to companies increased 12.7 percent as of June 2012 compared to the 9.1 percent recorded in the same month of the previous year. Particularly, commercial bank performing loans to the private sector continues to grow by 10 percent in real annual terms (graph 79c), while interest and delinquency rates remain low and stable (see section 3). The expansion in loans to the private sector suggests the promotion of economic activity without overheating the sector. Meanwhile, financing through domestic debt issuances displayed growth of 6.1 percent in June 2012, a lower rate than the 7.1 percent observed in June 2011.

[135] Data related to total funding granted to non-financial private companies is published every quarter and is available through the second quarter of 2012. Domestic financing to this sector comprises bank and non-bank financial intermediaries, as well as private debt issuances.

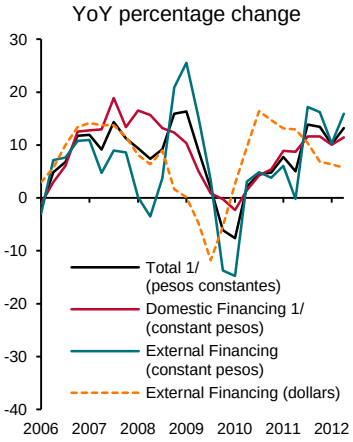
Figure 3
Total financing to non-financial private companies
Percentage of GDP (percentage structure)[1/]



Figures as of June 2012
Source: Banco de México
1/ Due to rounding, the sum of the parts does not coincide with the total. Bold numbers correspond to the balance as of the second quarter of 2012 expressed as a percentage of annual average nominal GDP. The black numbers in brackets correspond to the percentage share of each item in non-financial private company total financing as of the second quarter of 2012.
2/ Refers to direct loans granted to the non-financial private sector by commercial and development banks.
3/ Includes credit granted to leasing companies, factoring companies, credit unions, popular savings and loans entities, regulated sofoles and sofomes

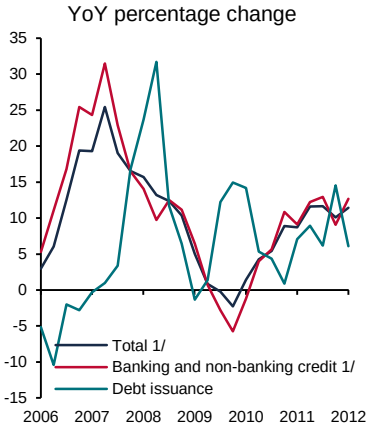
Graph 79
Total financing to non-financial private companies

a) Total financing to companies



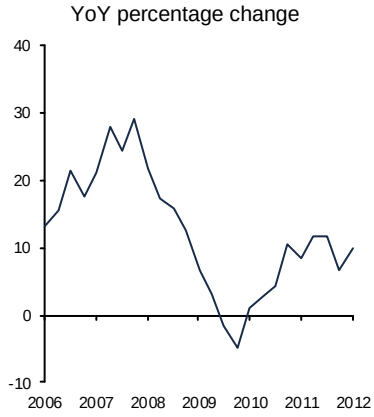
Figures as of June 2012
Source: Banco de México

b) Internal financing to companies by instrument



Figures as of June 2012
Source: Banco de México

c) Commercial bank performing loans to the non-financial private sector [2/ 3/]



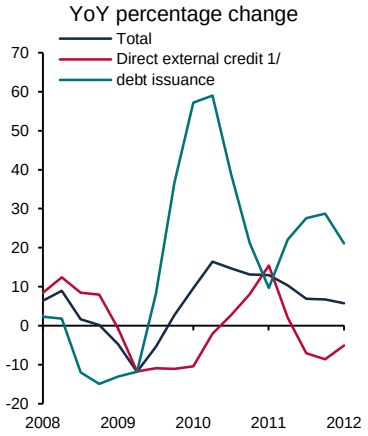
Figures as of June 2012
Source: Banco de México

1/ These figures are affected by the conversion of some non-financial private companies into unregulated sofomes (NRE).
2/ As of February 2009, figures are affected by the reclassification of loans to from the consumer credit to the commercial bank portfolio.
3/ Between January and December 2007, figures were adjusted so that they were not distorted by the reclassification of bridge loans from the housing to the corporate sector.

As far as external financing to non-financial private companies is concerned, it recorded an expansion throughout 2011 and the first half of 2012 (graph 80a). This was a reflection of greater external debt issuances (graph 80b). In contrast, external direct financing –defined as loans granted by commercial banks, suppliers, export-import banks and other foreign loans− declined owing to lower financing by suppliers and the reduced number of loans granted by foreign commercial banks (graph 80c). Hence, external financing in dollars registered annual growth of 5.7 percent during the first half of 2012, compared with 13 percent in the same period of 2011. On one side, external debt issuances in dollars grew by 21.1 percent in annual terms in June 2012 versus 9.7 percent in the same month of the prior year. On the other side, external loans decreased by 5.1 percent versus the increase of 15.4 percent recorded in the same month of the previous year.

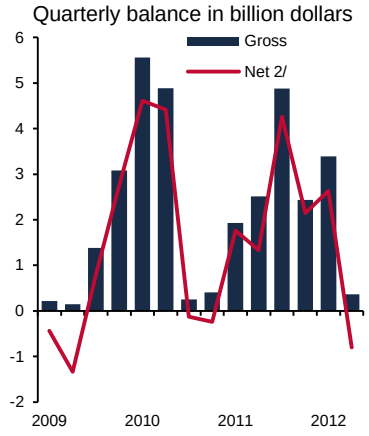
Graph 80
Foreign financing to non-financial private companies

a) Foreign financing in dollars to non-financial private companies



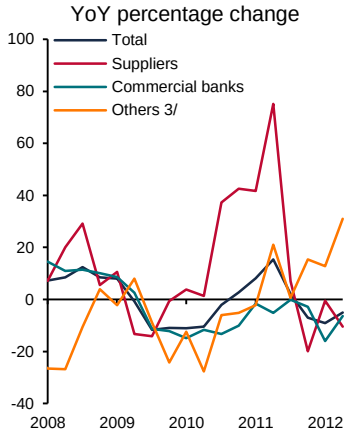
Figures as of June 2012
Source: Banco de México

b) Overseas debt placements by non-financial private companies



Figures as of June 2012
Source: Banco de México

c) Foreign loans in dollars to non-financial private companies



Figures as of June 2012
Source: Banco de México

1/ Refers to credit granted by commercial, bilateral banks (Ex-Im Banks), suppliers and other external banks.
2/ Refers to the difference between the gross balance of placements and due balances over the quarter.
3/ Includes bilateral banks (Ex-Im Banks), the World Bank International Finance Corporation (IFC), and balances of bonds with a capital default.

6.3 Public sector

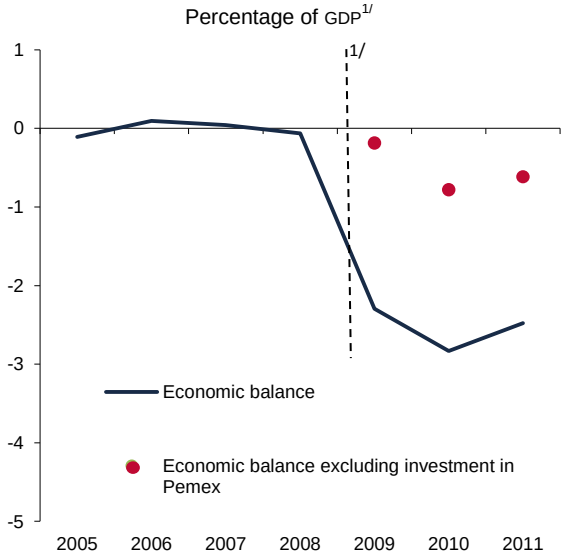
Public-sector finances were favorable throughout 2011 up to July 2012 due to higher budget income related to economic growth, higher oil prices and sound fiscal practices. In 2011 budget revenue surpassed the level provided for in the approved economic package. This enabled an increase in public expenditure above the foreseen amount, as well as compliance with the fiscal balance target. The public-sector deficit was 353.5 billion pesos (2.5 percent of GDP) (graph 81a), and 86.2 billion pesos (0.6 percent of GDP) excluding physical investment in Pemex. In both cases, the amounts are slightly different from the approved ones but within the limits established by the Federal Law for Budget and Fiscal Accountability (LFPyRH).[136] In addition, these deficits were lower

[136] The traditional public or economic balance is a reflection of the public sector's net financial position and is employed to assess compliance with Non-Financial Federal Public Administration's budget targets. For that purpose, the LFPyRH establishes a margin of deviation equivalent to 1 percent of total net expenditure approved in the Federal Budget for each fiscal year (34.1 billion pesos in 2010).

than those of 2010, which recorded levels of 370.5 (2.8 percent of GDP) and 102.0 billion pesos (0.8 percent of GDP), respectively. As for Public-Sector Borrowing Requirements (RFSP), they accounted for 2.7 percent of GDP in 2011, 0.2 and 0.8 percentage points lower than the level provided for in the approved fiscal package (2.9 percent of GDP) and the level observed in 2010 (3.5 percent of GDP), respectively (graph 81b).[137]

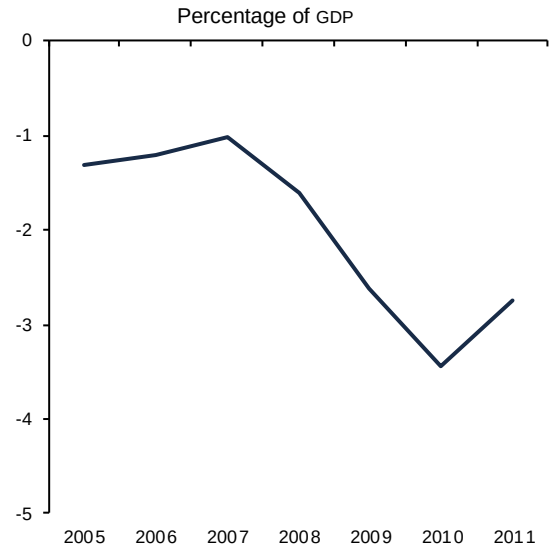
Graph 81
Fiscal indicators

a) Economic balance



Figures as of December each year
Source: SHCP

b) Public-sector borrowing requirements



Figures as of December each year
Source: SHCP

1/ As of 2009, investment in Pemex is excluded from the economic balance in order to assess if the budgetary target was reached.

In 2012, the Congress of the Union approved a traditional public deficit of 368.9 billion pesos (2.4 percent of GDP) and 67.6 billion pesos (0.4 percent of GDP) excluding the investment in Pemex. Both cases reflect a reduction of the deficit as a percentage of GDP versus the levels recorded in 2011, as a result of a gradually reduced fiscal boost. This harmonizes, on one side, with the objective of progressively reestablishing the budget balance equilibrium, albeit at a slower pace than originally foreseen[138], and, on the other side, with a medium- and long-term sustainable path for public debt. Concurrently, RFSP 2012 estimates account for 2.8 percent of GDP, 0.1 percentage points above the 2011 level.

As of July 2012, the traditional public balance and RFSP were in line with the amounts approved for the year. Despite international economic uncertainty in recent months, the latest macroeconomic projections for 2012 reflected a more favorable scenario *vis-à-vis* the approved fiscal package. In particular, higher economic growth and a higher price for the Mexican oil-mix are

[137] The RFSP correspond to the broadest measure of the fiscal stance by including the financing needs of additional liabilities (Pidiregas, Fonadin, IPAB and Debtor Support Programs) in the traditional public balance and the expected loss or gain on credit granted by development banks and funds and trusts regulated by the CNBV.

[138] For the first time since the LFPYRH came into effect, the fiscal package used the exception clause to permit a temporary deficit in the traditional public balance –excluding investment in Pemex–, as it was forecast that in 2010 and 2011 the GDP would trail behind its potential growth. It was estimated that such temporary deficit would disappear in 2012. Nevertheless, when the 2012 fiscal package was presented in September 2011, it was also expected that the GDP negative gap would prevail for one more year. Consequently, the Congress of the Union approved that the reestablishment of the public balance equilibrium -–excluding investment in Pemex– be reached in 2013.

expected. These two factors, along with disciplined public expenditure, reduce the risk of not achieving public finance targets this year.

During the first half of 2012, the total balance of fiscal stabilization funds increased by 27.3 billion pesos in regard to the level observed at the end of 2011.[139] Nonetheless, this increase did not manage to offset the cuts observed in 2009 and 2011; for instance, the available amount as of the second quarter of 2012 accounts for only 35 percent of the level recorded at the end of 2008. This reduction resulted, on one side, from the disbursements made −mainly in 2009− to compensate for the lower public revenues of that year, and, on the other side, from diverse fiscal stances curbing fund capitalization. It should also be noted that, although those disbursements were channeled to investment projects, the situation of the funds impairs the public sector margin for manoeuver in the event of future external shocks.

In 2011 and 2012, public debt policy has shown a high degree of flexibility in order to capitalize on the opportunity areas of local and international financial markets. As of June 2012, federal public-sector net debt was 33.6 percent of GDP, 2.0 percentage points above the December 2011 balance (graph 82a).[140] This increase is consistent with the traditional public deficit for the same period. As of June 2012, the external debt component represented 31.8 percent of the total debt balance (32.8 percent at the end of 2011), while the remaining 68.2 percent corresponded to the internal component (67.2 percent at the end of 2011). This debt structure is in line with the federal strategy of financing most deficits through debt local markets and resorting to external debt just complementarily, thereby reducing the risks attached to the latter source of indebtedness.

As far as the domestic debt is concerned, the federal government has continued to support a flexible placement system, in accordance with the market demand for debt securities. The positive perception of public finances is reflected in increasing foreign investment in long- and short-term Mexican governmental securities. Thus, the weighted average maturity of government bonds peaked to 2,776 days, surpassing the level of 2,682 days reached at the end of 2011 (graph 82b). Consequently, government securities refinancing needs have downtrended, although they rebounded in June 2012 given the maturity expirations that took place in that month (graph 82c).[141]

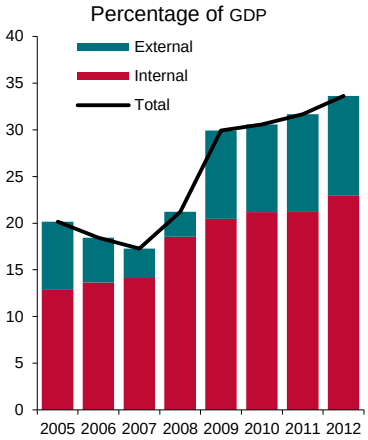
[139] Stabilization funds are a mechanism that reduces the vulnerability of public finances, especially when public revenue is highly dependent on a volatile source. This device is made up of: Oil Income Stabilization Funds (FEIP), State Income Stabilization Funds (FEIEF), Investment in Pemex Infrastructure Stabilization Fund (FEIPEMEX) and the Fund in Support of Pension Restructuring (FARP).

[140] A broader measure of public-sector debt in Mexico is the Public-Sector Borrowing Requirement Historical Balance (SHRFSP), which includes liabilities of the Federal Government and Organisms and Companies, additional liabilities (Pidiregas, Fonadin, IPAB, and Debtor Support Programs) and the equity balance of development banks and funds and trusts regulated by the CNBV (those which are negative). As of June 2012, the SHRFSP amounted to 37.2 percent of GDP, 1.6 percentage points above that recorded at the end of 2011.

[141] Syndicated placements of fixed-rate bonds and udibonos have been key to the extension of the maturities of government securities (see the *Financial markets* section).

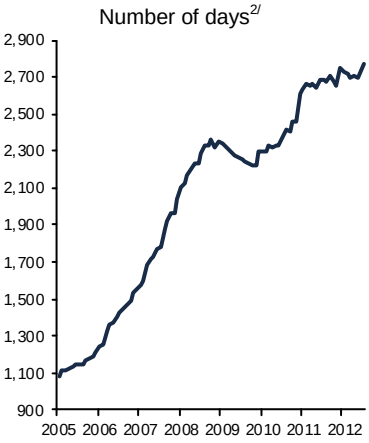
Graph 82
Public debt indicators

a) Federal public-sector net debt



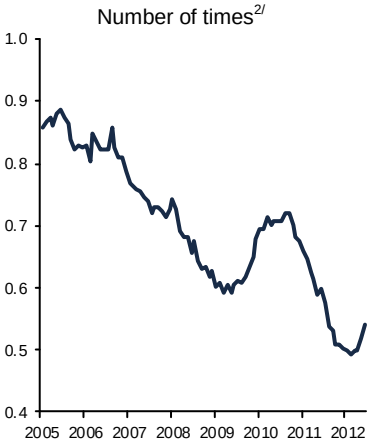
Figures as of June 2012
Source: SHCP

b) Weighted average maturity of internal government securities



Figures as of July 2012
Source: Banco de México

c) Refinancing requirements of internal government securities



Figures as of July 2012
Source: Banco de México

1/ The weighted average maturity is defined as the weighted sum (with respect to the outstanding nominal amount) of the remaining term of all performing securities.
2/ Refers to the number of times the average balance of federal internal securities are refinanced per year.

On the external front, the Federal Government continued to place debt in international markets, strengthening benchmark bonds and broadening and diversifying the investor base. Placements in 2011 and 2012 have taken advantage of historical lows in capital markets: 30- and 10-year debt in US dollars was placed at an interest rate with the narrowest spread versus US treasury bonds. Additionally, Samurai bonds not guaranteed in the Japanese market were placed for the first time. These favorable conditions demonstrate the good market perceptions of the Federal Government's solvency.

7. Risk of contagion and stress tests

In this chapter, we present the results derived from the risk of contagion analysis and stress tests undertaken to assess the stability of the Mexican financial system. During the period of study, there were no significant changes in risk levels. Importantly, the major Mexican financial intermediaries' direct exposure to Eurozone governments, financial intermediaries and companies is low, and so is the risk of direct contagion. This particularly applies to Mexican banks which are Spanish subsidiaries.

7.1 Risk of contagion derived from any given intermediary's bankruptcy

The risk of contagion derived from direct exposure occurs when it is likely that one entity's bankruptcy has immediate effects on other financial entities. The assessment is based on monthly data of: i) risk exposures among banks, brokerage firms, siefores (pension funds) and mutual funds; ii) the aforementioned intermediaries' exposure to foreign entities. Given the European crisis, this edition particularly focuses on Mexican financial intermediaries' exposure to the Eurozone, with a view to assessing the direct risk of contagion with said region.[142] Table 13 shows Mexican financial intermediaries' exposure to foreign entities. Banks are the financial intermediaries with the largest exposures to foreign entities, followed by siefores. Exposures to US-based financial intermediaries are the largest, followed by exposures to intermediaries located in EU countries other than Spain.

Direct risk positions among financial intermediaries change continuously. It is therefore reasonable to analyze their evolution and composition over time. The largest exposures are related to securities, followed by foreign exchange transactions, deposits, loans and derivative transactions (graph 83a). Banks are the financial intermediaries with the largest exposures, followed by mutual funds (graph 83b). On the other hand, financial intermediaries are mainly exposed to commercial banks, foreign counterparties and development banks (graph 83c). The change in the relative importance of exposures by type of counterparty is worthy of mention: from 2008 to mid-2009, exposures to foreign counterparties were the largest, followed by commercial banks. As of mid-2009, the ranking reversed, with exposures to commercial banks increasingly growing.

[142] The risk analysis presented in this report is an extension of those performed in previous years' reports. We used the same methodology described in the 2006 *Financial System Report* –published in May 2007– but also included brokerage firms, mutual funds and siefores, as well as foreign financial intermediaries. The worst possible contagion chain was used for each day of the period examined. Additionally, impact was measured using the sum of the value of bank and brokerage firm assets with a capital adequacy ratio of below 8 percent and a capital consumption ratio of above 100 percent. As explained below, direct exposures in the Mexican financial system to the sovereign debt of some countries were also included; they proved to be nonetheless unimportant during the time horizon analyzed. The foreign financial institutions considered in this analysis are those to which financial intermediaries have the largest exposure.

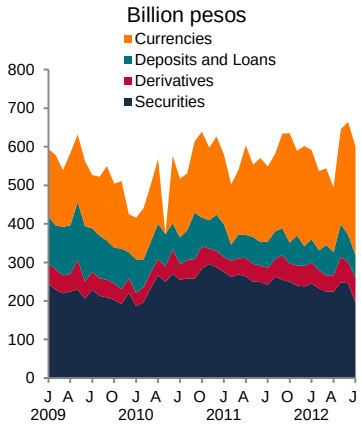
Table 13
Exposures of Mexican financial intermediaries to foreign entities[1/]
Billion pesos

Creditor/Debtor	US	Europe		Latin America	Others	Total
		Spain	Others			
Commercial banks	23.1	14.5	12.8	13.1	0.9	**64.5**
Development banks	1.1	1.1	7.7	0.4	1.2	**11.6**
Brokerage firms	-	-	0.5	1.6	-	**2.1**
Mutual funds	4.4	2.0	0.4	6.1	-	**12.9**
Siefores	30.4	0.7	3.6	0.2	1.3	**36.3**
Total	**59.1**	**18.4**	**25.1**	**21.4**	**3.5**	**127.4**

Figures as of June 2012
Source: Banco de México
1/ Exposure is defined as the aggregate net creditor position of deposits, loans, securities holdings, the positive net valuation of derivatives contracts and the net creditor position of guarantees, repos, securities loans and value date transactions.

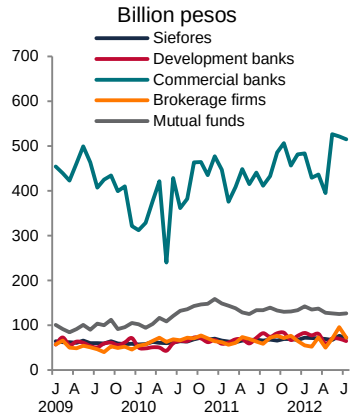
Graph 83
Risk positions of commercial banks, brokerage firms, siefores and mutual funds

a) Value at risk position between intermediaries by type of transaction



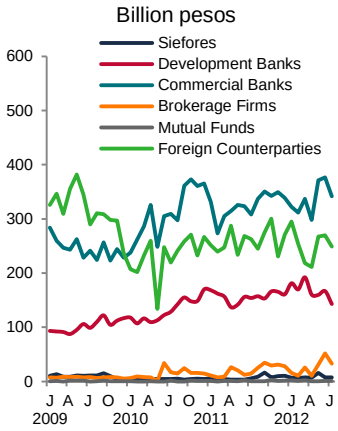
Figures as of June 2012
Source: Banco de México

b) Value at risk position by type of intermediary



Figures as of June 2012
Source: Banco de México

c) Value at risk position by type of counterparty

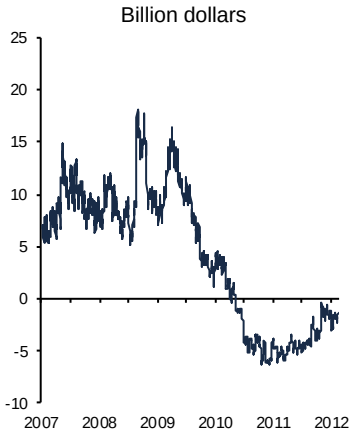


Figures as of June 2012
Source: Banco de México

The net exposures of resident commercial banks to their foreign counterparties rose considerably during some stages of the crisis. As of the second half of 2009, nevertheless, such exposures displayed a sustained decrease. Currently, Mexican banks maintain a net debtor position (graph 84a), although this trend started to change as of 2011. The largest exposures correspond to financial intermediaries domiciled in the United States and Europe (graph 84b and c). Since the beginning of 2011, the percentage of banks and brokerage firms' assets that could be affected in the event the worst possible chain of contagion was triggered increased, although it remains at relatively low levels (graph 85a). Furthermore, in the event the abovementioned worst possible chain of contagion was triggered, the biggest losses would be suffered from banks, followed by brokerage firms, mutual funds and siefores (graph 85b).

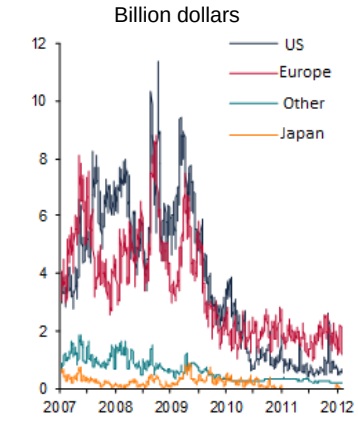
Graph 84
Net positions of Mexican banks with foreign banks

a) Net position



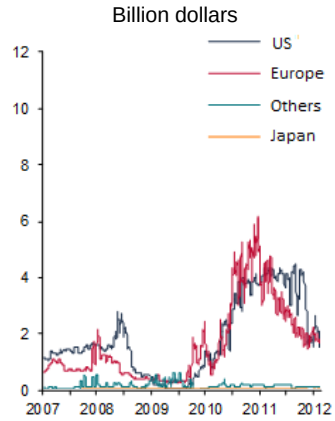
Figures as of June 2012
Source: Banco de México

b) Mexican Banks' creditor position by counterparties' geographical location



Figures as of June 2012
Source: Banco de México

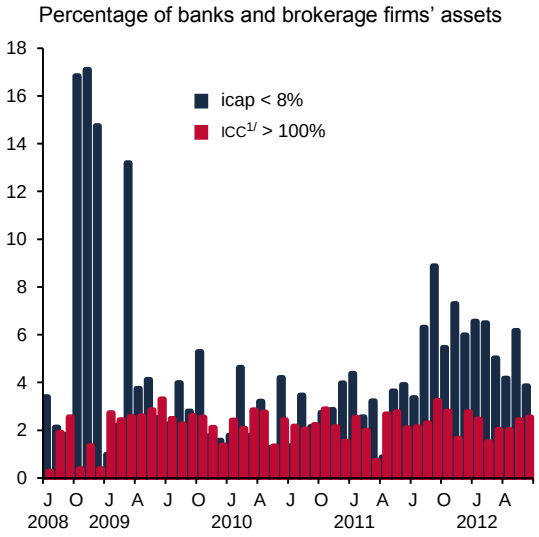
c) Mexican Banks' debtor position by counterparties' geographical location



Figures as of June 2012
Source: Banco de México

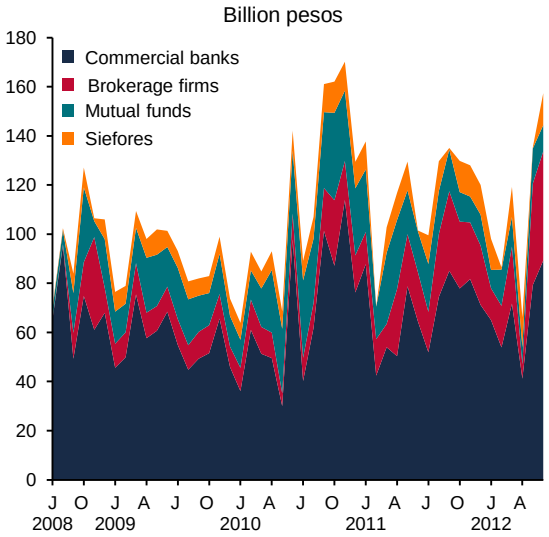
Graph 85
Main results of the calculation of contagion: banks and brokerage firms

a) Banks and brokerage firms' assets that could be affected in case the worst possible chain of contagion was triggered



Figures as of June 2012
Source: Banco de México

b) Maximum losses in the financial system if the worst possible chain of contagion was triggered



Figures as of June 2012
Source: Banco de México

1/ The capital consumption index (CCI) is defined as the ratio of capital requirements to global capital.

7.2 Macroeconomic-based stress scenarios and sensitivity tests

Stress tests are used to evaluate the stability of an entity or the financial system as a whole in adverse scenarios. The aim could be either to detect vulnerabilities associated to specific risk factors (interest rates, foreign exchange rates, etc.), to determine the capital needs of institutions or to help identify possible systemic events stemming from financial entities, common risks or exogenous factors.[143] The results we present below derive from stress tests using extreme but feasible scenarios, so as to corroborate institutional strength in the face of exogenous shocks, both at the individual and group levels.[144]

In order to generate stress scenarios, economic and financial factors prone to affecting the value of commercial banks and brokerage firms' assets were selected. In other words, macroeconomic-based scenarios were generated.[145] These scenarios imply possible severe shocks of three standard deviations on average on the variables (graph 86a). Additionally, a large number of scenarios were included, with the purpose of evaluating various adverse factor combinations, instead of just one pathway. Firstly, the effect of shocks on the intermediaries' market positions and the potential contagion effect were assessed. Secondly, the scenarios were projected 36 months forward to assess possible effects on the loan portfolio.

Market stress tests

First, the impact of the selected scenarios on banks and brokerage firms' market positions was evaluated. Then, loss distributions for these entities and the system as a whole were obtained. The solvency of some institutions might be hit in some scenarios: a contagion process that increases losses for the system is therefore possible. The losses for the system before contagion totaled an average 1.9 percent of banks and brokerage firms' capital. Once the contagion effect is taken into account, the average losses were 1.7 times bigger (graph 86b). This process permits to identify the combination of changes in macroeconomic and financial variables that increases the system's fragility. The biggest losses for the system were associated to significant and simultaneous increases in interest and foreign exchange rates. The magnitude of these changes would be similar to the rises in interest rates and the depreciation observed in the beginning of 1995.[146] Furthermore, they would be accompanied by substantial drops in stock indexes and other foreign variables.

[143] See Borio, C., Drehmann, M., & Tsatsaronis, K. (2012). Stress-testing macro stress testing: Does it live up to expectations? BIS Working Paper 369. Basel, Switzerland: Bank for International Settlements.

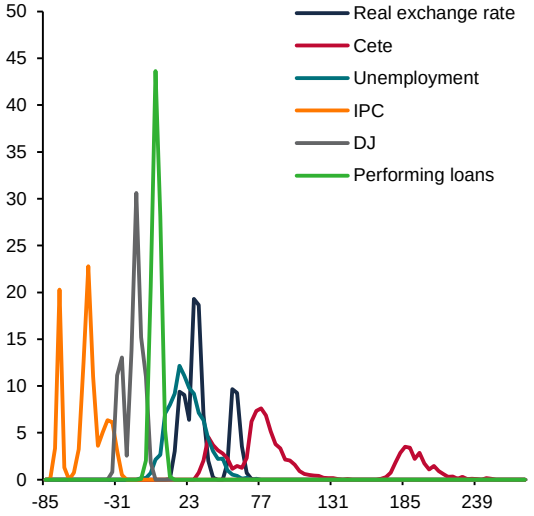
[144] The magnitude of changes in risk factors are usually not as severe as the worst historical levels for each variable; yet, a number of these adverse shocks occur simultaneously, resulting in more serious losses.

[145] The process is similar to that of previous stress tests (see box 5 of the 2010 *Financial System Report*).

[146] At the end of January 1995, the foreign exchange rate had depreciated 70 percent *vis-à-vis* the levels recorded three months earlier; likewise, the interest rate had spiked 150 percent *vis-à-vis* the level recorded three months earlier.

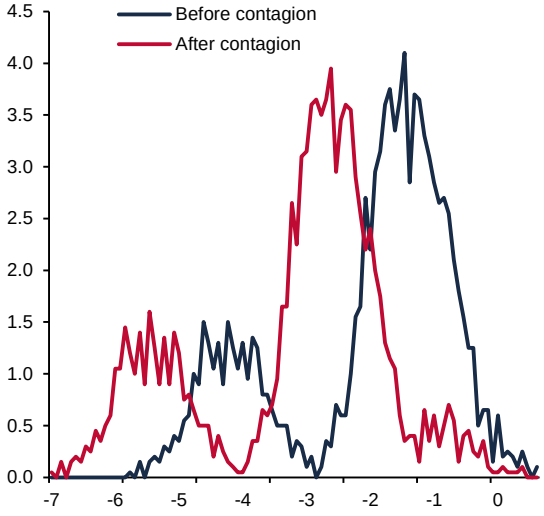
Graph 86
Distribution of stress scenarios and loss distribution under those scenarios

a) Distribution of percentage changes in some variables used



Figures as of June 2012
Source: Banco de México

b) Distribution of losses of the system before and after contagion



Figures as of June 2012
Source: Banco de México

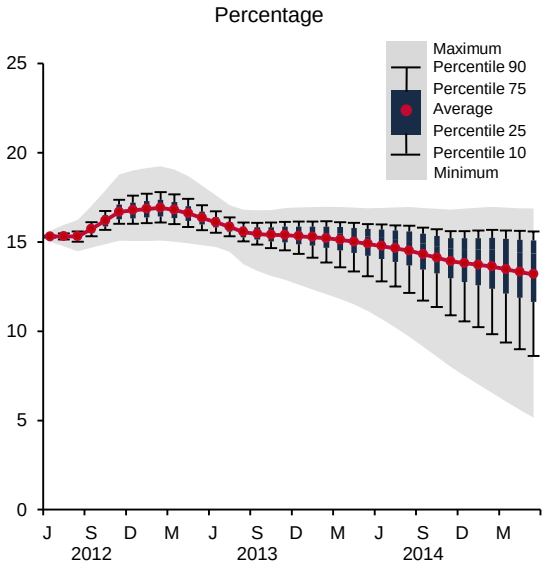
Credit stress tests

The fundamental differences between market and credit portfolios make it hard to perform simultaneous stress tests on both portfolios. In previous editions of this *Report*, credit stress exercises had been carried out independently from the macroeconomic scenarios defined for market stress tests, which assumed changes in risk factors in a one-month horizon. The time horizon for credit stress tests is bigger, for defaults do not materialize instantaneously nor at the same time. The exercise we present below followed the macroeconomic model employed to generate market scenarios, but with an extension to 36 months. This enabled a direct linkage between model variables and delinquency rates in bank loan portfolios. With this methodology, the delinquency rate is thus no longer exogenous.[147] Stress tests take into account a broad range of scenarios and not only a single pathway. Hence, for each scenario and time horizon, shocks to delinquency rates, the performing loan portfolio growth rate and interest rates were applied. From those values, the trend of variables such as non-performing loans, the creation of reserves, net monthly profits, capital and risk-weighted assets was determined. It was therefore possible to estimate losses and a capital adequacy ratio for each bank in every period and every scenario. Graph 87a shows the evolution of the system's capital adequacy ratio resulting from the credit stress test over the period of study. Graph 87b shows the distribution of the system's capital adequacy ratio on different dates.

[147] For the methodology employed, see Box 29 of the 2007 *Financial System Report*, published in May 2008. This exercise follows the same basic steps; yet, this time it is possible to link the macroeconomic shock effects to the credit portfolio's performance. Hence the credit loss distribution may vary according to the intensity of the shock, or, to the most-stricken variables (i.e. the unemployment rate or the foreign exchange rate). Effects on every single bank are measured independently. Thus, depending on the particular traits of each bank's credit portfolio, the shock effects may vary among entities.

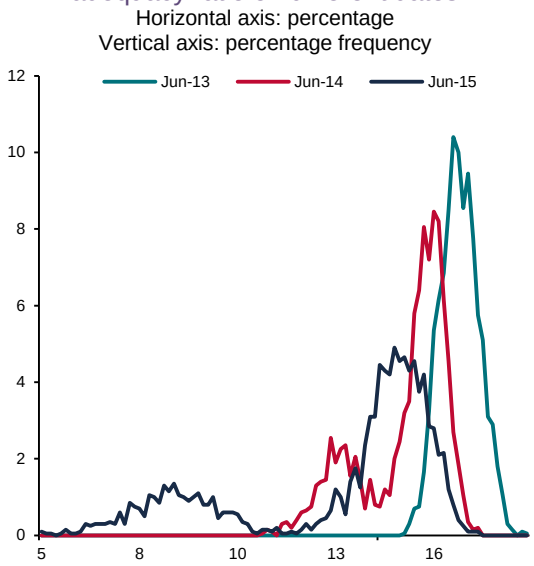
Graph 87
The sytem's capital adequacy ratio: Evolution and distribution on different dates

a) Evolution of the system's capital adequacy ratio resulting from the credit stress test



Figures as of June 2012
Source: Banco de México

b) Distribution of the system's capital adequacy ratio on different dates



Figures as of June 2012
Source: Banco de México

In most of the described scenarios, the adverse effects did not jeopardize the solvency of the banking system as a whole, for in more than 80% of cases, the system's capitalization level was higher than 10 percent. The group of scenarios that would lead to capitalization levels below 10 percent imply initial shocks similar to those observed during the worst moments of recent crises. In those scenarios, either average quarterly GDP falls of five percent are recorded or real depreciations of fifty percent, threefold interest rates or a 5% decline in the US industrial production.[148] The absence of the macroeconomic imbalances of prior crises suggests such a scenario would be very unlikely. Nevertheless, if it were to materialize, the Mexican financial system counts on a sufficient level of aggregate capital to absorb the losses derived from such adverse conditions.

[148] Estimations are based on historical data as of 1986. Hence, some results of the simulation may be similar to the foreign exchange depreciation of 1995, the stock market crash of 1987 or the GDP downfall of 2009. The main difference between these simulations and historical scenarios is that in the former simultaneous shocks may occur, thus leading to extremely severe scenarios.

8. Balance of risks and conclusions

The major risks currently faced by the Mexican financial system are similar to those described in our last edition *Report*, released in October 2011. Nevertheless, their balance has consequently deteriorated, mainly due to the worsening of the European crisis and the slowdown in global economic activity. Additionally, an abrupt reversal of capital flows to emerging economies poses further concerns, as do the possible effects of the global financial institutions' deleveraging process. Along these lines, some inner risks exist, that, although they do not pose a systemic threat to the financial system, their potential impact on some financial institutions and economic sectors should be monitored. Among them, we should note the surge in certain types of loans, some business models' particular vulnerability to extreme or high-liquidity-risk events, risks derived from the reduction in the supply of catastrophic insurances and the financial sector not being subject to traditional banking regulation, as well as operational risks.

Further deterioration of the European situation

The worsening of the Eurozone crisis and the lack of credible and forceful measures to tackle the situation have fueled expectations of default on payment or, ultimately, the relinquishment of the common currency by certain countries. Moreover, the latter events would bring about volatility bouts and disruptions in international financial markets. The Spanish case is of particular relevance to Mexico, given the significant role of banks owned by Spanish financial institutions in the Mexican market. Hence, the Mexican financial system could be affected, should one of these institutions face insolvency or their credit ratings be downgraded.

The possibility of direct contagion between European banks and their Mexican subsidiaries is limited by two factors; namely, the legal implications derived from the application of the current Mexican affiliate structure to global banks and the limits set forth by current regulation on transactions between related parties. Unlike what is common practice in other countries, in Mexico, foreign banks are not allowed to operate through branches –these are mere extensions of legal personality and they operate jointly with the head office as a single entity− but only through affiliates or subsidiaries. Thus, credit institutions operating in Mexico are entered into as corporations in conformity with Mexican legislation. Even though foreign companies partake in their capital, these corporations have their own legal personality and assets, independent from their parent companies. These rules, apart from reducing direct contagion risks between the foreign entity and its affiliate, bring all banks established in Mexico under the same regulatory framework, including norms relative to their liquidation and dissolution. Moreover, Mexican authorities have implemented very strict limits to exposures to parent companies and required previous authorization for significant risk transfers between them.

On the other hand, the Mexican banking loan portfolio is funded by local deposits and other sources; consequently, the financial banking supply should not be affected by credit stringency abroad. In fact, local banks owned by European financial institutions continue to operate normally and a variation in their performance is remotely likely.

Slowdown in economic growth and the US fiscal cliff

Concerns over the weakening of global economic activity have grown as of the second quarter, in the wake of the release of sundry economic indicators. Although these fears are driven by the economic slowdown in advanced countries, essentially in the Eurozone, a similar situation is observed in the United States and the main developing countries –China, India and Brazil.

Mexican economic growth is linked to US economic growth, especially in the industrial sector. Thus, a possible US economic downfall represents a threat to the Mexican financial system. Such an event could impact production and employment, hence affecting the balances of domestic financial institutions and strengthening the effects of the initial shock. In the current economic climate, two risk factors may be conducive to a severe slowdown in the US economic activity, and hence, in Mexico: first, a disorderly ending of the Eurozone crisis; second, a US recession by cause of expected changes in tax and public expenditure policies as of January 2013, provided the American Congress does not reach new agreements. A legislative conflict around the approval of a new increase of the federal debt ceiling would only aggravate the situation.

As far as the first factor is concerned, the US recovery has been slow over the last months, partly as a result of a weaker European economy. Although a warning sign, this does not necessarily imply that the US economy would slide into recession, were this catastrophic scenario to materialize. Contrary to what happened four years ago, it would be Europe and not the US financial system the epicenter of a new international financial crisis. This introduces a substantial qualitative difference, both for the US itself and its main commercial partners, like Mexico. Undoubtedly, the domestic economy would be hit by a disorderly outcome of the European crisis, although it seems reasonable to expect a less direct and serious impact than that observed during the last international financial crisis.

In regard to the second factor, it could throw the US economy into recession at an already critical juncture. This recession would not only further delay a global economic upswing and worsen the European crisis, but would also have serious direct repercussions on the external demand for Mexican products and the domestic industrial activity. Yet, there are two other factors that contribute to a more positive outlook. On one hand, it is very unlikely that the US Congress will not reach an agreement to avert the fiscal cliff. According to some specialists, despite the limited amount of time left after the presidential elections of November 2012, it will be enough to extend certain fiscal measures and approve of a new public debt ceiling, all while making more significant commitments in the fiscal consolidation domain. On the other hand, in the event of a fiscal crisis, the domestic contraction would not be as intense as the one of 2008, for the US recession would also be softer than the one recorded at that time. This, because an erosion of consumer confidence as the one observed at the end of 2008 would hardly occur –back in 2008, housing prices were plummeting and there were running fears of a global financial collapse.[149]

The possibility of an abrupt reversal of capital flows

The risk that the global crisis worsens and thus pushes investors to seek safe-haven assets has not diverted capital flows from Mexico. Nevertheless, the two higher volatility bouts recorded in international foreign exchange markets during the fourth quarter of 2011 and the second quarter of 2012 shed light on the relative sensitivity of the peso parity in the face of swings in international investors' risk appetite. Yet, institutional investors' share in peso-denominated instruments has risen in recent years, thereby conferring greater stability and liquidity to the peso. This, together with shrinking investment options in the region has drawn other major investors' interest –e.g. sovereign funds- to Mexican bonds. Furthermore, perspectives of an economic slowdown and overly lax monetary policies in developed countries, along with a sound financial system, orderly public

[149] In the aftermath of the international financial crisis that broke out when Lehman Brothers went bankrupt in September 2008, the US economy contracted 3.1 percent in 2009. According to the Congressional Budget Office, the envisaged fiscal policy changes would bring about a 0.5 percent GDP reduction at the end of that year. Some private-sector analysts estimate that the economic contraction could amount to 1.0 percent.

finances and reasonably high levels of international reserves in Mexico, make it possible to foresee a significant continuance of these capital inflows.

Global financial disintermediation

The deleveraging process that a number of global financial institutions currently undergo in order to meet higher capital and liquidity requirements is enabling a considerable reallocation of financial resources among countries and financial sectors. Certain global banks are concentrating their activities in countries and regions offering the best risk-return trade-off. Similarly, they are divesting financial sectors viewed as less profitable or not providing synergies with their core business. Hence the geographically-based reallocation is being influenced by the particular way in which each country or region has adopted new international regulatory standards and each global financial institution manages risk. This situation could lead global banks to allocate more resources to their countries of origin, to the detriment of the economies in which they participate as foreign banks, and, thus, to concentrate their risks. Such a phenomenon would in turn give rise to inefficiencies and a not inconsiderable rise in financing costs for private companies residing in the host countries but using foreign funds.

Furthermore, the financial deleveraging effort could be hindered by a price rise in funds, which global banks count on to raise their capital levels. By way of illustration, US and some European countries' authorities have conducted enquiries around money laundering, Libor manipulation, forbidden transactions and altered oversight reports. The international financial regulation agenda is directed towards strengthening financial institutions' solvency and liquidity, in order to diminish systemic risk –the emphasis is placed on institutions bearing systemic relevance−. However, the above described situation casts doubts on whether enough emphasis has been placed on the oversight of such institutions' internal controls. Reputational risk could gain in importance in the case of global banks, and, particularly, the described situation could raise their contingent liabilities. The money laundering issue is not new and has been enquired for long. Results of such enquiries could entail elevated fines and the issuance of even more strict rules, at a junction where capital has become scarce. Finally, there is also the danger of the reemergence of protectionist measures restraining international trade, which could be explained by both the global economic slowdown and concerns over the worsening of the European crisis.

There are others risks, different from the ones previously mentioned, that, despite not posing a systemic threat to the Mexican financial system, should be monitored, given their impact on some financial institutions and economic sectors; namely, risks related to the surge in personal and payroll loans and the state and municipalities' indebtedness; risks derived from certain business model's vulnerability to extreme or high liquidity-risk events, exposure to operational risks and the situation of the catastrophic reinsurance market.

The surge in certain types of loans

The rapid growth of a loan portfolio is frequently the cause of its subsequent decay.[150] Among the reasons that could explain the rapid growth-deterioration relation we find: the granting entity's malpractice during the origination process, on one side; and the reduced payment capacity of debtors as a result of higher indebtedness levels, on the other side. It could take a while before this deterioration is reflected in traditional indicators, such as the delinquency ratio, since its

[150] See: Reinhart Carmen and Rogoff Kenneth, "This Time is Different: Eight Centuries of Financial Folly", Princeton University Press, 2009.

denominator (granted loan amount) tends to rise for some time at higher rates than its numerator (non-performing loans). This happened with the Mexican credit card loan portfolio in 2006.

The economic slowdown that followed the beginning of the current international crisis brought about a significant rise in commercial bank loans to states and municipalities. The growth in this portfolio was accompanied by a considerable increase in debtors' indebtedness levels –in some cases, they were far above their capacity to obtain funds−, thus leading to the restructuring of some of those liabilities. At an aggregate level, commercial bank loans to that sector do not represent a significant amount and, therefore, do not introduce a systemic risk either. Nonetheless, at an individual level, said loans represent a substantial part of some financial intermediaries' assets, particularly of those whose business models entail considerable liquidity risks.

During 2012 a surge in personal and payroll loans was observed. The latter present diverse advantages to creditors, for payments are directly discounted from the debtor's accounts where payrolls are deposited. However, the terms for those loans have been increasing. Labor mobility and the possibility of transferring payroll accounts to other banks, by either the employer's or the employee's will, suppress the advantages of this kind of financing versus other unsecured loans. Besides the potential problems derived from poor origination or the possibility of payrolls being paid through an entity other than the creditor bank, debtors' over-indebtedness may also affect payment of obligations. Payroll loans are being actively offered by entities not subject to financial regulation that are therefore not obliged to report data to credit information institutions. The lack of data over indebtedness and debtors' performance in this business niche prevents granting entities from adequately assessing risk; hence, they could suffer from overindebtedness in certain population sectors.

Banks are currently working on a corporate solution to avert the deterioration of this loan portfolio, resulting from payrolls being settled through entities different from the creditor bank. The CNBV, on its part, is overseeing origination processes of entities subject to its regulation and supervision.

Financial business models vulnerable to extreme or high-liquidity-risk events

Stress test results show that banks and brokerage firms can put up with extreme events, and that such events do not jeopardize their viability. According to these test results, nonetheless, some intermediaries might suffer considerable losses in extreme events characterized by simultaneous and significant changes in share prices, foreign exchange and interest rates. The hardest-hit intermediaries are those whose business model's concentration in securities trading makes them particularly vulnerable to financial variables.

There are other financial intermediaries with business models particularly exposed to liquidity risk, given their high dependence on money market funds. This market is highly sensitive to adverse scenarios; thus, any given shock causes suppliers to rapidly withdraw funds. This risk bears particular relevance for some institutions whose funds are concentrated in a few counterparties. The vulnerability of these business models became evident during the first stage of the current financial crisis, when several financial institutions had to be liquidated after having lost access to money markets. Lastly, credit stress test results demonstrate that the Mexican banking system possesses enough capital and reserves to cope with extreme scenarios, although some banks could suffer losses that might put their solvency at risk.

Aiming at strengthening Mexican banks and thus enabling them to better deal with liquidity eventualities, Banco de México and the CNBV are currently working on the design and implementation of liquidity rules taking into account both international best practices and the

recommendations issued by the Basel Committee on Banking Supervision. Considerable efforts have been made to increase the granularity and regularity of data reported by financial intermediaries to authorities, in order to better assess the characteristics of future rules. Importantly, Mexican banks are already subject to a strict regulation in the field of foreign currency liquidity.

Risks derived from the reduced supply of catastrophic insurance coverage

The contraction of the catastrophic reinsurance supply triggered by a major disaster prevents local insurers from offering affordable insurance in order to meet the demand for catastrophic coverage. This bears particular relevance to Mexico, given its geographical location, which makes it significantly vulnerable to damages caused by natural disasters, such as earthquakes and hurricanes. Catastrophic insurance coverage enables the swift replenishment of assets and thus reactivates economic activity in disaster-stricken areas or regions. It is thus necessary to assess the convenience of implementing explicit off-balance-sheet compensation schemes for long-term catastrophic risks with government involvement relating design and operation matters. Such a scheme would allow for an immediate replacement of catastrophic reinsurance coverage in scenarios where said coverage was compromised at an international level. Even though OBS compensation schemes may imply an important step forward in terms of a more efficient management of catastrophe risks in Mexico, they do not intrinsically represent a solution for low penetration, which in turn responds to other factors influencing supply and demand. Finally, as explained in the insurance section, the absence of OBS compensation devices is catered for through the prudential regime to which Mexican insurance companies are subject.

Intermediaries' exposure to operational risks

Mexican financial intermediaries are not only exposed to market and liquidity credit risks, but also to operational risks. Although these non-traditional risks are usually associated to low-frequency events, the losses derived from their incidence may be large and jeopardize the stability of the financial system as a whole. The case of the Bulltick brokerage firm may be included in this heading –as previously explained, Bulltick requested the revocation of its license after having entered a series of erroneous sell-orders−, along with court proceedings resulting in massive losses for some financial system participants. Even though these risks are not new, recent events have highlighted the need to strengthen the relative prudential regulation and take steps to reinforce the system's infrastructure, with a view to limiting their impact.

Conclusions

The international environment continued to deteriorate during the period covered by this *Report* to give way to an unusually complex and uncertain climate. During the referred period, the risks threatening global financial stability not only persist but have also sharpened. Given the existence of various potential contagion channels, it would not be reasonable to assume that the domestic economy in general, and the financial system in particular, would indefinitely remain immune to eventualities that could materialize in European, US or other emergent economies.

The major financial intermediaries established in Mexico have continued to grow and foster economic activity. Credit no the non-financial private sector has picked up in all headings, particularly in the corporate and consumer sector; the latter has been mainly driven by personal and payroll loans. Apart from being well capitalized, the banking sector possesses high reserve and adequate liquidity levels. The loan portfolio is financed with local peso-denominated deposits.

The European crisis and the need to increase capital adequacy ratios have made some global banks sell some business lines and prioritize certain activities over others. In Mexico, this is reflected in the sale of some assets and the announcement by certain foreign financial groups, especially European, of their intention to follow suit. This situation poses a challenge in terms of the possible effects such strategies might have on the financial system's concentration. Added to this is some intermediaries' lower activity, mainly in trading headings, which is evident in the fall of securities investments and cash.

Nevertheless, the features of the current affiliate model and the regulatory measures adopted by authorities have limited the international crisis impact on Mexican banks. This model brings all banks established in Mexico under the same oversight rules and procedures irrespective of their nationalities or shareholders' characteristics. Therefore all foreign bank affiliates must possess capital, reserves and liquidity of their own. Similarly, in order to protect the Mexican financial system in the event that the parent company of an affiliate in Mexico was in trouble, authorities have reinforced prudential measures, such as a limit -25% of Tier 1 capital- to banks' exposure to related parties. In addition, with the purpose of preventing the transfer of assets and liabilities under non-market conditions, Banco de México issued a circular in October 2012 imposing a mandatory authorization request on such and other transactions among banks operating in Mexico and relevant related parties exceeding 25 percent of Tier 1 capital in one year. Finally, just as other financial authorities, the central bank is willing to adopt all necessary measures to contribute to the strength of the financial system, including that of foreign banks' Mexican affiliates, in the face of potential threats. The major financial intermediaries' direct exposure to Eurozone governments, financial entities and companies is meager, and thus, the risk of direct contagion –this is especially true for the Mexican affiliates of Spanish banks-. Furthermore, stress tests show that in most scenarios the adverse effects do not jeopardize the overall solvency of the financial system.

The situation of other financial intermediaries also contributes to the financial system's stability and evolution. Pension funds, the second largest intermediaries in Mexico, are subject to a regulation that establishes both the loan portfolio percentage they can invest in diverse instruments and the total risk limits that they can assume. The insurance sector, on its part, has kept up with its growth in a highly competitive environment. This performance has been supported by a solid financial and solvency position that encompasses reasonable reserve levels to cope with the kind of catastrophic risks Mexico is particularly exposed to. Stress tests undertaken by the National Insurance and Surety Commission show that the insurance sector can absorb the effects of adverse shocks related to dramatic declines in interest rates and significant rises in claims ratios. Finally, the development banking sector is adequately capitalized and its total loan portfolio keeps on growing –primarily first-tier loans to the private sector-, as does, although at a slower pace, the contingent balance associated to the guarantees issued by these entities (induced credit).

Mexican financial markets have not been immune to foreign market conditions, even though they have demonstrated to be sufficiently liquid and thus to have promoted an adequate price setting process. The securities market, negatively impacted during the last quarter of 2011, has picked up over 2012, particularly in the government debt sector. Significant reductions in interest rates along the debt securities' yield curve have been observed, with record lows in virtually all maturities.

The Mexican financial system has been able to strongly deal with the adverse international scene, thanks to the financial reforms undertaken over the last fifteen years and recent prudential measures adopted to reduce financial entities' exposure to related counterparties that would compromise their stability. Nonetheless, given the complex international environment and multiple contagion channels –internal and external− that may impact the Mexican economy and financial system, it is advisable to double regulatory and supervision efforts. The international crisis that began in 2008 highlighted once again the enormous welfare costs implied by disruptions in financial

systems. It is also important to capitalize on the current Mexican robust position to adopt measures and regulations, in order to go beyond the complicated current climate.

Some of the medium-term measures and actions that will be indispensable to maintain a strong financial system in Mexico are listed below

i. To ensure the availability of resources and human capital necessary to strengthen the financial regulation and oversight systems, considering the increase in both the number of regulated intermediaries and the perimeter of regulation. This way, financial authorities can efficiently fulfill those functions in a complex and uncertain environment.
ii. Make all necessary amendments to the current legal framework, in order to confer enough powers to financial authorities to swiftly and orderly resolve and liquidate banks with insolvency or illiquidity issues at a minimum cost. Changes to the existing legal framework must take into account and include the lessons of the 1995 Mexican banking crisis and the recent international crisis, as well as international best practices and the recommendations made by the Key Attributes of Effective Resolution Regimes for Financial Institutions published by the Financial Stability Board.
iii. Implement a comprehensive liquidity regulation for commercial banks. This should take into account not only foreign currency liquidity as the current regulation does, but also domestic currency liquidity.
iv. Complete the implementation of reforms to capitalization rules that are applicable to commercial banks in accordance with Basel 2.5 and Basel III criteria and standards.
v. Carry out an in-depth revision of the current regulation applicable to financial groups, as well as an assessment of the possible effects of the increasing number of financial groups and entities in hands of non-financial controlling companies on stability, efficiency and competitiveness. Particularly, some changes must be undertaken in order to avert arbitrage, improve risk management and align shareholders' interests with the preservation of solvency among regulated financial intermediaries. All this without prejudice to efficiency and competitiveness.
vi. Assess the convenience of widening the scope of financial regulation and oversight, in order to encompass some of the currently unregulated financial entities. In particular, it will be imperative to evaluate the convenience of regulating and supervising entities having close links with regulated intermediaries, as well as loan granting entities funded by general public deposits or loan granting institutions not obliged to report data to credit bureaus.
vii. The Mexican financial system is characterized by its low penetration. Nevertheless, it is essential that efforts towards increasing it, especially in low-income sectors, are not undertaken through the relaxation of rules and supervision procedures.
viii. Finally, it is fundamental to corroborate the commitments with macroeconomic stability and to continue efforts related to the structural reforms the country needs to increase productivity and competitiveness at an international scale. Even though the macroeconomic policies applied in recent years have generated enough confidence to enable sustained economic growth under financial stability circumstances, it is crucial to double efforts to successfully cope with the adverse and complex international environment.