Banking Outlook

Mexico

First Half 2014
Economic Analysis

- The recovery in the Mexican economy is beginning to show in the lending and deposit figures reported by the banking system. The stronger performance of jobs and consumer spending has fed through into a recovery of credit. Deposit-taking has picked up in line with the acceleration in the economy

- The household financial burden is a key indicator in the measurement of the financial vulnerability of families in an economy. Both of the methodologies proposed reflect an increase in the financial burden, although this is not significant in comparison with other countries

- In terms of individual characteristics, education is a key demand-side factor determining financial inclusion in Mexico. The relationship between education and financial inclusion is positive, so that participation in the formal financial system increases the higher the subjects' level of education

- Six months after the publication of the financial reform, there is still a long way to go before the measures can be fully implemented. This is because a whole raft of secondary legislation has yet to be published

BBVA Bancomer

Content

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1. Summary

The existence of reliable indicators of the level of household indebtedness is essential to carry out systemic and macro-prudential studies of the financial system. These indicators are useful for policy-makers, financial institutions, the agencies responsible for assessing risks in the financial system, for academics and for the general public.

In this context, we present two alternative measures of the financial burden on households in this issue of *Mexico Banking Outlook*. One of these measures is constructed on the basis of data from the National Household Income and Expenditures Survey (ENIGH). This is the more complete of the two, because it includes debts contracted by households with both regulated and unregulated financial intermediaries. Its main limitation is that the ENIGH survey is conducted only every two or three years.

The other measure is constructed based on information about intermediaries' financial balances published by the CNBV and Banxico. This data is used to construct a current indicator of debt servicing by households in Mexico.

Both indicators presented here suggest that **the level of households' indebtedness in Mexico is not high compared to other countries**. However, the indicators also suggest that **a significant number of households face a high financial burden in comparison with their incomes**. The two measures also show that charges have increased sharply in recent years, although this process is hardly surprising in a country with a level of bank penetration as low as Mexico's. Looking forward, these calculations will allow analysis of the levels of indebtedness facing Mexican households, showing whether growth is sound and sustainable.

The recovery in the Mexican economy is beginning to show in the lending and deposit figures reported by the banking system. The slowdown in the economy in 2013 and early 2014 reduced the rate of growth in new lending. However, credit has recovered in step with the economy as a whole, and in particular with jobs and consumer spending. The deceleration of lending bottomed out in February 2014, when credit growth fell to 4.3% per year in real terms, one of the lowest rates in recent years. Since then, the rate has recovered to 4.9% in April and 5.6% in May. Credit will continue to grow at higher rates if the macroeconomic recovery takes hold, as we expect it to do.

Deposit-taking has been affected by similar factors, and it too shows the effects of increased economic activity. Deposits grew at annualised real rates of 9.0% in April and 8.1% in May. In this light, we expect bank deposit-taking to continue growing at high rates as the economic recovery continues over the course of the year.

The main factors determining financial inclusion in Mexico are also analysed in this issue. Studies of this kind represent a key input both for the design of policy intended to increase the level of financial inclusion and for financial institutions seeking business models capable of serving the part of the population that is currently excluded. Education was found to be a key determining factor.The receipt of income from employment was also found to be a relevant factor to calculate the likelihood of access to the financial system. The study confirms the argument made in earlier issues that it will be necessary to combat the informal economy and improve educational attainment to achieve higher levels of financial inclusion.

In recent issues of ***Mexico Banking Outlook*** we have examined the financial reform approved in late 2013. This issue analyses the progress of the secondary legislation required to complete the reform. **The analysis shows that there is still a long way to go before the reform can be adequately implemented**, despite the publication of a significant number of regulations.

2. Current Situation

2.a Credit to commercial banking in the private sector: March, April and May show the first signs of recovery

2.a.1. Recent performance of total credit and its components

In the first five months of 2014, total credit made available by commercial banks to the private sector showed signs of recovery, after a period of deceleration which began in 2012 and was accentuated in the second half of 2013. In 2012, the average YoY growth of available credit was 9.9% in real terms, which fell to 7.0% in 1H13, and was even lower in 2H13, at 6.5%. The downward trend in growth lasted until February 2014, when credit grew by a real 4.3% in annual terms, one of the lowest rates since December 2010. However, at the close of 1Q14, growth recorded a slight uptick to 4.7%, and this continued in April and May, with rates of 4.9% and 5.6% respectively. These results indicate that after a slow start to the year, the deceleration in credit appears to be coming to an end and there are the first signs of a slight expansion, with growth rates above 4.5% (Chart 1).

The performance of credit taken as a whole has been the result of similar behaviour in the three main segments (consumption, housing and companies), given that these showed a trend to the downside in the second half of 2013 and the beginning of 2014, and subsequently improvements in March, April and May. Consumer credit showed more deceleration than other segments, declining from an average growth rate of 12.5% in the first five months of 2013, to 5.2% in the same period in 2014. Growth of credit to companies over these periods slipped from 5.8% to 4.6%, and credit to housing from 4.6% to 3.8%. In other words, in one year the average growth in business and housing credit fell by 1.2pp and 0.8pp respectively, while consumer credit plunged 7.3pp (Chart 1).

Chart 1
Credit made available by commercial banks to the private sector, total and by segment (real annual growth rate, %)
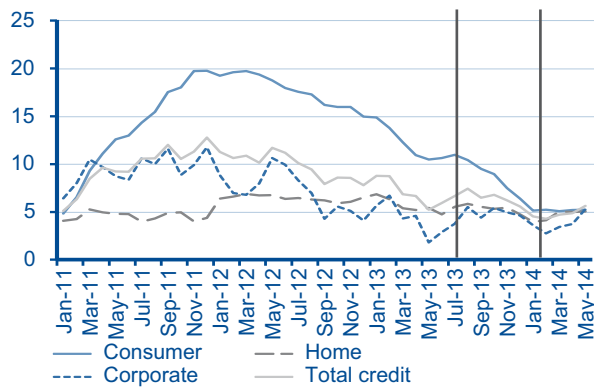
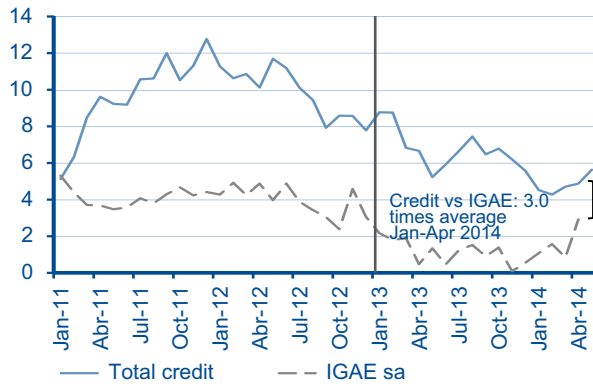Source: BBVA Research with data from Bank of Mexico.

Chart 2
Credit made available by commercial banks to the private sector, contribution to growth by segment, %
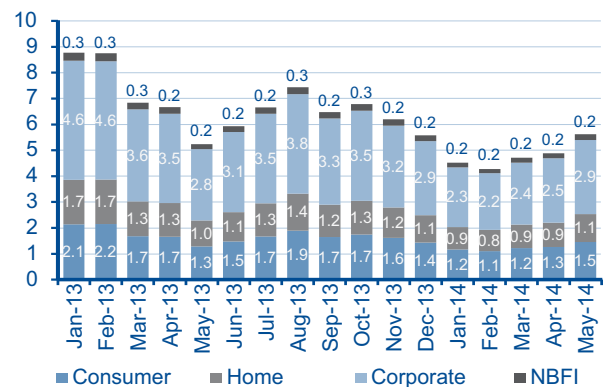
NBFI: Non-banking financial institutions
Source: BBVA Research with data from Bank of Mexico.

In terms of each segment's contribution to total growth, business credit contributed 2.4pp of the average annual growth of 4.8% registered between January and May 2014, due to its dominant share in the portfolio (50% of the total portfolio available to the private sector). This segment is followed by consumer credit, which accounted for 1.2pp; credit to housing, with a 0.9pp contribution, and finally, credit to non-banking financial institutions, with 0.2pp (Chart 2). These figures indicate that the engines for credit growth continue to be credit to companies and to consumers.

Chart 3
Credit made available by commercial banks to the private sector and IGAE (real annual growth, %)

Credit vs IGAE: 3.0 times average Jan-Apr 2014

Total credit — — — IGAE sa

Source: BBVA Research with data from Bank of Mexico and INEGI.

Chart 4
Credit made available by commercial banks to the private sector and GDP (real annual growth, %)

Credit vs GDP: 2.8 times average 2009 -2013

Total credit — — — GDP
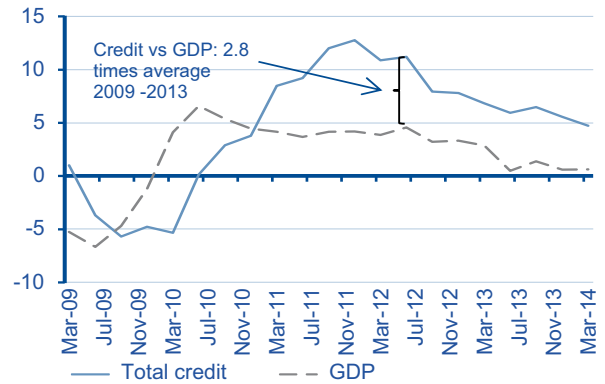
Source: BBVA Research with data from Bank of Mexico and INEGI.

As noted in past issues of Mexico Banking Outlook, the changes in credit are closely linked to economic performance. Proof of this is the high correlation (0.70) between real annual credit growth and the growth of the Aggregate Economic Activity Indicator (IGAE, in its Spanish acronym), as illustrated by Chart 3. In the period covered by the diagram, we see that the rate of total credit growth has been stronger than for economic activity. In the first four months of 2014, credit growth was on average 3.0x higher than the IGAE; while the former grew at an average annual rate of 4.6%, the latter rose by 1.6% (sa). A similar ratio can be seen with GDP (Chart 4) and proves that while credit is growing at lower rates than in earlier periods, its growth remains healthy, since the expansion is in line with its correlation with the economy since 2009.

2.a.2. Credit to companies: improvement linked to the services sector

Between January and May 2014, credit to companies saw average growth of 3.8%, less than the average rate of 4.6% enjoyed in the same period in 2013. The deceleration in this segment was more marked during the early months of the year, sliding from a rate of 4.6% to the end of December 2013, to 3.6% and 2.8% in January and February, respectively. This behaviour was probably related to the weakness of economic activity registered in 2013 and the sharper deceleration in the final months of the year, since the IGAE recorded annual growth rates of 1.4%, 0.1% and 0.6% in October, November and December, respectively (Chart 5). It was also linked to the fall in investment since May 2013 (the Gross Fixed Investment Index posted an average annual rate of -2.8% from May to December 2013), which lasted until 1Q14, reporting an average fall of 2.0%. As shown in Chart 5, investment has a lagged effect on business credit (around three months), so we do not rule out that some of negative effect of the fall in investment may continue to impact the company portfolio.

However, March, April and May saw what appears to be a change in trend in this segment, with growth rates of 3.4%, 3.7% and 5.3% respectively. This improvement has its roots in a credit expansion to companies in the services sector, which makes up 53% of the business portfolio. Between January and May, credit to this sector registered real annual average growth of 9.8%, much higher than the 2.9% it achieved in the same period the year before. Furthermore, in May growth shot up to 15.0%, the highest since December 2011 (Chart 6). This increase has offset lower growth in credit to companies in the manufacturing sector (23% of the portfolio), which slumped from 3.1% in April to -1.4% in May, and the contraction in credit to construction companies (-7.6% in May and -10.0% average YoY), which is still continuing.

As Charts 5 to 7 show, the recent acceleration in business credit is associated with the expansion seen in the April IGAE (+2.9% YoY, sa), in particular the favourable performance of the services sector (+3.1% YoY, sa). Even so, the rates of growth continue to be lower than in previous years; if there is to be greater expansion, there also needs to be a recovery in other economic sectors , such as manufacturing and construction activity.

Chart 5
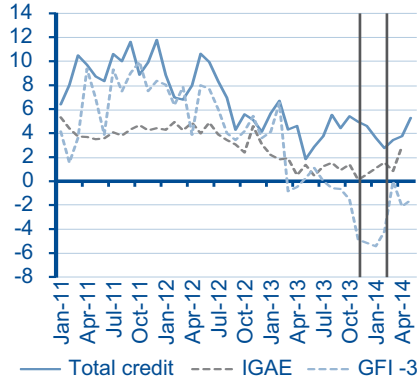**Business credit vs IGAE and Gross Fixed Investment (YoY real growth rate, %)**

Total credit · · · · IGAE – – – GFI -3

Chart 6
Business credit by economic activity of member companies (YoY real growth rate, %)

· · · · Manufacturing
—— Services
· · · · Construction
—— Total credit
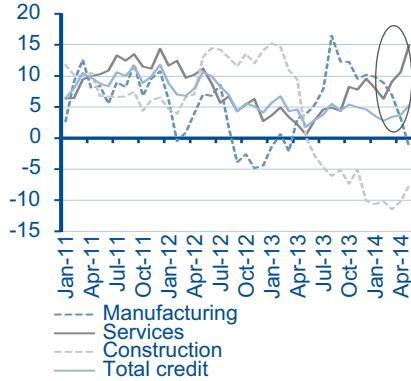
Chart 7
Credit to companies in the services sector and IGAE services (YoY real growth rate, %)


—— Services sector portfolio
· · · · IGAE Services
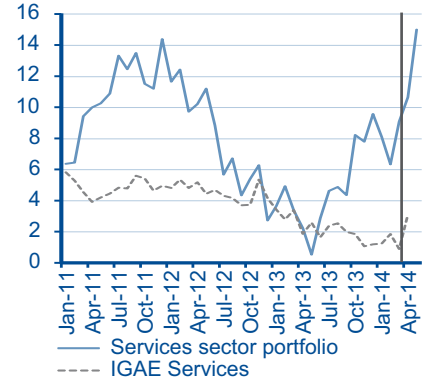
Source: BBVA Research with data from Bank of Mexico and INEGI

2.a.3. Consumer credit: the growth of employment and internal consumption will contribute to greater expansion

During 2013 the rate of growth of consumer credit slowed considerably. Whereas in 2012 average growth was 18.0%, in January 2013 the YoY real growth rate was 15.0% and by December it was down to 6.4%, i.e. less than half. Slower growth lasted into 2014, with the year starting with real annual growth of 5.1%. Nevertheless, this rate remained stable for the next five months, resulting in average growth between January and May 2014 coming in at 5.2%. These figures appear to indicate that the slowdown in consumer credit has come to an end and that growth is going through a period of stabilisation.

Chart 8
Total consumer credit and by segment (YoY real growth rate, %)

—— Total – – CC · · · · DCG —— OCC
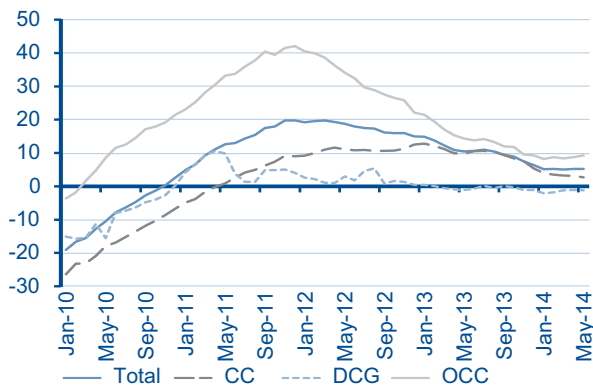
Source: BBVA Research with data from Bank of Mexico

Chart 9
Consumer credit vs ANTAD sales (YoY real growth rate, %) and total number of works registered on the IMSS (growth rate, %)

—— Consumer credit —— ANTAD sales
—— Total IMSS-registered workers (rhs)
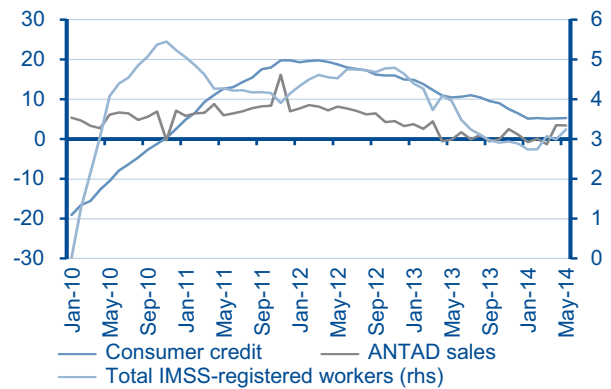
Source: BBVA Research with data from Bank of Mexico, ANTAD and IMSS

This is the result of mixed behaviour on the part of the components. In the first place, the growth of credit card (CC) credit has declined, recording an average rate of 3.3% over the first five months of 2014, compared to a rate of 11.2% during the same period the year before. In the second place, the Other Consumer Credits (OCC) segment – which includes personal and payroll loans–, is starting to recover. After January 2014 posted growth of 8.2%, the lowest since May 2010, by May this had risen to 9.3%. Furthermore, since its growth rate has been consistently higher than that of CC, the OCC portfolio has taken over from the CC portfolio as the principal consumption segment: in May 2014 the former represented 46% of the total, and the latter 44%. Finally, the credit segment for durable consumer goods (DCG) fell by an average of 1.5% between January and May 2014, although the reduction in April and May (-1.1% and -1.2% respectively) was smaller than in the first two months of 2014 (-2.1% and -1.8%) (Chart 8).

Consumer credit performance is related to that of employment and retail sales, variables which affect the portfolio on the demand side. The correlation between the growth in consumer credit and formal employment (total workers registered with the IMSS) is high (0.62), as it is with respect to the growth in ANTAD sales (0.68). This correlation can also be seen if we compare the average growth of these variables over the first five months of 2013 and 2014: in consumer credit this went from 12.5% to 5.2%, while employment fell from 4.1% to 3.0%, while in ANTAD sales, the rate dropped from 2.1% to 1.0% (Chart 9).

We have recently seen a slight recovery in employment creation (from 2.7% in January to 3.2% in May and 3.5% in June) and in consumption (from -0.7% between January and March to 3.4% between April and May), but consumer credit has not shown a comparable lift-off. These figures demonstrate that the upticks seen in the economy have contributed to halting the deceleration in credit growth, but are still not enough to bring about greater expansion.

2.a.4. Credit for housing: growth linked to an improvement in economic conditions and to more competition

As with the other banking credit segments, credit to housing has also decelerated since 2012. That year, average growth stood at real 6.4% YoY, while in 2013 this came in at 5.5%. There was a steep drop at the beginning of 2014 too, since in January and February the growth rate stood at 4.0% and 4.1%, respectively. Likewise, in March, April and May there was an uptick, with figures of 5.1%, 5.0% and 5.1% respectively (Chart 10).

Chart 10

Credit to housing (YoY real growth rate, %) and number of permanent workers registered on the IMSS (YoY growth rate, %)

— Credit to housing
-- Permanent IMSS-registered workers
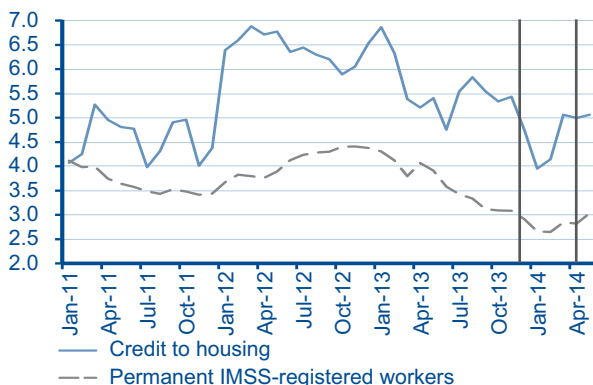
Source: BBVA Research with data from Bank of Mexico and IMSS

Chart 11

Credit to housing (YoY real growth rate, %) and Consumer Confidence Index (YoY real growth rate, %)

— Credit to housing
---- Consumer confidence (rhs)
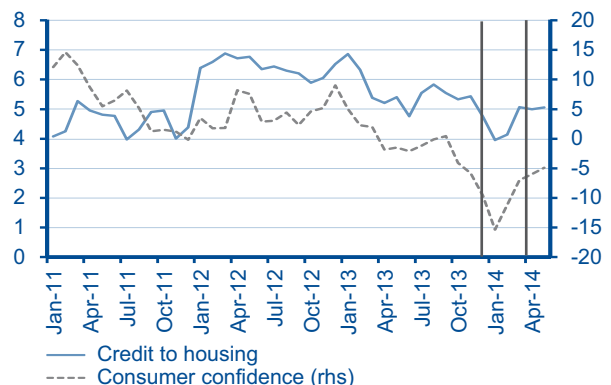
Source: BBVA Research with data from Bank of Mexico and INEGI

Credit for housing responds to both supply and demand factors. On the demand side there is a close relationship with formal and stable employment creation – measured by the number of permanent workers registered with the IMSS– and with consumer confidence. Although these two variables are highly interconnected, they reflect different aspects of household and individual economic conditions. The employment indicator reflects the current situation people are experiencing, in such a way that as more workers enter the formal sector with a stable job, the likelihood of their taking out a loan increases, since they become better credit risks. For its part, consumer confidence also reflects the expectations of individuals, so a rise here means that people are anticipating an improvement in their economic conditions, which could lead to their being more disposed to take out a loan. In April and May there was a slight recovery in employment and a smaller fall in consumer confidence than in January and February. Average employment growth in the first two months of the year was 2.7%, while in the next three it rose to 2.9%. Consumer confidence, meanwhile, recorded an average reduction of 13.3% in January and February and then a smaller fall, of 6.0%, between March and May. This coincides with better performance on the part of the mortgage portfolio over this period (Charts 10 and 11). In other words, the slight deceleration of the mortgage portfolio recently is linked to an improvement, although still incipient, in current economic conditions of both households and their expectations.

On the supply side, the faster growth in the loan portfolio responded to a combination of circumstances. As we will see in section 3 of this report, terms and conditions for mortgages offered by commercial banks have improved in the last few years, with a fall in the interest rates charged and longer borrowing periods. This is the result of a stable macro-financial environment and greater competition between the principal institutions offering this type of loan.

Conclusion

In the first two months of 2014, credit to the private sector was characterised by a continuation of the deceleration we have seen since 2013, followed by a slight improvement from the end of the first quarter. That is, the figures suggest that the credit slowdown may have bottomed out in February and that the figures for March, April and May could be the first signals of a change in trend towards a more favourable course for the remainder of the year. We should emphasise that, to date, credit growth is healthy, with no signs of over-indebtedness, since its historical relationship with economic growth is unchanged. Therefore, greater expansion in the future is dependent, to a large degree, on economic performance, particularly that of the internal market. As the 1Q14 *Mexico Economic Outlook* explains in depth, our expectation for the Mexican economy over the coming quarters is one of acceleration. If this expectation materialises, the recovery in credit should consolidate.

2.b Commercial Bank Deposits: Recent trends

2.b.1 Traditional bank deposits

Traditional deposits comprise demand and term deposits made by the public at commercial banks. In the early months of 2014, growth in traditional deposits by banks speeded up to reach a real annual rate of 9.0% in April and 8.1% in May (Chart 12), the fastest growth rates in deposits since January 2012. This dynamic increase in traditional bank deposits stands out after a period of low growth rates which began in the second half of 2013. The average real annual growth rate in traditional bank deposits in the first five months of 2014 (5.9%) is 1.3pp above the rate for the second half of 2013 (4.6%).

The acceleration in the rate of growth in traditional deposits is closely associated with the performance of the economy, as reflected in its link with the Aggregate Economic Activity Index (IGAE). In April 2014, the annual growth rate in the IGAE picked up to reach 2.9%,[1] up 2.1pp on the preceding month and 2.4pp higher than the rate recorded in April of the prior year (Chart 13). As the economy recovers, more funds will be generated which will be channelled into the banking system via deposits products. Hence, the improvement in the IGAE points to strong performance in traditional deposits in the immediate future, and especially in deposits made by companies.

Chart 12
**Traditional commercial bank deposits
(real annual growth, %)**

Traditional deposits
Traditional deposits, 6-months moving average

Source: BBVA Research based on Bank of Mexico data

Chart 13
Traditional commercial bank deposits (real annual growth, %) and IGAE (growth rate, %)

Traditional deposits   IGAE
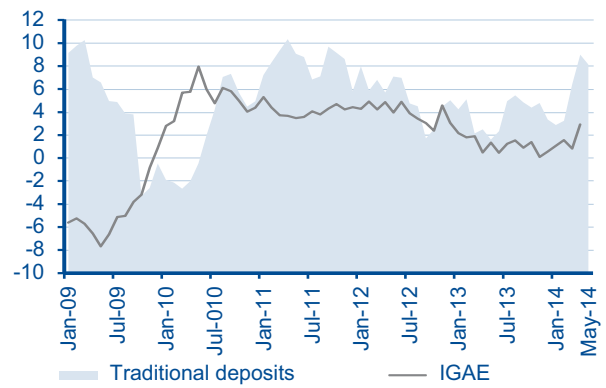
Source: BBVA Research based on Bank of Mexico and INEGI data

Charts 14 and 15 show the annual percentage change in the IGAE together with the real annual growth rate in traditional deposits taken from private firms and individuals. Chart 15 also includes the annual percentage change in the number of formal jobs.[2] As may be observed, the balance of deposits made by private firms in short- and long-term instruments closely follows the evolution of the IGAE over the whole period of the study. The balance of traditional deposits taken from individuals is also affected by fluctuations in employment and in the economy as a whole, but this variable seems to have become somewhat less sensitive to changes in the IGAE since the second half of 2013. In May 2014, traditional deposits by private companies accounted for some 35.9% of traditional deposits, while deposits from individuals accounted for 43.7%.[3]

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[1] Seasonally adjusted series.
[2] Number of workers affiliated to the IMSS.
[3] The rest comprises non-financial public sector institutions and non-bank financial intermediaries.

Chart 14
Traditional commercial bank deposits (companies) (real annual growth, %) and IGAE (growth rate, %)
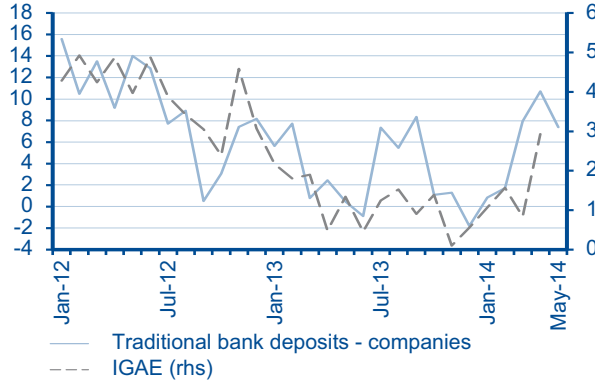
Source: BBVA Research based on Bank of Mexico and INEGI data

Chart 15
Traditional commercial bank deposits (individuals) (real annual growth, %) and IGAE and total number of workers affiliated to the IMSS (growth rate, %)
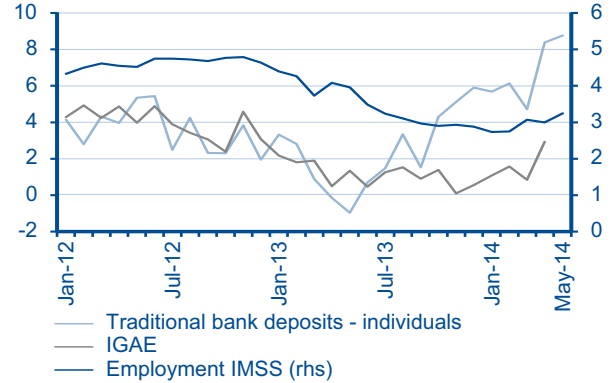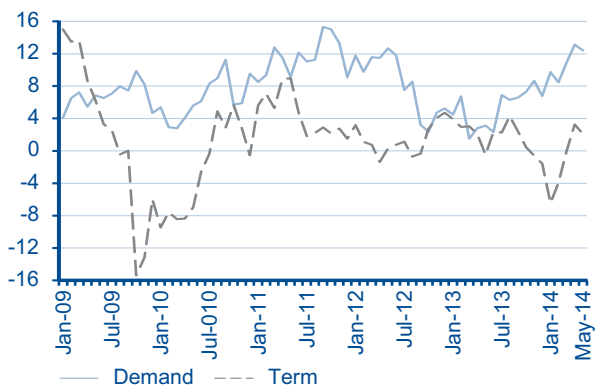

Source: BBVA Research based on Bank of Mexico, INEGI and IMSS data

2.b.2 Traditional commercial bank deposits: performance of components

The recent increase in traditional bank deposits is the result of an acceleration in the real percentage change in demand and term deposits, the two main components. The average real annual growth rate in the balance of demand deposits in the first five months of the year was 10.9%, 7.2pp higher than the rate in the early months of 2013 and 3.9pp up on the average observed in the second half of 2013. In particular, the month of May saw an annual percentage change of 12.4% (Chart 16).

Meanwhile, the real average annual growth rate in the balance of term deposits in the first five months of the year was -1.0%, which is 3.3pp less than the figure for the same months of 2013 and 2.2pp down on the second half of 2013. However, the figures for March, April and May point to a recovery of term deposits in the remaining months of the year. Thus, the percentage real annual change observed in March was 0.0%, in April 3.2% and in May 2.1% (Chart 15). These results are significant given the negative growth rates reported in this indicator since November 2013.

Chart 16
Demand and term deposits (real annual growth, %)

Source: BBVA Research based on Bank of Mexico data

Chart 17
Traditional deposits: contribution of demand and term deposits to growth (percentage points)
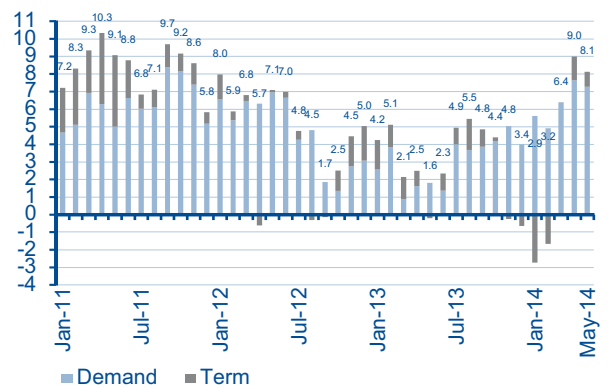
Source: BBVA Research based on Bank of Mexico data

Demand deposits continue to lead the contribution to growth. In the early months of the year, these products contributed an average 6.4pp to growth in traditional deposits, while the average contribution of term deposits was negative in this period (-0.4pp). Despite the fall in deposits observed in late 2013 and early 2014, the figures for March, April and May 2014 were positive and suggest that the recovery will continue for the rest of the year. The slowdown in the balance of term deposits came to a halt in March 2014, and in May they increased sufficiently to make a contribution of 0.9pp to the growth rate of 8.1% in traditional bank deposits (Chart 17), explaining 10.6% of the growth observed. The remaining 89.4% of growth was explained by the increase in the balance of demand deposits (7.3pp of the 8.1% growth rate observed for traditional bank deposits). Significantly, the balance of demand deposits accounted for 60.9% of the total traditional deposits taken by banking organisations in May 2014, and term deposits accounted for the remaining 39.1%.

2.b.3 Debt Mutual Funds

Growth in the balance of securities held by Debt Mutual Funds (SIDs in the Mexican acronym) has slowed since November 2013. In second half of 2013, the balance held by SIDs grew at a real annual rate of 5.6%, 6.1pp below the average observed in the first half of the year. In the first five months of 2014, the SID balance displayed a percentage real annual change of 0.5% and mixed performance in different months. For example, the real annual growth rate in this variable was negative (-0.3%) in January, in contrast to positive growth of 0.8% in February and 1.2% in March. Meanwhile in April the real annual growth rate dipped to 0.0% (Chart 17) and in May it was 0.6%. The balance of securities held by SIDs has not grown at rates so close to zero since December 2011.

Chart 18
**Bank term deposits and Debt Mutual Funds
(real annual growth, %)**
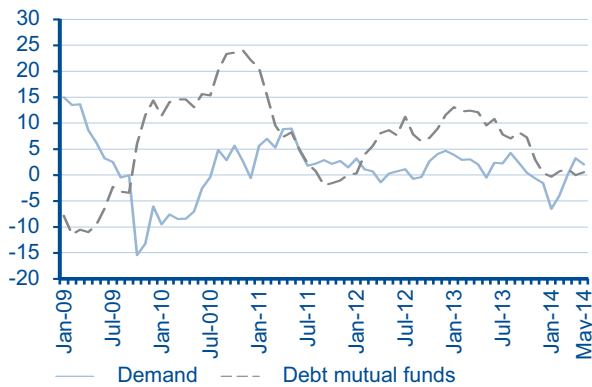
Source: BBVA Research based on Bank of Mexico data

Chart 19
**Total bank deposits (demand and term deposits)
and Debt Mutual Funds (real annual growth, %)**
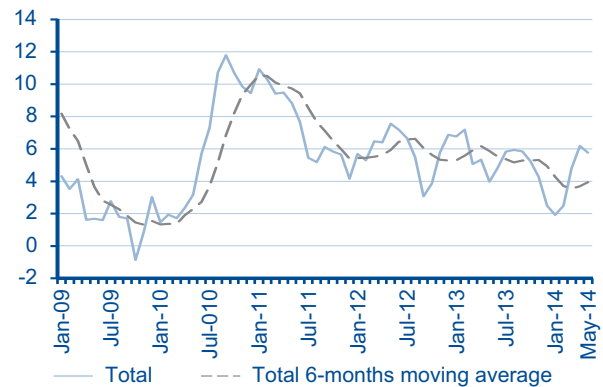
Source: BBVA Research based on Bank of Mexico data

It is possible that the slowdown in the rate of expansion in deposits by SIDs is a reflection of the weak economic performance in 2013 and the increase in long-term interest rates observed in the second half of that year.[4] Also, the increase in term deposits taken by banks may be having a negative effect on deposits set aside through SIDs, as these two variables are substitutes for each other, as explained in previous issues of *Mexico Banking Outlook*.

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[4] For example, the interest on 10-year fixed rate Federal Government Development Bonds (M Bonds) averaged 6.1% in the second half of 2013, 80 basis points above the average observed in the first half of this year (weekly auctions).

2.b.4 Total deposits: sum of traditional deposits (demand and term) taken by SIDs

The total balance of deposits includes the balance of traditional commercial bank deposits and the balance of securities held by SIDs. This variable provides information about the amount of corporate and private assets channelled into the financial system via deposits at commercial banks and investments in SIDs. The evolution in this indicator also provides a general overview of deposits, removing the potential impacts on performance caused by the existence of different deposits instruments (demand and term deposits, and SIDs).

In the first five months of 2014, the average real annual growth rate in total deposits was 4.2%, 0.7pp less than the average observed in the second half of 2013, and 1.4pp below the average for the same months of the prior year. Despite weak performance in December 2013 and January 2014, the balance of total deposits has grown faster since February, rising from a rate of 2.5% in that month to 4.8% in March, 6.2% in April and 5.8% in May (Chart 20). These figures point to a recovery in this variable in the second half of the year, driven mainly by the favourable trend in the economy observed since the second quarter.

Chart 20
**Total deposits and IGAE
(real annual growth, %)**
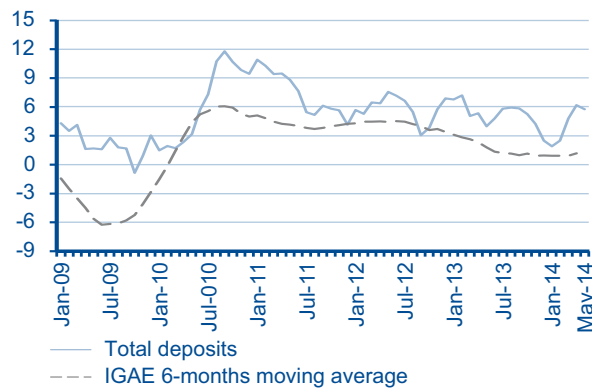
Source: BBVA Research based on Bank of Mexico and INEGI data

Chart 21
**Total deposits and IGAE
(quarterly average real annual growth, %)**
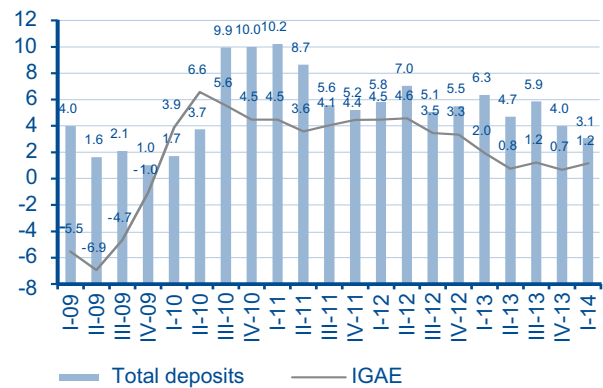
Source: BBVA Research based on Bank of Mexico and INEGI data

Like its components, total deposits is closely linked to the evolution of the economy. Growth in household income and company profits has allowed them to channel more funds into the financial system via demand and term deposits, and/or through SIDs. Chart 21 shows real annual growth in the total balance of deposits taken together with the annual percentage change in the IGAE (both variables expressed as a quarterly average). As may be observed, growth in total deposits closely tracks the IGAE growth trend with a lag of some months. Hence, it is expected that the increased growth in the IGAE observed in April should have positive short-run effects for total deposits and its components. In this regard, the percentage participation of each component in the balance of total deposits needs to be considered to establish their relevance. In May 2014, demand deposits accounted for 42.8% of total deposits, term deposits made up a further 27.5% and deposits by SIDs was 29.7%.

2.b.5 Total deposits: contribution to growth by component

In recent months, the contribution of the components to growth in total deposits has changed significantly compared to prior years. From January to May 2014, demand deposits contributed an average 4.4pp to the growth of total deposits. The average contribution of term deposits was -0.3pp, and that of SIDs was 0.1pp. These results contrast with the highly dynamic performance of the balance of securities held by SIDs in 2013. In that year, the balance held by SIDs was the component which contributed the most to growth in total deposits, averaging 2.5pp, followed by demand deposits (2.2pp) and term deposits (0.5pp).

In particular, demand deposits contributed 5.0pp to growth of 5.8% in total deposits in May 2014, while term deposits contributed 0.6pp and the contribution of the balance held by SIDs was 0.2pp. These figures point to stronger growth in the traditional components of total deposits (demand + term deposits) and a weakening of deposits channelled via SIDs (Chart 23).

Chart 22
**Total deposits and IGAE
(real annual growth, %)**

— Savings, 6-months moving average, 3 months later
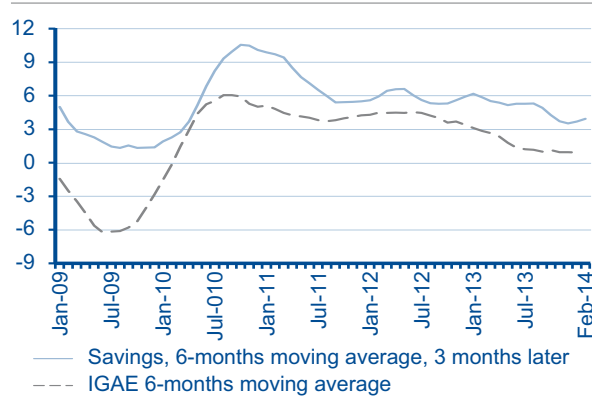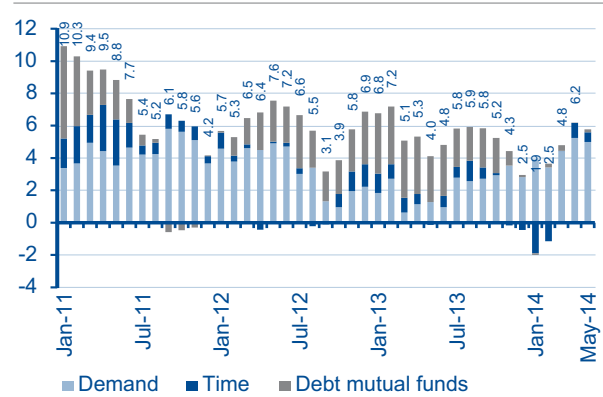--- IGAE 6-months moving average

Source: BBVA Research based on Bank of Mexico and INEGI data

Chart 23
Total deposits: components' contribution to growth (percentage points)

■ Demand ■ Time ■ Debt mutual funds

Source: BBVA Research based on Bank of Mexico data

Evaluation

Growth in traditional deposits by commercial banks (demand + term deposits) picked up in the first five months of 2014, and especially in the month of April, when the real annual percentage change was 9.0%. The strong performance of this indicator in the year to date stands out compared growth rates of around 3.0% in traditional deposits in late 2013 and in the first two months of 2014. We believe that the strength of this variable is a reflection of the improvement in the economy in the second quarter of the year, as suggested by the recent IGAE figures.

Growth in total deposits (demand deposits + term deposits + SIDs) also speeded up in the early months of 2014. After a reported real annual growth rate of 1.9% in January, total deposits grew by 6.2% in April and 5.8% in May, driven mainly by demand deposits. In contrast to other years, deposits by SIDs has weakened, reflecting average real annual growth of 0.5% in the first five months of the year, compared to an average of 11.9% for the same period in 2013.

Initial data for the second quarter of 2014 point to a recovery in total deposits and in its components, as reflected in the recent evolution of the IGAE and other economic indicators. For example, the number of workers affiliated to the IMSS has improved on the strength of 360,159 new jobs in the formal economy created between January and May 2014, compared to 292,859 new jobs in the same period of 2013.

Box 1: Implementation of the Financial Reform. Secondary regulations enacted in the first half of 2014

The Financial Reform enacted on 10 January 2014 was a milestone in recent legislative history, in view both of its successful passage (after several years without any similar legislative events in the Mexican Congress) and of its scale and scope, including 34 amendments and 13 new Bills. The magnitude of the Reform appears even greater when it is considered that it will entail the amendment of hundreds of legal provisions, which in many cases will confer new regulatory powers on the financial authorities, and especially on the National Banking and Securities Commission (CNBV) and the Secretariat of Finance (SHCP) and, to a lesser extent, the National Commission for the Protection and Defence of Users of Financial Services (CONDUSEF).

In the first half of the year, the CNBV issued a raft of rules, including several for which the law required immediate publication,such as those governing Means of Payment Networks and the Technical Report on Money Laundering addressed to Foreign Exchange Operators, Wire Services and unregulated SOFOMES (ENR). The same occurred with the reform of internal audit in Development Banking Institutions, publication of which could not be delayed even though the law establishes no deadline in this regard.

Finally, a number of important, keenly awaited projects remain in the pipeline. This is the case of the framework for the Multiple Banking Institutions Performance Assessment to be prepared by the SHCP (and its impact in terms of restrictions on securities transactions), as well as the rules to be issued by the CNBV in connection with the prudential measures required of Multiple Banking Institutions when the persons exercising control or maintaining significant influence face control, bankruptcy, insolvency and other such proceedings.

11.03.14 - Means of Payment Networks (MPN)
These rules, which were issued jointly by the CNBV and the Bank of Mexico (Banxico), are derived from the reform of the Financial Services Transparency and Regulation Act. They are grouped in three chapters, one dealing with MPNs in general, the second with Card Payment Networks (debit and credit cards) and, finally, one dealing with the powers of the authorities, including the various enforcement measures available and the power to order changes in the internal regulations of networks (known as the "Participation Conditions") when they conflict with the principles enshrined in law.

These provisions are intended to increase transparency in the relevant markets, in terms both of prices, the payment services commissions known in Mexico as cuotas de intercambio, and other considerations, and of internal functioning and integration. A key provision is the obligation imposed on the acquirers, issuers and brand holders to inform interested parties of the contents of the Participation Conditions in credit card-related MPNs, in order to ensure basic certainty on the part of potential participants.

The regulator's concern to foster competition is visible in a number of issues, such as the obligation to allow the entry of new participants and the recurring prohibition of tied sales and contractual conditions requiring the acquisition of any other service. In order to avoid the creation of technological barriers, the authorities have established the requirement to allow free access to point-of-sale terminals and the use of certain technical standards to permit interoperability both within a single card payments network and between different card payment networks.Similarly, the technologies used must be capable of accepting payments made using other credit cards issued under other brands.

The rules reveal an intention to effect structural transformations in networks, expressed in the stress laid on increasing the number of participants and networks in the market while seeking to change the balance of forces within existing networks.[1] This is apparent in the new powers granted to the authorities to set payment services commissions and order the internal functioning of networks in general (Participation Conditions), as well as regulating the contracts entered into by participants in connection with the provision of MPN services.

These provisions provide a consistent script for the development of the market as described in the preceding paragraph, although their sufficiency and success will perhaps only be seen in the medium term.

However, the broad powers conferred on the authorities are also a source of considerable uncertainty for participants in the market, especially in view of the lack of any precedent for such extensive regulatory competences. Moreover, some of these powers are supposed to be exercised jointly by the CNBV and the Bank of Mexico, adding a further level of uncertainty.

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[1] These networks were freely set up via agreements between private parties. They were historically managed by a bank, which played the predominant role in the design and operation of the different systems, as it was credit institutions which pioneered the use of credit and debit cards in Mexico.

26.03.14 - CUB[2]: Changes to the methodologies applicable to provisions for loans

Changes have been made to the methodology applicable to the ranking/classification of retail banks' loan portfolios, specifically with regard to Severity of Loss conditions for loans granted for the management of insolvency estates with the authorisation of the official receiver or trustee in bankruptcy, as well as essential loans required to maintain the ordinary operations of insolvent companies and the liquidity needed during the insolvency process. These conditions apply insofar as the loans described now enjoy privilege (just behind the privilege applicable to employees' claims) as a consequence of the amendments made to the Commercial Insolvencies Act.

No sanctions will be applied in the event of failure to consult Credit Information Companies before granting loans under government programmes set up in cases of emergencies or natural disasters. These loans may also be classified and provided on the basis of the methodologies proposed by the Institutions themselves.

Meanwhile, a new classification methodology has been established for loans granted by development banks under national development and project financing schemes. The institutions may use this methodology when the impossibility of applying general methodologies can be justified. In both cases, institutions are required to use the general methodologies when the CNBV considers they have the pertinent information permitting their use, or when institutions' financial stability is otherwise jeopardised.

04.04.14 - General provisions concerning issuance of the technical report for Foreign Exchange Operators, Wire Services and unregulated SOFOMEs.

Derived from the amendments made to the Credit Organisations and Ancillary Activities Act, the new regulations establish the requirements and procedures for the issuance of the technical report which Foreign Exchange Operators, Wire Services and unregulated SOFOMEs must seek from the CNBV in connection with the fight against terrorist financing and money laundering.

While the obligation to establish measures to prevent crimes of this nature already existed, the new report will provide certification and assure the public and other participants in the financial system with regard to compliance with CNBV-approved minimum standards in this area. The report issued must be renewed every three years.

09.04.14 - Guidelines for the announcement of sanctions imposed by the CNBV

As a part of the market disciplinary regime created by the Financial Reform, a procedure has been established for the public announcement of sanctions applied to the entities subject to supervision by the CNBV. In line with the reforms made to the Act governing the CNBV itself, the new rules require the Commission to publish the sanctions imposed in a special section of its website, indicating the identity of the offender, the sanction imposed, a description of the conduct constituting the infringement, the date of imposition of sanctions, and the status (final or subject to appeal) of the related resolution. The CNBV is also required to indicate whether any corrective measures have been imposed and, if so, their nature.

25.04.14 – Resolution reforming, supplementing and repealing the general Provisions mentioned in article 115 of the Mexican Credit Institutions Act

The provisions concerning the integration of files for different kinds of accounts by Credit Institutions have been amended, as have the requirements for reporting to the authorities in the case of Relevant, Unusual or Suspicious Transactions, cash transactions in US dollars, and transactions carried out by Politically Exposed Persons.

In general terms, the reform corrects the omission of trusts with the same standing as natural and legal persons; includes bankers' drafts in the oversight regime; requires institutions exchanging information with others in the context of anti-money laundering and anti-terrorist finance operations to notify and deliver such information to the authorities also; and creates the "List of Blocked Persons" with whom institutions may not conduct business,[3] in accordance with the provisions of the Financial Reform,

12.05.14 –CUB[2]: Internal Auditors in Development Banks

The internal audit and control functions in Development Bank and Rural Finance Institutions were formerly carried out by the Internal Control Units of the Civil Service Secretariat (SFP in the Mexican acronym).However, this situation has become unsustainable because of the amendments made to the Credit Institutions Act, which reduced the scope of internal audit and control units and the SFP to budgetary issues, fiscal and contractual responsibilities, and administrative responsibility for public servants, among other matters.

Accordingly, the amendments to the CUB consisted of harmonising the treatment of multiple and development

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[2] CUB: General Rules Applicable to Banks issued by the CNBV.
[3] This list will be provided to relevant Institutions by the SHCP via the CNBV.

banking, so that internal audit work will be carried out by a specialist unit linked to the institutions' Audit Committee but which is independent of business units.

30.05.14 - General measures applicable to Stock Exchanges

These measures consist of the issue of a circular directed exclusively to the stock exchanges to replace provisions relating to financial reporting (financial statements and external auditors[4]), which were formerly contained in a circular that was also addressed to securities deposit institutions.

The new regulations also include rules instrumenting the option established in the Securities Market Act allowing stock exchanges to enter into agreement to share and integrate trading systems with other Mexican or foreign exchanges.

Among the key requirements established in this respect, foreign stock exchanges must be located in member states of the OECD, the International Organisation of Securities Commissions, the European Union, or the Integrated Latin American Market (MILA) formed by the Chilean, Colombian and Peruvian stock markets. If the Mexican Stock Exchange were to join MILA, it would create the largest Latin American market, bigger even that Brazil's Bovespa in terms of capitalisation.

05.06.14 - CUCB[5]: Responsibility for placement of securities

The reform of the Securities Market Act requires stock broking firms involved in the placement of securities to verify that prospectuses, brochures, securities certificates and other documents forming part of the structure or announcement of the placement comply with prevailing regulations, and to abide by the pertinent regulations and perform their obligations under the contracts entered into with issuers seeking to place their securities, as well as providing evaluations of said issuers. Stock broking firms will be held liable for any damages arising from failure to comply with these obligations. The current amendments made to the CUCB bring the two legislative systems into line.

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[4] The chapter concerning the stock market investment has been removed, and a reference to the provisions of the Securities Market Act has been included.
[5] CUCB: General Rules Applicable to Stock Broking Firms issued by the CNBV.

3. Special Topics

3.a Household indebtedness in Mexico: two approaches to measurement

The financial burden on Mexican households can be defined, in general terms, as the amount of debt payments in proportion to household income. The role of an indicator of the financial burden is to allow tracking of household's ability to meet debt payments, especially in adverse economic scenarios. However, the construction of an indicator that measures the financial burden correctly is quite a challenge, given the different income measures published in Mexico, which not only differ in their definitions but also in their level of disaggregation (macro and micro data).

Despite the periodic publication of indebtedness indicators by the Bank of Mexico (Banxico), these provide only partial measures of the development of the household financial burden. This article proposes two alternative measurement methodologies. The first estimates the financial burden on the basis of micro data drawn from the biennial National Household Income and Expenditures Survey (ENIGH) for the period 2000-2012. The second is built up from financial information published by the intermediaries operating in the Mexican credit system to allow the estimation of interest, commissions and repayment flows. This methodology is based on the approach outlined in the June 2012 issue of *Mexico Banking Outlook*. The approach described here is an updated version which includes new information sources.

The first part of this article describes the indicators currently available in Mexico to measure the level of household indebtedness, which are published by Banxico. The second part describes the proposed methodologies and analyses the results obtained from each. Finally, the results from both methodologies are compared and differences in the findings are explained.

3.a.1 Indebtedness indicators currently available in Mexico

Banxico has since 2006 reported annually on the financial position of households, defined as the difference between assets included in the M2 aggregate and debt contracted in the financial system (balance of consumer loans + balance of housing loans) expressed as a percentage of GDP[1]. Unlike the financial burden, which is defined as a ratio of cash flow variables (debt repayments in a given period to disposable income in that period), the variables included in the household financial position indicator is made up of balances. What it shows, then, is whether total household debt would be covered by total household assets, reflecting the long-term commitment to debt repayments required of households. Chart 24 shows the trend in this variable since 2006[1A]. As may be observed, households have enjoyed a fairly consistent surplus in their financial position in recent years. The average annual growth rate in this ratio is 2.9% for the period as a whole. At the end of the second half of 2013, the indicator dipped to 26.8%, representing a diminution of 0.6% compared to 2012. According to Banxico (Financial System Report, 2013), this reduction was the result of an increase in household indebtedness given that the level of financial assets held remained at the same level as in the previous year. This stability was due to the moderation in the rate of growth of voluntary household savings (partly explained by the economic slowdown which began in the second half of 2012) and the contraction in mandatory savings in the second half of 2013 (resulting from the fall in the value of government debt securities included in retirement fund portfolios as a consequence of rising medium- and long-term interest rates over the period). Household indebtedness continued to increase meanwhile, although the rate of expansion slowed somewhat due to the moderation of consumer loans.

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[1] The calculation is presented every year in the Bank of Mexico *Report on the Financial System*. For more detail, see www.banxico.org.mx.
[1A] Chart 24 was constructed on the basis of the data contained in Banxico reports on the financial system. The published figures do not always relate to the same quarter. In particular, the figures shown relate to the close of 4Q06, 4Q07, 4Q08, 1Q09, 2Q10, 2Q11, 2Q12, 2Q13.
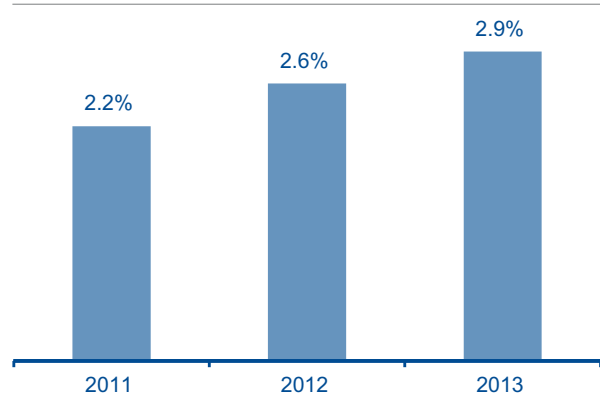
Chart 24
Financial position of Mexican households
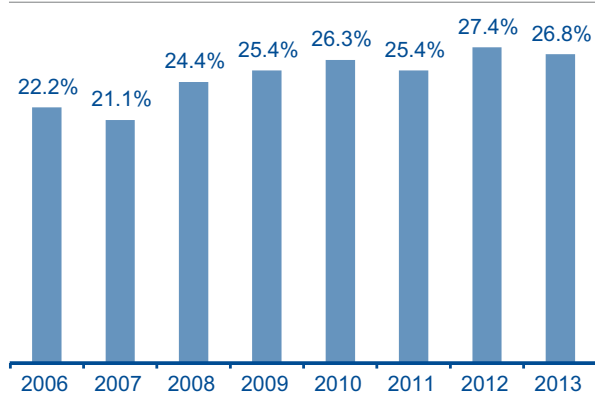
Source: BBVA Research using Bank of Mexico data

Chart 25
Household debt servicing as % of disposable income in Mexico

Source: BBVA Research using Bank of Mexico data

This indicator cannot at present be replicated using publicly available information and, therefore, the value of the ratio can only be calculated annually. The Bank of Mexico publishes monetary aggregates, and consumer and housing loans series on a regular basis. However, data on the components of monetary aggregates does not allow the assets held by households to be identified.

The Bank of Mexico also publishes an annual household debt service indicator. This variable represents payments of interest and bank fees made by households on consumer and mortgage loans as a proportion of their disposable income. According to the Financial System Report published by Banxico in mid 2007, the calculation of interest payments on consumer loans includes credit card debt (estimated based on information on minimum credit card repayments and fees) as well as other consumer loans (estimated on the basis of data on the terms of bank loans granted for the acquisition of motor cars). The calculation of interest payments on mortgage loans includes loans granted by both retail banks and the mortgage agency Infonavit (available information on credit terms is included in the information on retail banks, and Infonavit loan repayment rules are included for the mortgage agency).[2] The same publication mentioned the Mexican National Accounts System, total wage earnings according to the National Occupational, Employment and IMSS Survey as the source of information on disposable income, as well as remittances and personal income tax receipts.[3] However, no further details on the methodology were provided, hampering replication of the calculation. Chart 25 shows estimated annual household debt servicing as a proportion of disposable income for 2011.[4] At the close of the second half of 2013, household debt servicing accounted for 2.9% of disposable income, representing an increase of 0.3 percentage points compared to the previous year and 0.7 percentage points compared to 2011.

As may be observed, the Banxico debt service indicator provides a valuable tool to monitor changes in the trend of household debt repayments. However, its scope is limited as it does not include the scheduled debt repayments made by households, which make up a considerable part of total debt payments. Furthermore, the indicator fails to take account of payments arising from certain kinds of borrowing like payroll loans and personal loans, or of loans granted by unregulated financial intermediaries.[5] The debt service ratio published by Banxico thus accounts for only a part of the financial burden facing Mexican households, and because it does not include scheduled loan repayments it is not fully comparable with the debt service measurements made in other countries. A more complete measure of the financial burden would include the total payments (interest, fees and repayments) due on each of the debts of each household in the country, as well as all lending products offered and all suppliers of credit in the market, whether regulated or unregulated.

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[2] Information on the special, limited-purpose lenders known as *Sociedades Financieras de Objeto Limitado* (SOFOLES in the Mexican acronym) was also taken into account for the years in which they still reported their figures.
[3] It is assumed that the estimate of disposable income employed by Banxico includes all of the country's households, regardless whether they are indebted or not.
[4] Banxico only published calculations for 2002, 2006, 2007, 2011, 2012 and 2013. The figures shown relate to the close of 2Q11, 2Q12, 2Q13.
[5] Unregulated financial intermediaries include multiple purpose lenders or Sociedades Financieras de Objeto Múltiple (Unregulated Entities), savings banks and private lenders.

To throw further light on the degree of financial stress facing Mexican households, then, and to correct some of the weaknesses in the existing indicators, we propose two methodologies to calculate the financial burden on the country's families. The first of these methodologies is based on the information provided in the ENIGH survey of household spending published by the Mexican National Institute of Statistics and Geography (INEGI). Unlike the Banxico indicators, which use aggregate figures, the calculation of the financial burden based on the ENIGH survey reveals the statistical distribution of the financial burden on households, and it therefore provides detailed data reflecting the behaviour of the average Mexican household and the change in the household financial burden in different income deciles. Furthermore, it allows isolation of the trends in the financial burden representing payments on different types of debt contracted by Mexican households. As we shall see below, measurement of the financial burden using this methodology groups payments in respect both of fees and interest, and of loan repayments. It also includes financial charges in respect of loans granted by both regulated and unregulated financial intermediaries. The main drawback is that the ENIGH survey is performed only every two years. Furthermore, the survey data is self-reported by respondents, which means that responses are recorded directly and are not compared against any official records to verify their accuracy.

The second measurement utilises the financial data available on Mexican lenders. This information is utilised to estimate the cash flows generated by interest, fees and repayments, which are compared with different measures of disposable income. The main advantage of this method is its currency, as the data utilised are published quarterly so that the indicator can be constructed frequently. The downside is that it is an aggregate indicator, and it therefore throws no light on the indebtedness of the typical or average household, or on the distribution of debt.

3.a.2 Measurement of indebtedness based on the National Household Income and Expenditures Survey (ENIGH)

Definitions
1) Household income
According to the International Labour Organisation[6], household income "consists of all receipts whether monetary or in kind [...] that are received by the household [...] at annual or more frequent intervals". Hence, it does not include "windfall gains and other such irregular and typically one-time receipts". For example, a lottery win does not form part of household income, because it is a one-off gain and not a periodic transfer. Personal inheritances received from family members are likewise excluded from household income, again because they are one-off gains.

Furthermore, household income does not include receipts which change a family's net worth through the sale or disposal of financial or other assets, or through any increase in its liabilities. For example, the proceeds obtained on the sale of a property would not be considered household income, and nor would receipts on the disbursement of loans by financial institutions or other third parties.

Household income is, then, defined as the income available for current consumption, which is expected to be received by the household on a regular, recurring basis. The three criteria which inflows must meet for inclusion in household income are summarised in Table 1.

Table 1
Criteria defining household income

Regularity	Disposability	Net worth
Receipts must be foreseeable on a regular, recurring basis.	Receipts must be disposable for current consumption.	Receipts may not result in any reduction in the family's net worth.

Source: International Labour Organisation, 17th International Conference of Labour Statisticians, Report II. Household Income and Expenditure Statistics. Chapter 3, Household Income, 2003, Geneva

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[6] *Resolution concerning household income and expenditure statistics* adopted by the Seventeenth International Conference of Labour Statisticians. ILO. 2003.

If direct taxes, fines and other mandatory payments made by the household are deducted from household income, the remainder will be its disposable income. Where information is available on the social security contributions paid by households and the mandatory or semi-mandatory transfers made, these amounts are also deducted from total household income to obtain disposable income. According to the ILO (2003), a transfer is semi-mandatory when it reduces the payee household spending or saving capacity, but the household understands that it has a certain official or moral commitment to pay the amount required. By way of example, we might mention transfers made by the household to support a family member.[8]

2) Household financial and asset-related expenditures

Financial and asset-related expenditures are payments which reduce a household's net worth, and which therefore do not form part of its current spending (INEGI, 2012). Examples would be property purchases, housing repairs, maintenance and extensions, or the acquisition of financial assets like foreign currency, shares or government or private bonds. Bank deposits made by households also form part of their financial and asset-related expenditures because they increase savings.

The payment of a range of liabilities form a major component of households' financial expenditure. These outflows comprise payments made by households on mortgage and consumer loans, including both repayments and fees and interest. Loans may be contracted with banks and non-banking financial institutions, or with other individuals and households.

Available data for Mexico

The ENIGH survey is the main source of micro data on the income and spending of Mexican households. The survey is carried out by INEGI every two years[9], and it is representative of the country as a whole. The ENIGH constructs households' disposable and current income[10] on the basis of four main components based on source (Table 2): namely, 1) income from employment, 2) property income, 3) transfers and 4) estimated rental worth of homes. The ENIGH questionnaire also includes a category which groups all frequently recurring receipts not reported by the respondent under any of the preceding 4 headings. This category is dubbed "other current income". In each case, households report their income net of taxes, payments made to social security institutions (IMES, ISSSTE and similar agencies) and payments made to trade unions. The four income categories established in the ENIGH survey are in line with the construction of income recommended by international conferences on this matter.[11]

Table 2
Components of current income according to ENIGH

Current income	+ Income from employment (monetary receipts and in-kind remuneration)
	• Wage-earners
	• Self-employed
	+ Property income (monetary receipts)
	• Financial assets
	• Tangible assets
	+ Transfers (monetary receipts and transfers of goods and services)
	• From institutions
	• From households
	+ Estimated rental worth of homes (rent attributed to homeowners)

Source: ENIGH 2012. New construction of income and expenditure. Conceptual design and definition of categories and variables.

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[8] Sometimes called adjusted disposable income (when disposable income includes social transfers of goods and services). This distinction is not applied in this report, and the reference to disposable income will include both cash inflows and transfers made in kind.
[9] The first survey of this kind was performed in 1984 and the next in 1989. The survey has been carried out biennially since 1992 with the addition of 2005. The micro data are available on the INEGI website (www.inegi.org.mx), but only for surveys performed since 2000.
[10] INEGI defines current income as monetary receipts and non-monetary transfers meeting the criteria of regularity, disposability and net worth described in Table 1 above, less direct taxes, payments social security institutions (pensions, and other retirement benefits) and payments to trade unions. It is therefore comparable to disposable income, and the two terms are used interchangeably in this report.
[11] Resolution concerning household income and expenditure. Seventeenth International Conference of Labour Statisticians. ILO. 2003.

Income from employment (the first component of current income) includes both the remuneration received by wage-earners and the receipts generated by self-employed workers. In turn, wage-earners' receipts include wages and salaries, overtime payments, commissions, bonuses[12] and other items, as well as the value of any in-kind remuneration received by members of the household. Examples of wage-earners would be the employees of private firms and government employees. Meanwhile, the earnings generated by the self-employed include monetary receipts obtained by self-employed members of the household who own their own unincorporated business (whether formal or informal). Other examples of self-employed workers are the owners of micro-businesses, the owners of market stalls (tianguis) and other traders running small convenience stalls. In addition to monetary receipts, the remuneration of self-employed workers include "self-consumption" and item designed to represent the (retail) value of goods and services produced or sold by the household and set aside for its own consumption. The cash receipts and transfers received by members of the household from other work (i.e. aside from regular jobs and self-employment) are included under the heading "other income from employment".

Property income (the second component of current income) comprises receipts generated by the household from ownership of financial or tangible assets used by other institutional units. This income may be presented as gains or proceeds generated from household members' participation in the capital of cooperatives, companies and/or undertakings operating as companies. It may also be presented as income received by the members of the household from the lease of tangible assets like land, houses, buildings, premises or other real estate, whether in or outside Mexico. It also includes interest earned on the ownership of financial assets (e.g. term deposits and other savings accounts), as well as royalties from intellectual property rights like trademarks, patents and copyright.

Transfers (the third component of current income) represent receipts obtained by the members of a household free of charge by the transferor or provider. The items included under this heading comprise retirement benefits and pensions[13], grants received from government and institutions, monetary donations made by institutions or other households, remittances, benefits under government programmes, and transfers of goods and services from households and institutions.[13A]

Finally, the estimated rental worth of homes (fourth component of current income) represents the housing rents saved by home-owning households, allowing them to apply the savings to the consumption of goods and services. Unlike homeowners, tenants spend a share of their current income on housing on a regular basis. In other words, home-owning households are treated as the proprietors of unincorporated providers of housing services, which are self-consumed by the family. The estimated worth of these services would be equivalent to the market rent which the household would have to pay to live in a house of the same size, quality and location. This estimate is made by respondents themselves, based on their knowledge of the local rental market for houses like theirs.

As mentioned above, the four components described make up disposable or current household income. This income includes both monetary receipts, payments in kind, self-consumption and attributed receipts (as in the case of the estimated worth of homes). Disposable or current income is the measure typically used to estimate households' financial burden[14], because it is assumed to represent the maximum which a household will be able to apply to the consumption of goods and services in a given period without incurring debt or reducing net worth. This assumes that the goods received by a household by way of remuneration for work (payments in kind made by employers, and self-consumption of goods and services produced by households) can easily be sold, or that their existence frees up cash resources which the family can spend on current consumption. In reality, however, such goods and services are not always liquid. It is common, for example, to reject the allocation of the estimated rental worth of homes as income, because it does not change the proprietor's standard of living and in any case it is an unrealised gain.[15]

As a measure, monetary receipts provide a better approximation of households' cash income. This is defined as the fraction of disposable income which households receive in cash, and which can immediately be used to purchase goods and services or, for example, to pay off debts. For the present purposes, we consider that it is better to use

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[12] Bonuses were included for the first time in ENIGH 2008.
[13] Pensions refer to mixed contributions systems and schemes based on contributions made by employers, employees and the government.
[13A] As in the rest of the income items, the worth of in-kind transfers is estimated by respondents based on the market (retail) value of the goods and services received.
[14] For example, the second report of the Seventeenth International Conference of Labour Statisticians (ILO 2003) cites disposable income as the preferred analytic measure because it approximates to the amount available for spending on household consumption in a given accounting period. Meanwhile, Banxico utilises the disposable income reported by households in the ENIGH to estimate families' vulnerability before debt servicing (Bank of Mexico 2009).
[15] For example, the opinions of the experts attending the Seventeenth International Conference of Labour Statisticians (ILO 2003) ranged from a blanket rejection of this variable as a component of income to Its classification as property income.

monetary income, because these receipts can be applied to repay households' financial debts. In the next section, we present an estimation of the financial burden treating monetary income as available income.

The ENIGH survey provides information on debt repayments made by household with respect to three kinds of liability. These are 1) credit cards, 2) mortgage loans and 3) loans received from the employer of a family member and/or from third parties or institutions. These three headings include both repayments and interest and fees. Importantly, the ENIGH questions do not only seek information on financing received from banks and other regulated financial institutions, encouraging households to report payments in respect of debts acquired with unregulated financial intermediaries (like SOFOMES ENR)[16] and with other organisations, people or households, like department stores, friends and families.

Estimation of the financial burden on Mexican households using ENIGH

The financial burden for 2000, 2002, 2004, 2005. 2006, 2008, 2010 and 2012 was calculated based on the data for current income, monetary income and debt payments reported by households in the ENIGH survey[17], in each case as a proportion of disposable income (debt payments / disposable income) and as a proportion of monetary income (debt payments / monetary income). All of the estimates were based on quarterly figures and refer only to households paying some kind of debt (credit card, mortgage and/or other debts with institutions or person)[17A]
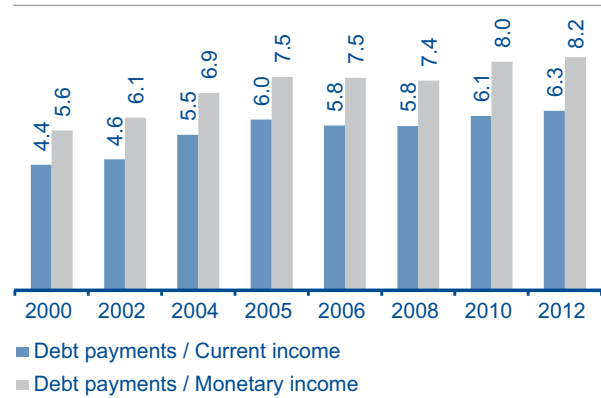
Chart 26
Mean household financial burden, %
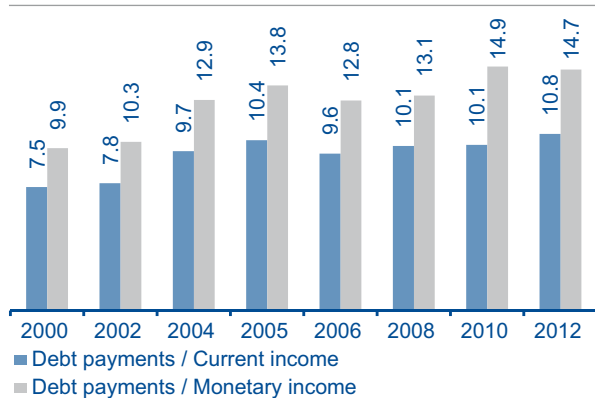
Source: BBVA Research based on ENIGH data.

Chart 27
Median household financial burden, %

Source: BBVA Research based on ENIGH data.

[16] Sociedades Financieras de Objeto Múltiple, Entidades No Reguladas (*Multiple Purpose Financial Companies, Unregulated Entities*).

[17] The estimators obtained on the basis of the ENIGH survey are less representative the smaller the number of observations available. Hence, where the sub-set of households analysed is small, the statistical accuracy of the estimator calculated will be lower. As we shall see below, this consideration becomes important when the overall set of households is broken down into much smaller groups, such as that comprising only households reporting mortgage payments. Though the statistical accuracy of an estimate will improve with the number of observations used to calculate it, trend results are not affected.

[17A] Estimates of the number of households that made debt payments comprise households reporting some kind of loan payment (credit cards, mortgages and other debts with institutions or persons), regardless whether their reported monetary income was positive or equal to zero. Changes in the estimates are smaller if only households reporting positive monetary income are considered. Estimates of the financial burden based on monetary income do not take into accounts with zero monetary income. Estimates of the financial burden based on current income do not take into accounts with zero current income.

The mean household financial burden was 10.8% of current income (payment of debts / current income) in 2012, and 14.7% of monetary income (payment of debts/monetary income). Chart 25 shows the estimation of the mean household financial burden for each year of the ENIGH survey. As may be observed, the financial burden on households has increased gradually over the period analysed, although it dipped slightly in 2006.

If households are ordered on the basis of their financial burden based on current income for 2012, the median ratio (median household) would be 6.3%. Ordering households on the basis of their financial burden based on monetary income for 2012, meanwhile, the median ratio (median household) would be 8.2%. Chart 27 shows the estimation of the median household financial burden for each year over the period of the study.

Comparison of Charts 26 and 27 reflects a peculiar feature of the financial burden on Mexican households, which is that the financial on the median household is lower than the financial burden on the mean household. This means that those households deviating to the right of the mean financial burden are further from it than households deviating to the left. In other words, a graph of the statistical distribution of the financial burden will display a significantly longer tail on the right than on the left. In such cases, the distribution is said to have a rightward bias. The consequence is that the majority of households do not report high levels of indebtedness, but the situation of some households is critical. In 2012 some 72% of households reported a financial burden 14.7% below the mean (based on monetary income), but the remaining 28% reported much higher burdens which in some cases were as far as 714% away from the mean. Charts 28 and 29 are histograms of the household financial burden. Chart 28 orders households based on current income, while Chart 29 does so based on monetary income. The dotted line indicates the median of the distribution (i.e. the median household financial burden), and the solid line represents the mean (i.e. the mean household financial burden). As may be observed, the financial burden on the majority of households is below the mean, whether based on current or monetary income.

Chart 28
Histogram of the household financial burden (base: current income)
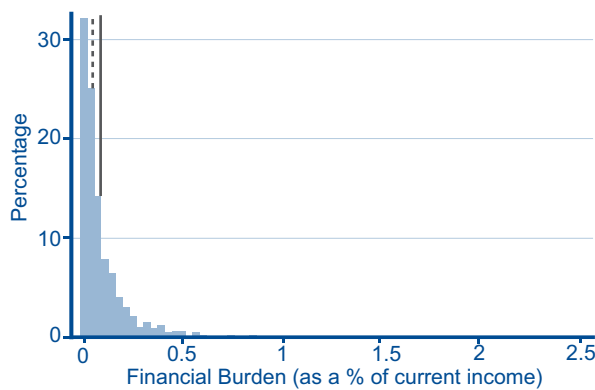
Source: BBVA Research based on ENIGH data for 2012.

Chart 29
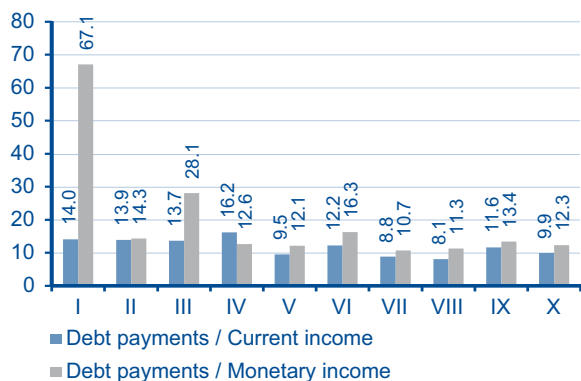**Histogram of the household financial burden (base: monetary income)**
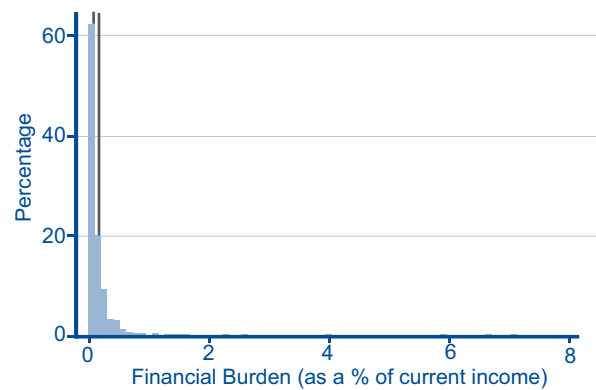
Source: BBVA Research based on ENIGH data for 2012.

The mean financial burden of Mexican households provides a good reflection of a household's capacity to meet debt payments in a given period. The mean financial burden for each income decile and the median financial burden were calculated for 2012 in order see how a household's financial burden is associated with its level of income and identify which households are most vulnerable to financial and economic risks. The results are shown in Charts 30 and 31. The data suggest that household income levels are only loosely associated with the financial burden reported. According to the data from the ENIGH survey, the households with the highest financial burden based on monetary income are those belonging to decile I, in which debt payments account for 67.1% of monetary income. These households have mean quarterly monetary income of MXN 3,214 (constant pesos, base March 2014). In contrast, the households in decile VII report the smallest financial burden on average, with debt payments accounting for 10.7% of monetary income. These households have mean quarterly monetary income of MXN 29,622 (constant pesos, base March 2014).

Table 3 shows mean quarterly monetary income per income decile. It also presents the mean quarterly monetary income of households which reported debt payments and the percentage represented by such households out of the total in each decile. The correlation between mean monetary income and the percentage of households paying back debts in each decile is positive on 94.6%. This result is hardly surprising and suggests that levels of financial penetration are lower among lower-income households. Five out of every one hundred households in the first decile report debt payments, but this proportion rises to 48 out of every one hundred in the last decile. Let us recall here that households reporting debt payments comprise all those reporting payments in respect of one or more of the following: 1) credit card debt, 2) mortgage loans and 3) other debts with institutions or individuals.
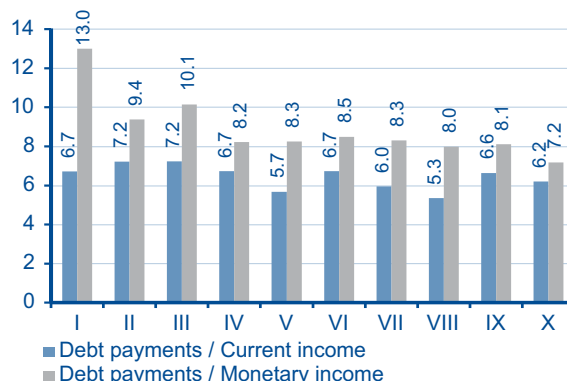
Chart 30
Mean household financial burden by income deciles, %

Source: BBVA Research based on ENIGH data for 2012.

Chart 31
Median household financial burden by income deciles, %

Source: BBVA Research based on ENIGH data for 2012.

Table 3
Mean monetary income per decile (constant pesos, base March 2014)

Decile (base monetary income)	Mean monetary income	Mean monetary income of households reporting debt payments	Percentage of households reporting debt payments
I	3,401	3,214	4.7%
II	7,694	7,774	7.1%
III	11,167	11,220	11.6%
IV	14,803	15,006	10.3%
V	18,810	18,862	14.0%
VI	23,342	23,298	15.5%
VII	29,379	29,622	20.4%
VIII	38,094	38,077	28.7%
IX	53,568	54,298	36.1%
X	121,814	134,624	48.2%

Source: BBVA Research based on ENIGH data for 2012.

In addition to grouping households by income decile, they were also classified in terms of the debt payments made: 1) households reporting credit card payments; 2) households reporting mortgage payments; and 3) households reporting payments of other debts with institutions and individuals. This classification is important because it reveals the extent to which different types of indebtedness contribute to the financial burden on households. The ENIGH 2012 data indicates that credit cards represent a mean 12.1% of monetary income in households reporting debts of this kind. This figure varies between 6.8% and 56.8% depending on the decile,[18] but there is no clear correlation between

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[18] The classification by deciles includes only households reporting payments of credit card debt.

this ratio and the level of a household's income (Chart 32). Something similar occurs with debt-related payments to institutions or individuals, which account for a mean 13.9% of monetary income in households reporting debt of this kind. This figure varies between 8.7% and 67.6% depending on the decile, but once again there is no clear correlation between this ratio and the level of a household's income (Chart 34).

The trajectory of the financial burden represented by mortgage payments shows that the lower income deciles apply a larger share of their monetary income to the settlement of these loans than higher-income households (Chart 33). Strikingly, none of the households in deciles I and II report mortgage payments, while just 2.3% of the total households in decile X reported mortgage debts.

Charts 32, 33 and 34 show the mean financial burden represented by payments of each kind of debt (credit card debt, mortgage loans and other debts with institutions and individuals) by decile and for the total number of households in the country, based on monetary income. These calculations include only households reporting each debt category. Charts 32, 33 and 34 also illustrate the total mean financial burden reported by these households (i.e. the burden in respect of all debt payments made). The dotted line shows the percentage of households paying the type of debt in question in each decile. For example, the dotted line in Chart 32 indicates that 41.8% of households in the tenth decile make credit card payments. According to the ENIGH survey, the percentage of households reporting payments of this kind rises in line with increases in household income. Thus, one out of every one hundred households in the first decile makes credit card payments, compared to 42 out of every hundred (actually 41.8%) in the last decile. The percentage of households paying other debts to institutions and individuals reflects a similar trend. Four out of every one hundred households in the first decile report payments of this kind, and the proportion rises to 17 out of every 100 in the eighth decile. The trend is reversed in deciles IX and X, suggesting that high-income households make less intensive use of this source of financing (Chart 34).

The penetration of mortgage loans is lower than that of credit card debt and loans from other institutions and individuals in all income deciles. In fact, just 0.04% of decile III households make mortgage payments, rising to 2.3% in the last decile. The ratio increases with the level of household income except in decile VII, where it falls (Chart 33). Chart 35 shows the number of households reporting each type of payments as percentage of the number of households in each decile, and as a percentage of total Mexican households ("Total" in the horizontal axis). It is important to bear in mind that a single household may report different kinds of payments.

Chart 32
Credit card payments / Monetary income (mean ratio), %
Households reporting credit card payments
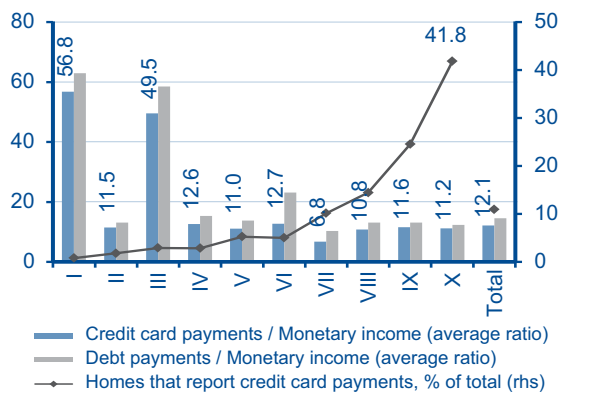
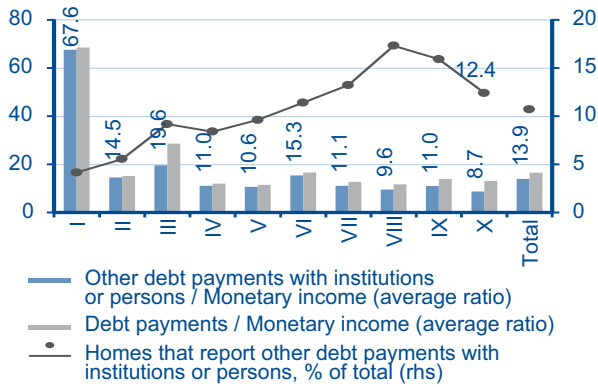

Source: BBVA Research based on ENIGH data for 2012.

Chart 33
Mortgage payments / Monetary income (mean ratio), %
Households reporting mortgage payments
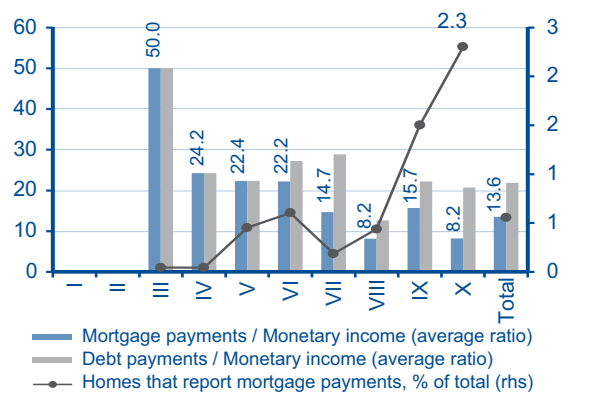
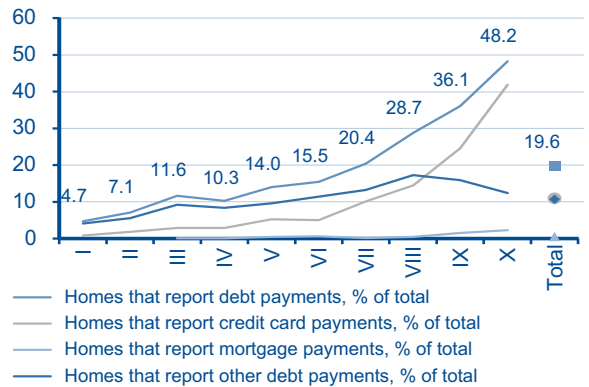Source: BBVA Research based on ENIGH data for 2012.

Chart 34

Payment of other debts with institutions and individuals / Monetary income (mean ratio) Households reporting payments in respect of other debts with individuals or institutions, %

- Other debt payments with institutions or persons / Monetary income (average ratio)
- Debt payments / Monetary income (average ratio)
- Homes that report other debt payments with institutions or persons, % of total (rhs)

Source: BBVA Research based on ENIGH data for 2012.

Chart 35

Households reporting debt payments, % of total By type of debt

- Homes that report debt payments, % of total
- Homes that report credit card payments, % of total
- Homes that report mortgage payments, % of total
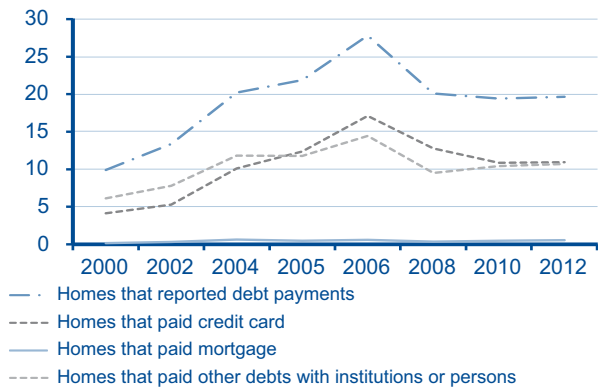- Homes that report other debt payments, % of total

Source: BBVA Research based on ENIGH data for 2012.

Based on the ENIGH data, credit penetration in Mexico in terms of the percentage of households reporting debt payments has not recovered the levels existing before the crisis of 2008. In the year 2000, some 9.9% of Mexican households paid credit card debt, mortgage loans and/or other debts with institutions and individuals, and subsequent rounds of the ENIGH survey point to a gradual increase in the percentage to 27.8% in 2006. Two years later, in 2008, the figure had dropped by 7.7 percentage points to 20.1%, and since then it has not changed significantly. The same trend is observable if each debt class (credit card debt, mortgage loans and other debts with institutions and individuals) is analysed in isolation. Chart 36 shows the evolution of credit penetration in Mexican households in the period analysed, reflecting the number of households paying some kind of debt as a percentage of the country's total households, and the percentage of households paying each kind of debt. Let us again recall here that debt classes are not exclusive, and that a household may report different debts of different kinds. Table 4 presents the specific calculations for each year.

Chart 36

Households reporting debt payments as a % of total Mexican households

- Homes that reported debt payments
- Homes that paid credit card
- Homes that paid mortgage
- Homes that paid other debts with institutions or persons

Source: BBVA Research based on ENIGH data.

Table 4

Households reporting debt payments as a % of total Mexican households

Year	Total house-holds	House-holds paying any debt (%)	House-holds paying credit cards (%)	House-holds paying a mortgage (%)	House-holds paying other debts* (%)
2000	23,667,479	9.9	4.1	0.2	6.1
2002	24,531,631	13.4	5.3	0.3	7.8
2004	25,561,447	20.2	10.1	0.6	11.8
2005	25,710,321	21.9	12.4	0.5	11.8
2006	27,445,356	27.8	17.1	0.6	14.4
2008	27,874,625	20.1	12.8	0.3	9.5
2010	29,556,772	19.4	10.9	0.5	10.4
2012	31,559,379	19.6	11.0	0.6	10.7

* Debts institutions and individuals
Source: BBVA Research based on ENIGH data.

Chart 37 shows the evolution of the mean financial burden represented by the different type of debt contracted by households over the study period. The calculations only take into account households reporting each type of debt (or at least one type of debt in the case of the "Debt payments/Monetary income" category). As may be observed, the financial burden represented by the different debt payments has increased slightly compared to 2000. The financial burden represented by mortgage payments displays the greatest variance, rising from a minimum of 11.2% in 2000 to a peak of 25.4% in 2008. This pattern is probably due to changes in the average amount of loans granted and/ or changes in the average repayment periods for mortgage loans. In 2012, a household with a credit card paid an average MXN8,627 per quarter on this source of financing (constant pesos, base March 2014), while a household with a mortgage loan paid an average MXN7,727 per quarter and household with other debts with institutions and individuals paid an average MXN3,904. Taking all households that paid debt of some kind together, the mean quarterly payment is MXN7,155. Chart 38 shows the mean amounts earmarked by Mexican households for the payment of debts in each year of the study period (constant pesos, base March 2014). Table 5 shows the calculations for each year.

Chart 37
Debt payments as a % of monetary income
Mean % per household

- - - - Credit card / Monetary income
— · — Mortgage / Monetary income
— — Debts with institutions or persons / Monetary income
——— Debt payments / Monetary income
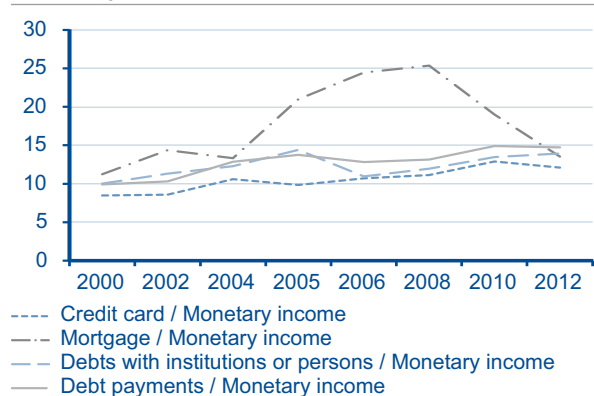
Source: BBVA Research based on ENIGH data.

Chart 38
Mean amount of payments
Constant payments, base March 2014

- - - - Credit card   — · — Mortgage
— — Debts with institutions or persons
——— Debt payments

Source: BBVA Research based on ENIGH data.

Table 5
Mean debt payments. Indebted households. Constant pesos, base March 2014

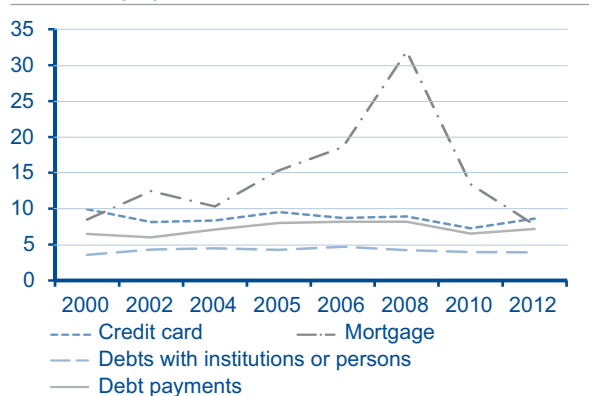| Year	Credit Card	Mortgage	Other debts with institutions and individuals	Total debt payments
2000	9,923	8,497	3,570	6,490
2002	8,120	12,443	4,284	5,978
2004	8,341	10,325	4,470	7,100
2005	9,531	15,320	4,272	8,001
2006	8,678	18,600	4,676	8,182
2008	8,928	31,941	4,204	8,194
2010	7,279	13,408	3,937	6,505
2012	8,627	7,727	3,904	7,155

Source: BBVA Research based on ENIGH data.

The ENIGH 2012 data show a clear concentration of debt in higher-income households, in terms both of the number of indebted households and of the amount of debt payment earmarks. Deciles IX and X (based on monetary income) include 60.6% of households reporting credit payments, accounting for 85.1% of the total payments made. In contrast, deciles I to V represent only 12.4% of the households reporting this type of debt, and their share of total payments is even smaller on 4.9%. Households in deciles IX and X reporting mortgage payments represent some 68.3% of the total, and their payments account for an 82.2% share of the total for this type of debt. The figures for deciles I to V are

9.7% and 5.2% respectively. Other debts with institutions and individuals are more evenly distributed, however. Deciles IX and X account for 26.5% of the households paying debts of this kind, while deciles I to V represent 34.4%. In terms of the total payments made, the share of the top two deciles is 49.0% and that of the bottom five is 15.8%. Table 6 shows these calculations for each decile. The bottom rank of the table shows the total number Mexican households paying each type of debt and the total payments made. This information is supplemented by the figure for mean monetary income received by the households paying each type of debt in each decile (last two columns).

Table 6
Indebted households, 2012

| Decile	% share of deciles in the total number of households paying each type of debt			% share of each decile in total debt payments			Mean monetary income (constant pesos, base March 2014)		
	Credit Card	Mort-gage	Other debts with institu-tions and individuals	Credit Card	Mort-gage	Other debts with institu-tions and individuals	Households making credit card payments	House-holds making mortgage payments	Households paying other debts with institutions and individuals
I	0.7	0.0	3.9	1.3	0.0	1.9	1,992	-	3,309
II	1.7	0.0	5.3	0.2	0.0	1.5	8,014	-	7,740
III	2.6	0.8	8.3	1.7	0.6	4.6	11,439	11,111	11,144
IV	2.6	0.8	7.9	0.6	0.3	3.3	15,589	13,536	14,868
V	4.8	8.1	9.0	1.2	4.3	4.5	18,914	19,704	18,806
VI	4.6	10.8	10.6	1.6	7.2	9.9	23,630	23,043	23,265
VII	9.2	3.3	12.4	2.1	1.9	10.4	29,546	30,462	29,696
VIII	13.2	7.9	16.2	6.2	3.6	15.0	38,129	42,504	38,172
IX	22.4	27.0	14.9	16.4	31.5	23.1	54,534	56,695	54,248
X	38.1	41.3	11.6	68.7	50.6	25.9	137,054	136,039	129,897
Base*	3,457,268	175,764	3,376,089	29,825	1,358	13,179			

* In columns 2 to 4 the base indicates the total number of households reporting each type of debt. In columns 5 to 7, the base indicates the total amount of payments made in respect of each type of debt in constant pesos (base March 2014). The figures shown in columns 8 to 10 are conditional upon households' using each type of financing. For example, in decile I, the mean monetary income of households paying credit card debts is MXN1,992 constant pesos (base March 2014)
Source: BBVA Research based on ENIGH data for 2012.

To complete this study of the financial burden on households, the trajectory of mean quarterly monetary expenditure by households making debt-related payments was analysed in order to provide a broader picture of the financial vulnerability of Mexican households. For the purposes of the ENIGH survey, households' monetary expenditure includes regular spending on consumer goods and services, regardless whether or not payment was actually made in the reference period. The data show that indebted households in the lower income deciles (I to V) spend, on average, more than they receive in any given quarter. The monetary expenditure of households in decile I, for example, is 5.4x their mean monetary income. In decile V, this figure is 1.1. The trend is the opposite in the higher deciles, where the average household receives monetary income above quarterly monetary expenditure. The monetary expenditure of households in decile VI, for example, is 0.9x their mean monetary income, falling to 0.8x in decile X. Despite the inclusion of purchases that will not necessarily be paid in the period in question (such as purchases made on credit or using credit cards) in monetary expenditure, its size compared to households' monetary income provides information on spending and saving habits. The figures suggest that lower-income households suffer greater financial stress, insofar as most of their monetary income is earmarked for current consumption, reducing their present and future saving capacity, and therefore their ability to withstand adverse income shocks. Chart 39 shows mean monetary expenditure per decile as a percentage of mean monetary income for 2012. The calculation includes only households which reported some kind of debt payment (credit card, mortgage and/or other debts with institutions and individuals). The figure also shows the mean ratio for all households making debt payments, regardless of their level of income ("Total" in the horizontal axis).

Chart 39
Monetary expenditure / Monetary income
Mean ratio per household, %
Households reporting debt payments, 2012
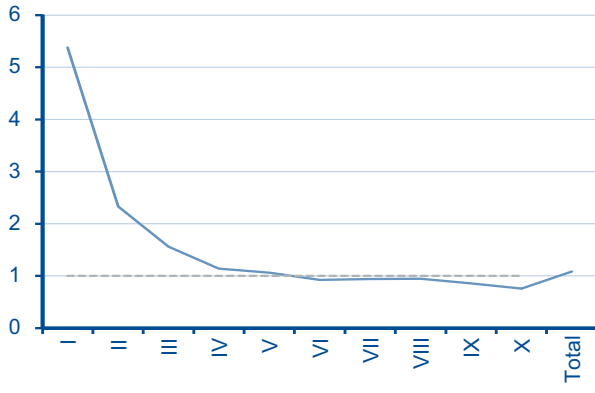
Source: BBVA Research based on ENIGH data.

Chart 40
Total debt payments and mean debt payments per household. Households reporting debt payments. Constant pesos, base March 2014

Other debts with institutions or persons - Total
Mortgage - Total
Credit card - Total
Amount of debt payments - Average by home (rhs)
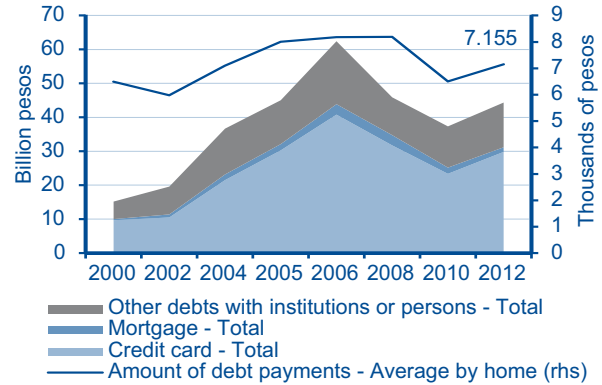
Source: BBVA Research based on ENIGH data.

Finally, the total amount of debt payments made by households in the period of the study was estimated. According to the ENIGH survey, payments totalled MXN44,362mn in 2012 (in real terms, base March 2014). However, the mean debt payments per household increased by 10% in 2012 compared to 2010, rising from MXN6,506 to MXN7,155 (constant pesos, base March 2014), displaying positive, double-digit growth since 2006. Credit cards were the main component of total debt payments, totalling MXN29,825mn in 2012 (67.2% of the total). This variable was followed by other debts with institutions and individuals, which totalled MXN13,179mn (29.7% of the total) and then by mortgage payments on MXN1,358m (3.1%). Chart 40 shows these calculations for the period 2000-2012. The figures described here represent quarterly flows, and they therefore capture the pressure of debts acquired on household incomes in the short run. The ENIGH questionnaire is not designed to obtain information on household debt balances. The flows reflected in the 20121 ENIGH survey represented 0.27% of GDP.

International comparison

A number of countries currently conduct household surveys in order to learn more about consumption, spending and debt patterns. Naturally, the sample design of each such exercise may differ between economies, and the contents of questionnaires will not necessarily be the same. These factors determine the extent to which estimates of the financial burden are comparable between countries. For example, the European Central Bank has pursued harmonisation through its *Eurosytem Household Finance and Consumption Survey* (HFCS), which collects data at the household level in the Eurozone countries. The first round of this survey was carried out in late 2010 and early 2011 (depending on the country), and the information collected referred to the previous year in the majority of cases. Chart 41 shows the estimated household financial burden as a percentage of disposable income for all of the countries taking part in the project, and it also includes the calculation for Mexico based on ENIGH data.[20] According to the HFCS catalogue of variables, the debt payments taken into account in the calculation of the financial burden in the participating countries comprise mortgage payments and payments on other loans, such as car loans, other consumer loans, loans from family, friends and employers and other credit. This measurement includes financing obtained from both the formal and the informal sector, and we therefore consider it comparable to that performed in Mexico.

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[20] In the Mexican case, the median financial burden is shown by household based on current income (or disposable income), the most nearly comparable measure to that used in the HFSF.

Chart 41
Household debt payments in proportion to disposable income (median), %
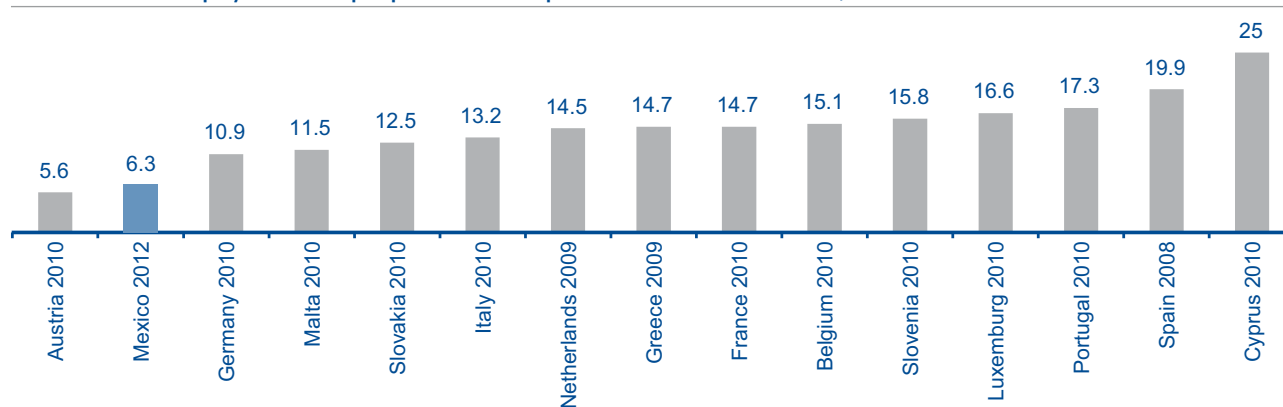
Source: BBVA Research using European Central Bank data (Eurozone countries) and ENIGH 2012 (Mexico).

As mentioned at the beginning of this chapter, one of the main advantages of using survey data is that it provides sufficient information to establish the statistical distribution of the financial burden on households, throwing light on the behaviour of the average household. Surveys also provide information on the financial burden represented by the different kinds of debt and allow identification of the households segments which are most vulnerable to financial and economic risks. In contrast, the main problem with using surveys as an information source is that most are conducted only once every one, two or even three years, preventing the construction of series showing multiple observations over time (unlike estimates based on aggregated monthly or quarterly series). Furthermore, the information provided by surveys is self-reported, which means that the data provided by respondents is not verified but is simply assumed to be accurate. The literature on this matter documents that respondents are especially sensitive to questions about income (or sales in the case of company surveys) and debt, and it is therefore likely that estimates involving variables of this kind will be skewed (downward bias).

The next section describes an alternative measure constructed on the basis of the regular information reported to the financial authorities by regulated (and some unregulated) financial intermediaries. This information is used to estimate the aggregate debt service paid by households. The main advantage of this procedure is that it provides a more appropriate measure of indebtedness than survey data. Being reported to the authorities, moreover, the data will be previously validated.

3.a.3 Estimation of the financial burden based on data from intermediaries

Definition and considerations
As explained in the June 2012 issue of **Mexico Banking Outlook**, family debt servicing may be defined as the payments made by them on a regular basis in respect of interest, fees (annual, opening and loan administration fees) and repayments of the consumer and home loans they contract.[21] Debt service implies a financial burden for families, which must set aside a part of their disposable income to meet payments. Consequently, the financial burden is defined as the size of debt service payments in proportion to some relevant measure of household income.

The information on regulated financial intermediaries published by the Mexican National Banking and Securities Commission (CNBV), Banxico and other institutions allows the estimation of total debt service payments. The definitions and information sources utilised to determine payment classes are provided in the appendix at end of this article. Panel A of the appendix shows the definitions for consumer loans, and panel B the components and entities concerned in home loans. As may be observed in Panel A, for example, data on interest and fee income published by the CNBV was used for payments in respect of interest and fees on consumer loans granted by retail banks (RB).

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[21] In principle, debt service should also include payments of insurance premiums related with the loans contracted. However, no data currently exists that would allow the estimation of premiums, and they are not therefore included in our analysis.

The main advantage of the proposed indicator is that it is constructed on the basis of information published monthly or quarterly, which means it is much more up to date than the indicator obtained using ENIGH survey data. An additional advantage is that it can be broken down by payment item (interest, fees and repayments), by the type of intermediary granting the loan (bank or non-bank) and by credit segment (consumer and home loans).

The main drawback is that it is an aggregate indicator. This means it cannot be used to estimate the indebtedness of the average or typical household, which can be done using the ENIGH-based indicator. A second disadvantage is that not all of the information that would be wished to construct the indicator on the most appropriate basis is available, especially in the case of loans granted by non-bank lenders. For this reason, certain assumptions are utilised in some cases, as enumerated in the appendix and explained briefly below.

## Evolution of family borrowing

Debt service is partly estimated based on the balances of consumer and home loans, and the behaviour of these variables is therefore closely linked. In this light, a brief analysis of the evolution of borrowing is needed.

Consumer loans

At the close of 2013, the balance of total consumer loans was MXN926bn (Chart 42). Most of this lending (77%) was granted by banks and the rest (23%) by non-bank intermediaries.[22] Significant growth may be observed both in absolute terms and relative to GDP. At the close of 2000, the total balance was just over MXN140bn (constant pesos, March 2014), equal to 1.2% of GDP (Chart 43), but by the end of 2013 it had risen to 5.5% of GDP (growth of 4.2 percentage points in bank lending and 1.3 percentage points in non-bank lending). Between 2000 and 2013, then, the total balance of consumer loans grew by 6.6x in real terms, equal to 4.3% of GDP.
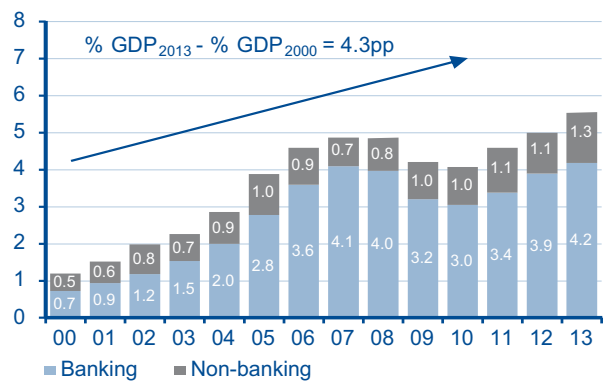
Chart 42

Consumer loans by type of intermediary, balances in bns of pesos (constant, March 2014)
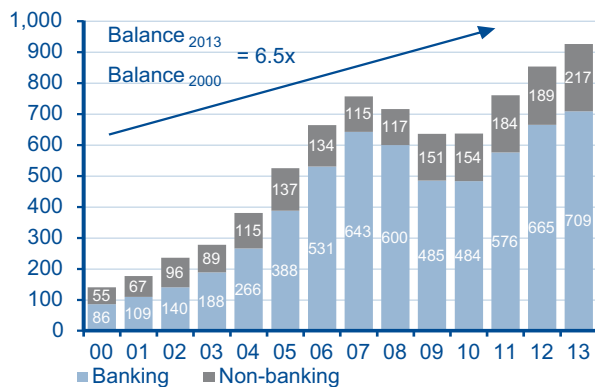
Source: BBVA Research based on Banxico, CNBV, BMV and INEGI data.
Year-end balances.

Chart 43

Consumer loans by type of intermediary, balances as a percentage of GDP (%)

Source: BBVA Research based on Banxico, CNBV, BMV and INEGI data.
Year-end balances.

This growth displays different patterns over the period. The period 2000-2007 saw significant expansion with average real annual growth of 27-5% (Chart 46). This was mainly due to bank lending, the balance of which grew at an average annual rate of 33.6%, compared to 12.7% for non-bank lending. This expansion was interrupted in 2008-2009, however, when bank lending contracted by an average of 12.9%, in contrast to 15.8% growth in non-bank lending. Total consumer lending has recovered since 2010, although growth rates remain very moderate at an average of 10.2% per annum for consumer loans granted by banks and 9.7% for non-bank consumer loans. In 2013 growth in non-bank consumer loans was in fact faster than bank lending (real annual growth rate of 15.0% vs 7.0%).

[22] Non-bank lending comprises the credit card balances of department stores (8.9% of the total balance), lending by regulated non-bank financial intermediaries (7.5%), unregulated SOFOMES (5.7%), and the balance of lending by FONACOT (1.3%).
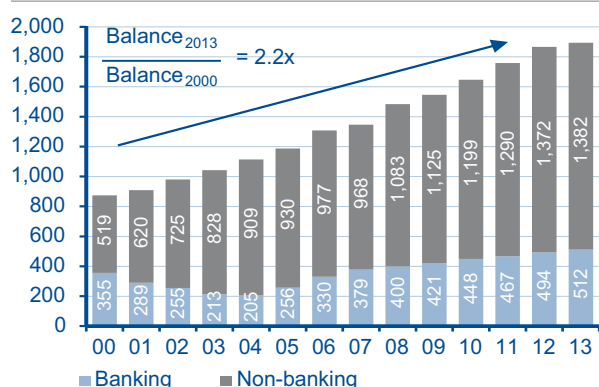
Home loans

At the close of 21013, the balance of home loans was MXN1.9trn (Chart 44). In contrast to consumer loans, most home loans are granted by the non-bank sector (73.0%), which is hardly surprising given that Mexico's main lender is INFO-NAVIT (49.2% of the total balance). Banks account for 27.0% of the balance, while FOVISSTE, Unregulated Non-Bank Financial Intermediaries (IFNB in the Mexican acronym) and unregulated SOFOMES together make up 10.3% of the total balance. This analysis also includes the balance of mortgages are packaged in the form of tradable mortgage-backed securities (MBS), which represent 13.5% of the total.[23]

In the year 2000 the balance of home loans was a little more than MXN870bn, which has since grown by some 2.2x (real increase to the close of 2013). This represents an increase of 3.8 percentage points in terms of GDP, from 7.4% to 11.1% (Chart 45).
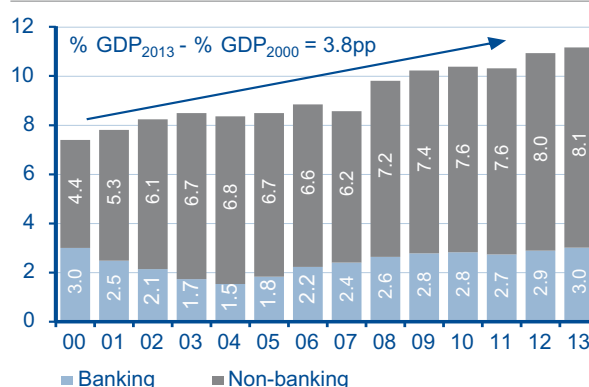
Chart 44

Home loans by type of intermediary, balances in bns of pesos (constant, March 204)

$$\frac{\text{Balance}_{2013}}{\text{Balance}_{2000}} = 2.2x$$

Non-banking: 519, 620, 725, 828, 909, 930, 977, 968, 1,083, 1,125, 1,199, 1,290, 1,372, 1,382
Banking: 355, 289, 255, 213, 205, 256, 330, 379, 400, 421, 448, 467, 494, 512

■ Banking ■ Non-banking

Source: BBVA Research based on Banxico, CNBV, INFONAVIT, FOVISSSTE, BMV and INEGI data.
Year-end balances.

Chart 45

Home loans by type of intermediary, balances as a percentage of GDP (%)

$\% \text{ GDP}_{2013} - \% \text{ GDP}_{2000} = 3.8pp$

Non-banking: 4.4, 5.3, 6.1, 6.7, 6.8, 6.7, 6.6, 6.2, 7.2, 7.4, 7.6, 7.6, 8.0, 8.1
Banking: 3.0, 2.5, 2.1, 1.7, 1.5, 1.8, 2.2, 2.4, 2.6, 2.8, 2.8, 2.7, 2.9, 3.0

■ Banking ■ Non-banking

Source: BBVA Research based on Banxico, CNBV, INFONAVIT, FOVISSSTE, BMV and INEGI data.
Year-end balances.

Real annual growth in home loans has nevertheless been more moderate than in the case of consumer loans, rising at rates of 10% or less. Breaking this growth down by type of intermediary, non-bank mortgage lending was significantly more dynamic between 2000 and 2004, running at real average annual growth rate of 15.1% while bank lending fell by an average 12.7% in this period. However, bank lending expanded faster than non-bank mortgages between 2005 and 2007, and growth has been moderate in both sectors since 2008. The expansion in bank lending was greater in real terms in 2013, running at 3.6% compared to 0.7% (Chart 47).
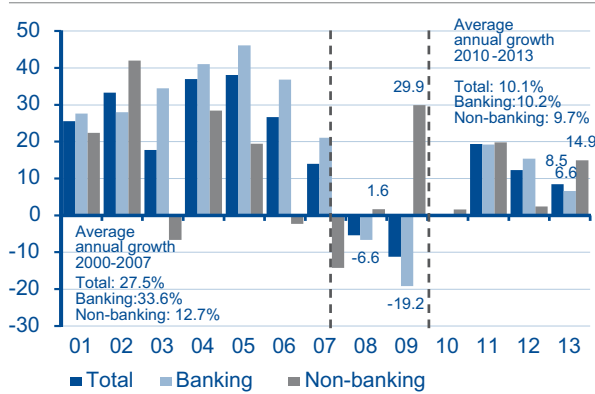
The patterns observable in the balances of both consumer and home loans are important if we are to understand the evolution of family indebtedness. As we shall see below, consumer loans currently account for a larger share of the debt service payments made by households. This is largely the result of increased lending by the banking and non-banking sector, but it is also due to changes in the cost of loans. Meanwhile, mortgage lending has also grown significantly in terms of debt service payments, a phenomenon which is related with the expansion of non-bank lending at the beginning of the decade, and more recently with more attractive conditions for borrowers offered by retail banks.

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[23] We estimate that it is elevant to include this concept in the family indebtedness measurement because, beside its relative importance in the total balance of homes loans, these credits are househould debts, despite that when they are in the stock markets they went out of the intermediaries balance.
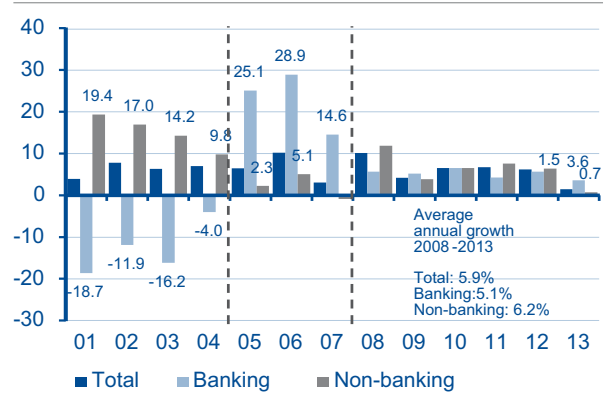
Chart 46
Consumer loans by type of intermediary, real annual growth (%)

Average annual growth 2010-2013
Total: 10.1%
Banking:10.2%
Non-banking: 9.7%

Average annual growth 2000-2007
Total: 27.5%
Banking:33.6%
Non-banking: 12.7%

■ Total ■ Banking ■ Non-banking

Source: BBVA Research based on Banxico, CNBV, INFONAVIT, FOVISSSTE, BMV and INEGI data.

Chart 47
Home loans by type of intermediary, real annual growth (%)

Average annual growth 2008-2013
Total: 5.9%
Banking:5.1%
Non-banking: 6.2%

■ Total ■ Banking ■ Non-banking

Source: BBVA Research based on Banxico, CNBV, INFONAVIT, FOVISSSTE, BMV and INEGI data.

Measurement and evolution of household debt service

The balances of consumer and home loans provide an idea of households' total indebtedness with financial intermediaries, but they do not tell us how much households pay on a regular basis. To learn this, we need information on the flow interest payments, fees and repayments, which we can obtain from a number of sources or, in some cases, on the basis of certain assumptions.

1) Interest payments and fees

Data on interest and fees paid to banks was obtained from the historical financial indicators published monthly by the CNBV. In the case of development banks, payments in respect of interest and fees were calculated by multiplying the balance (obtained from Banxico) at the implicit rates of interest and fees charged by retail banks.[24]

Interest and fees paid on loans granted by the non-bank sector were estimated based on balances, and in some cases assumptions for interest rates and fees. As shown in the appendix, for example, the total interest and fees paid on department store credit cards and to unregulated SOFOMES were estimated by multiplying the outstanding credit balance by the interest and fee rates charged by retail banks plus a spread. This spread was obtained based on data published by CONDUSEF on the total annual cost (TAC) of various credit cards, including cards issued by department stores, and other loans granted by other intermediaries.[25] The sum of these items provides an estimate of the cash flows earmarked by Mexican families to for the payment of interest and fees to financial intermediaries.

Consumer loans

As shown in Charts 48 and 51, the annual sum paid by families in respect of interest and fees on consumer loans (bank and non-bank loans) was MXN309bn, an increase of 9.4% in real terms compared to the previous year. Breaking this total down by loan type, we may observe that non-revolving bank loans (personal, payroll, car loans, and loans for the acquisition of consumer durables) were the main item concerned in payments of interest and fees (43.3%), followed by non-bank loans (28.8%) and bank credit cards (27.9%).

Between 2000 and 2013, payments of interest and fees on consumer loans expanded almost 9x in real terms due to the increase in payments on both bank loans (7.9x) and non-bank loans (15.6x). The banking sector saw a significant increase in payments on non-revolving loans beginning in 2009, displacing credit card payments (see Chart 49), which have shrunk by 41% since 2007.

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[24] The implicit rates are obtained by dividing annual flows of interest and fee income by the average annual balance of loans.
[25] In the case of credit cards, we consulted the article *¿Cuál tarjeta me conviene?* published in the journal *Proteja su Dinero*, issue No. 150, August 2012, CONDUSEF. In the case of payroll loans, we consulted the article *¿Sabes cuál es la tasa de interés y el CAT que te cobran por tu crédito de nómina?*, CONDUSEF press release No. 45, 24 June 2013.
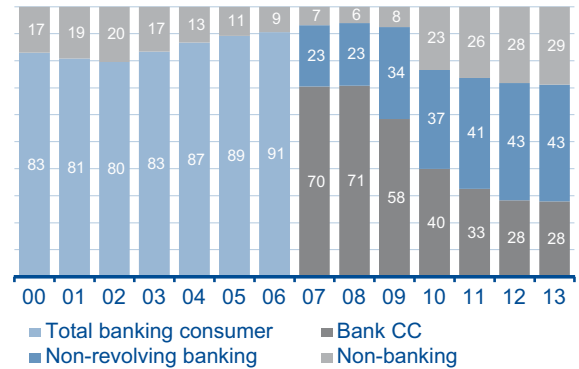
Chart 48

Annual payments in respect of interest and fees paid on consumer loans. Expressed in bns of constant pesos, base March 2014
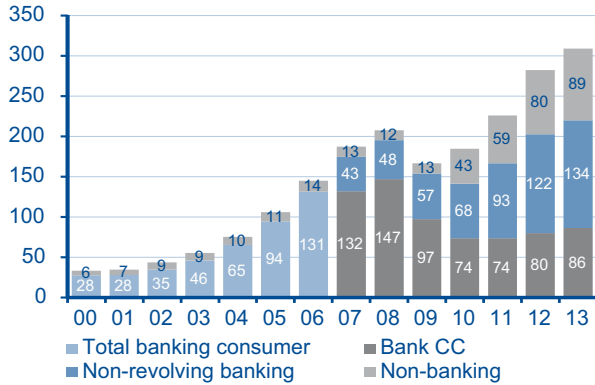
Source: BBVA Research based on CNBV and Banxico data.

Chart 49

### Percentage structure of annual interest payments and fees on consumer loans, %

Source: BBVA Research based on CNBV and Banxico data.

The non-banking sector has expanded significantly since 2010 as a result of increasing payments on department store credit cards and payments to other regulated non-bank financial intermediaries (IFNBs in the Mexican acronym), mostly SOFOMES, granting non-revolving loans.[26] Payments on department store credit cards doubled between 2009 and 2010, and payments to regulated SOFOMEs grew 7.5x. In 2012 payments of interest and fees on non-bank consumer loans grew even faster compared to the preceding years, taking unregulated SOFOMES into account (Chart 50).[27]
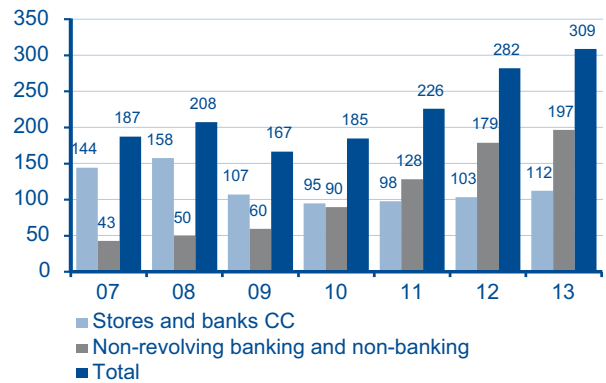
Chart 50

Annual payments in respect of interest and fees paid on non-bank consumer loans. Expressed in bns of constant pesos, base March 2014
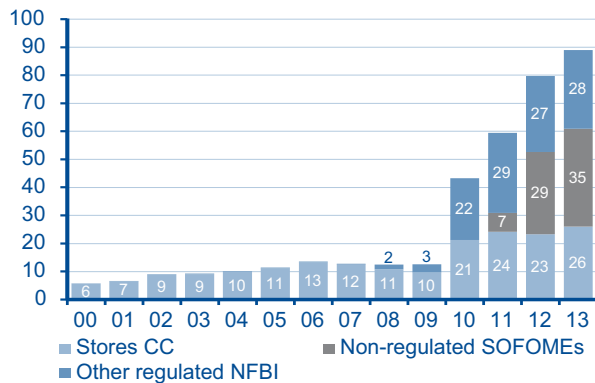
Source: BBVA Research based on Banxico, CNBV and BMV data.

Chart 51

Annual payments in respect of interest and fees paid on revolving and non-revolving consumer loans. Expressed in bns of constant pesos, base March 2014

Source: BBVA Research based on Banxico, CNBV and BMV data.

To sum up, interest payments and fees on bank credit cards have fallen since the late 2000s, while payments on department store credit cards have increased. Furthermore, payments on bank credit cards have been displaced by non-revolving loans granted both by banks themselves and by the non-bank sector.

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[26] Only regulated SOFOMES which are not consolidated with their owner banks. Those that are consolidated are included in the banking sector.
[27] Though unregulated SOFOMES have existed since 2007, the information available on their operations is limited given their nature as unregulated entities. BBVA Research was nevertheless able to extract relevant information on those unregulated SOFOMES which issue debt on the Mexican Stock Exchange (BMV). This data was available as from 2012.

The diminution in payments on bank credit cards can be explained by at least two factors. The first of these is the increase in totaleros, customers who pay off the whole balance of their purchases each month and who therefore generate no interest. According to the periodic credit card indicators published by Banxico, balances on bank credit cards which did not generate interest represented 12% of the total outstanding in 2009, but their share had grown to 20.7% by December 2013. The second factor is the falling cost of bank credit cards. Chart 52 shows that credit card costs (which include interest and fees) were 30.5% in June 2010 but had slipped to 26.9% in December 2013, a fall of 3.5 percentage points.
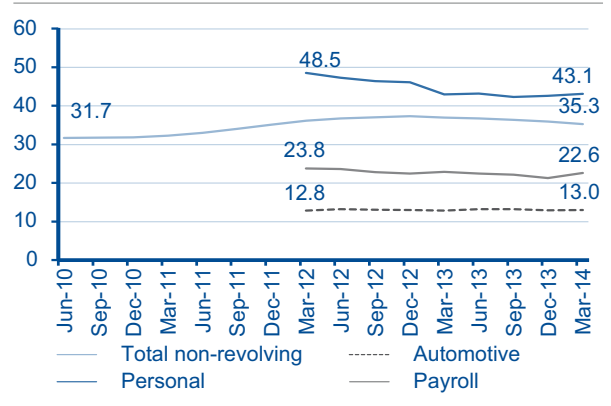
Chart 52
Evolution of the annual cost of bank credit cards, %*
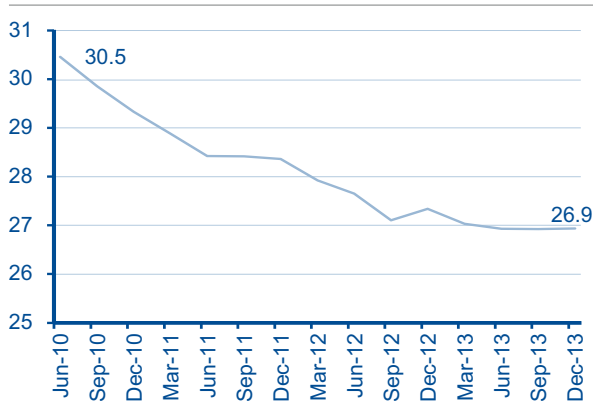
* Calculated on the basis of an implicit interest rate (interest income / outstanding credit balance) and the percentage fee income payable on the credit balance
Source: BBVA Research based on CNBV data.

Chart 53
### Cost of non-revolving loans from retail banks, %

Source: BBVA Research based on CNBV data.

The rise in payments on non-revolving loans may also be related to an increase in loan awards. Chart 54 shows bi-monthly details of the amount and number of loans granted by retail banks in the payroll, personal and cars segments in 2011 and 2013. It reveals a clear and continuous increase in both the amount and the number of personal loan awards. Furthermore, the average two-monthly loans granted totalled MXN14.3mn in 2011, rising to MXN22.6mn in 2013, an increase of 58% in real terms. At the same time, car loans granted by regulated SOFOMES have also increased, as have personal loans since the second half of 2013 (Chart 55).
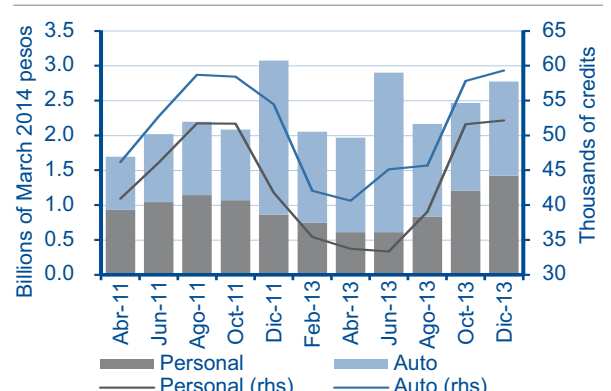
Chart 54
Amount and number of loans granted by retail banks
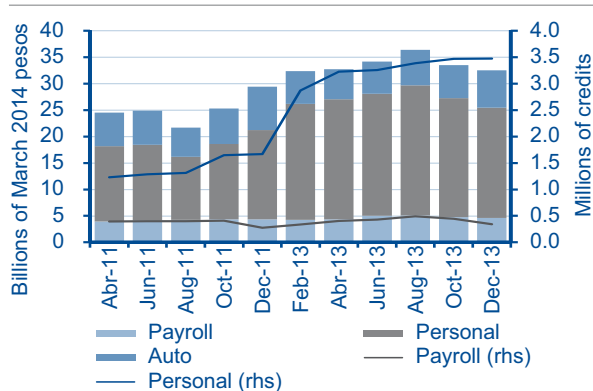
Source: BBVA Research based on CNBV data.

Chart 55
Amount and number of loans granted by regulated SOFOMES

Source: BBVA Research based on CNBV data.

The increase in these loans has been accompanied by a fall in their cost as shown in Chart 53, which presents the recent trend in the cost of non-revolving loans granted by retail banks and the main cost items. While the cost of non-revolving bank loans in fact rose between June 2010 and March 2014 (31.7% to 35.3%), the cost of loan components has recently fallen. For example, the cost of payroll loans, which accounted for 39% of the total non-revolving portfolio, diminished by 1.2 percentage points between March 2012 (first figure available) and March 2014. Meanwhile, the cost of personal loans (37% of the non-revolving portfolio) shrank by as much as 5.4 percentage points in the same period. Finally, the cost of car loans (21% of the portfolio) has remained stable at around 13%.
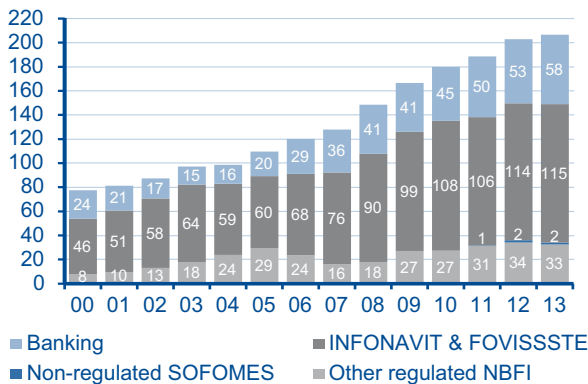
Home loans

At December 2013, interest and fees on home loans totalled MXN207bn, 55% of which consisted of payments to INFONAVIT, 28% payments to banks, 16% to other unregulated non-bank intermediaries and 1% to unregulated SO-FOMEs (Charts 56 and 57). Given that INFONAVIT is the sector's leading institution, it is only to be expected that it should account for the lion's share of interest payments, although payments to banks have increased significantly since 2004.

As in the case of consumer loans, interest payments and fees on home loans increased between 2000 and 2013. Payments to the banking sector expanded 2.4x in this period, compared to increases of 2.5 and 4.2x in payments to INFONAVIT and other regulated financial intermediaries (IFNBs), respectively. The result was growth of 2.7x interest and fees paid in this segment.

Chart 56

Annual payments in respect of interest and fees paid on home loans. Expressed in bns of constant pesos, base March 2014

■ Banking ■ INFONAVIT & FOVISSSTE
■ Non-regulated SOFOMES ■ Other regulated NBFI

Source: BBVA Research based on Banxico, CNBV, Infonavit, Fovissste and BMV data.

Chart 57

Percentage structure of annual interest payments and fees on home loans, %

■ Banking ■ INFONAVIT & FOVISSSTE
■ Non-regulated SOFOMES ■ Other regulated NBFI
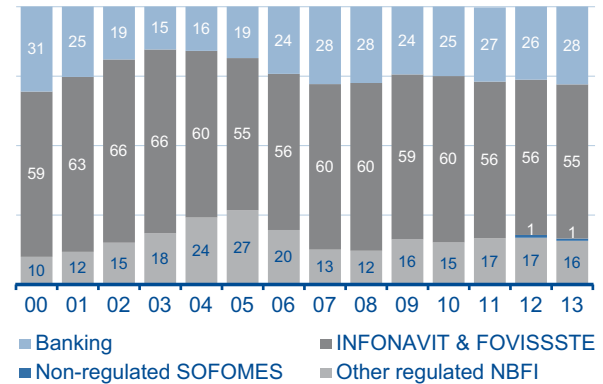
Source: BBVA Research based on Banxico, CNBV, Infonavit, Fovissste and BMV data.

The increase in interest payments on home loans is very likely due to the expansion origination by INFONAVIT in the decade to 2010 and the recent growth in bank origination. In the first place, the term of home loans is typically longer than 10 years, which means that many of the loans granted by INFONAVIT in the preceding decade remain outstanding and, therefore, still generate interest. Second, recent INFONAVIT origination is still significant, despite the decrease compared to prior years (Chart 58). Meanwhile, origination by banks and other IFNBs has expanded since 2010, probably on the strength of falling costs (bank interest rates have edged ever closer to the rates charged by INFONAVIT, Chart 59), which has made their loan products increasingly attractive. The result has been a constant increase in interest and fees paid on home loans.

Chart 58
Amount and number of loans granted by INFONAVIT and retail banks

INFONAVIT   Commercial banks
INFONAVIT (rhs)   Commercial banks (rhs)
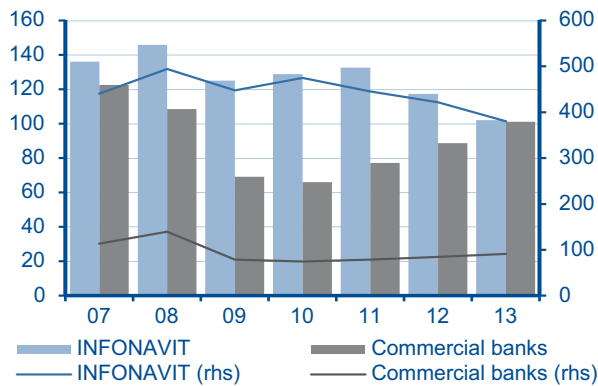
Source: BBVA Research based on INFONAVIT and ABM data.

Chart 59
Interest rates and Total Annual Cost of bank, non-bank and INFONAVIT mortgage loans, %

CB implicit interest rate[1]
TAC banks and SOFOLES[1]
INFONAVIT implicit interest rate[2]
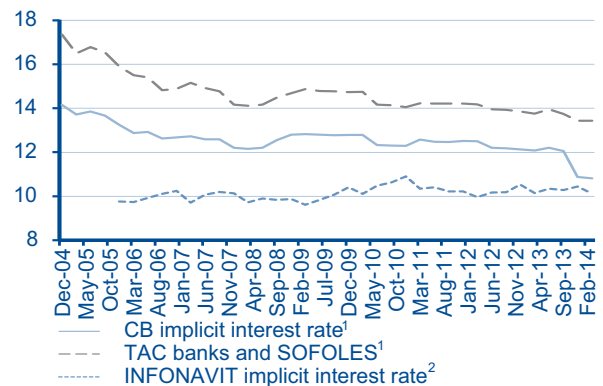
1 Source: BBVA Research based on Banxico data.
2 Calculated as a percentage of annual revenue flows in respect of interest on the balance of loans. Source: INFONAVIT

2) Debt repayments

In addition to interest payments, families are also obliged to make regular repayments of principal on the loans contracted. These payments depend basically on the terms of loans. For example, if a person acquired a personal loan of MXN1,000 with a term of two years, he/she would have to repay MXN500 each year in addition to interest and fees in order to settle the debt in its entirety.

As far as we are aware, there is no publicly available information on loan repayments made by borrowers in the financial system. Hence, an approximate calculation was made by multiplying the balance of outstanding loans by a repayment rate depending on the terms of each loan type. Returning to the above example, the borrower in a loan contracted for two years would make repayments at an annual rate of 50% (i.e. 1/term of the loan, in this case ½).

For the purposes of our analysis, data on balances was obtained from Banxico, while information on the terms of non-revolving and home loans was obtained from the CNBV. The reference taken in the case of credit cards was the minimum percentage payment established by Banxico in its regulations[28].

Consumer loans

The total repayments made on consumer loans in 2013 reached MXN215bn, 17.4% more than in the preceding year. As may be observed in Charts 60 and 61, the majority of repayments were made on personal bank loans (26%), followed by non-bank loans (23%), payroll loans (20%), bank credit cards (16%) and other non-revolving bank products (e.g. car loans), which represented 15%.[29]

There has been a considerable increase in repayments both in the bank and non-bank sectors over the decade. Between 2000 and 2013, repayments made to banks rose at an average rate of 25.6%, and by 2013 they were 16.6x higher than in the year 2000. The average annual growth rate was smaller in the non-bank sector at around 17.5%, and repayments in 2013 were therefore smaller than in the bank sector, although they were still 7x higher than in 2000.

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[28] Only the interest-bearing part of the outstanding balance was considered in the estimation of bank and department store credit cards.
[29] Charts 60 and 61 reflect a greater degree of disaggregation than Charts 48 and 49 presenting interest payments and fees. This is because the available information on bank interest income is not disaggregated, but estimates of repayments are based on balances for which a greater level of disaggregation can be obtained.
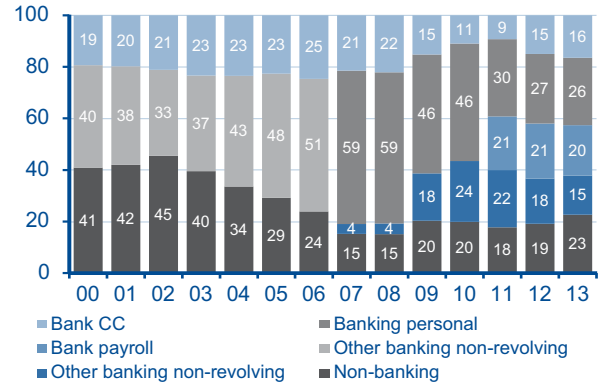
Chart 60
Annual repayments on bank and non-bank consumer loans,
amounts MXN bn, March 2014
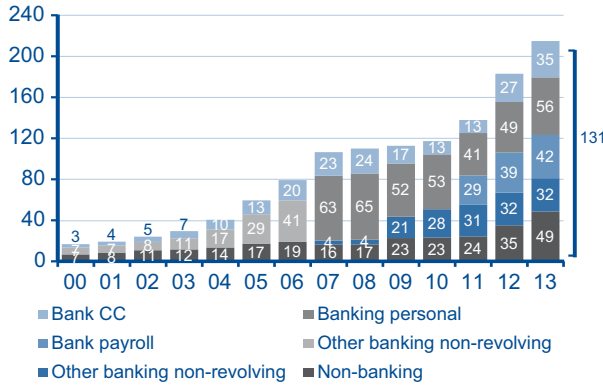
Source: CNBV, Banxico and BMV.

Chart 61
**Percentage structure of annual repayments on bank and non-bank loans, %**

Source: CNBV, Banxico and BMV.

Non-revolving consumer loans make up the main repayment item (Chart 63). In the bank sector, these balances totalled MXN131bn at December 2013 (Chart 60), accounting for 78.7% of the bank total. In the non-bank sector, meanwhile, repayments made on non-revolving loans amounted to MXN38bn (Chart 62), accounting for 78.1% of the sector total. This was only to be expected, given that non-revolving loans have a fixed term, which is generally less than five years, although this depends on the type of loan.[30]

Repayments on bank and department store credit cards (Charts 60 and 62, respectively) increased beginning in 2012. This is due to Banxico regulations governing minimum payments which came into force in January, although percentage increases were implemented stepwise between 2011 and 2013.[31]
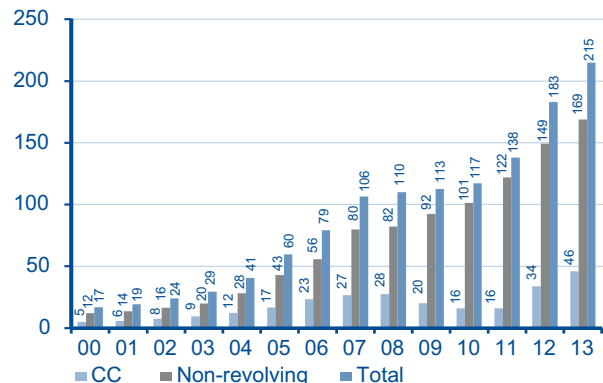
Chart 62
Annual repayments on bank and non-bank consumer loans,
amounts MXN bn, March 2014
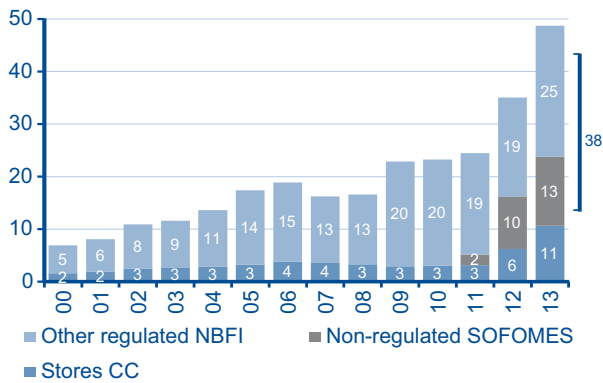
Source: BBVA Research based on Banxico, CNBV, FONACOT and BMV data.

Chart 63
Annual repayments on bank and non-bank credit card balances,
amounts in MXN bn, March 2014

Source: BBVA Research based on Banxico, CNBV, FONACOT and BMV data.

[30] For example, the average rate for retail banks in February 2014 based on CNBV data was 2.8 years for personal loans, 3.3 years for payroll loans, 4.1 years for car loans and 1.5 years for loans granted for the acquisition of consumer durables.
[31] The Banxico credit card rules establish minimum payments equal to the higher of: a) the sum of i) 1.5% of the outstanding balance on the revolving part of the credit facility at the period cut-off, not including interest for the period or value added tax (VAT), and ii) the aforementioned interest and VAT; and b) 1.25% of the limit on the credit facility granted. The rules established a percentage minimum payment of 0.5% for point a) between 3 January 2011 and 3 January 2012, rising to 1.0% for the period from 4 January 2012 to 3 January 2013, and 1.5% as of 4 January 2013. In order to simplify our analysis, and given that the available data refers to balances, we applied the rules established in point a) to estimate credit card repayments.

Home loans

Repayments of mortgage loans totalled MSN107bn in 2013, a slight decrease in real terms compared to 2012 (-0.7%). This decline was the result of smaller repayments made to the non-bank sector, and in particular to unregulated SO-FOMEs and other IFNBs, which is in turn related to a diminution in the balance held by these institutions (-9.5% and -5.3% per annum in real terms at the close of 2013).

As in the case of interest payments, the majority of loan repayments go to INFONAVIT in percentage terms (57.6% at December 2013), followed by banks (26.6%) and payments on loans packaged as MBS 13.6%).

Chart 64
**Annual repayments on bank and non-bank mortgage loans,
amounts MXN bn, March 2014**
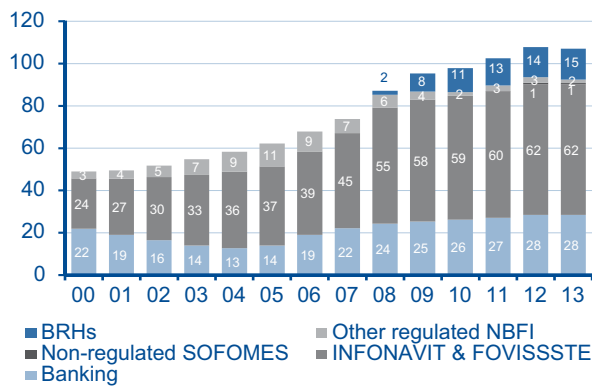
Source: CNBV, Banxico and BMV.

Chart 65
Percentage structure of annual repayments on bank and non-bank loans, %
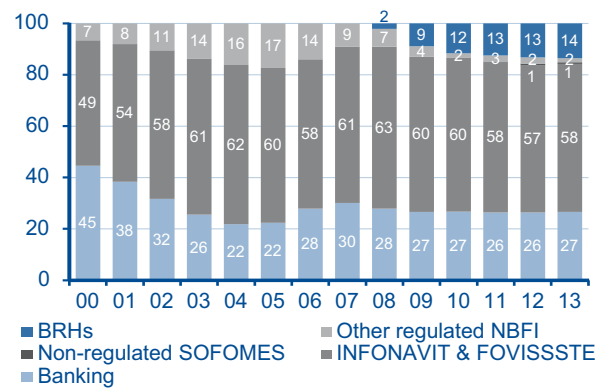
Source: CNBV, Banxico and BMV.

Mortgage repayments made between 2000 and 2013 grew at an average annual rate of 6.0% in real terms, which means these payments were 2.1x higher in 2013 than in 2000. Payments on bank mortgages have grown at a slower rate than the total (annual average of 2.6%), while payments to INFONAVIT have grown faster 7.5%). As a consequence, repayments made to banks were only 30% greater in 2013 than in 2000, while payments to INFONAVIT grew 2.5x.

Chart 66
Evolution of the weighted average term of home loans granted by retail banks, years
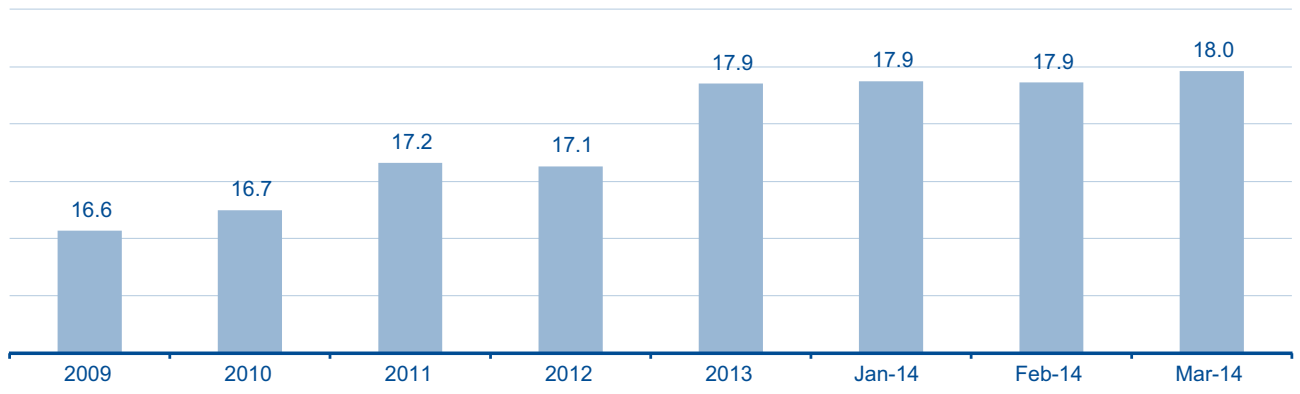
Source: CNBV.

It is possible that the slower rate of growth in bank repayments is related to an increase in the terms of the loans granted. As may be observed in Chart 66, the weighted average term of the mortgage loans granted by retail banks was 16.6 years in 2009, increasing to 18 years in March 2014. A longer term implies that households have more time to settle their mortgages, and therefore the amount due each year will be smaller. Meanwhile, the increase in repayments to INFONAVIT may be related to its expansion in the early years of the decade, as explained above.

3) Total financial payments made by families

The estimated total payments made in respect of interest, fees and repayments on consumer and home loans represent total debt service payments made by families, the amount of which is shown in Table 7. The total for 2013 was MXN837bn, 7.9% more than the estimate for the prior year. Average annual real growth in debt service between 2000 and 2013 was 12.9%. On this basis, debt service was 4.7x higher in 2013 than in 2000.

According to our estimate for 2013, 61.6% of the total debt service paid by families was applied to interest payments and the remaining 38.4% to repayments of principal. This percentage has remained practically constant in a range of 62% to 64% throughout the period analysed, indicating similar growth rates for both items (12.9% per year in real terms).

The data by loan segment reveal changes in the distribution of payments. While the greater part of debt service (71.5%) was applied to the mortgage payments in 2000, the opposite is now the case and in 2013 the majority of debt service payments were made in respect of consumer loans (62.7%). This is the result of faster growth in the latter segment (real average annual growth of 20.7%) than in home loans (real annual growth of 7.2%).

From the standpoint of the type of intermediary, the majority of debt service was paid to banking institutions in 2013. Thus, the share of payments to service bank loans grew from 39.2% in 2003 to 65.1% in 2007, then dropped from 63.9% in 2008 to 52.9% in 2010, since when it has remained stable at a around 56%. This was the result of slower growth in payments made to banks than to non-bank intermediaries (11.1% vs. 12.9%).

Table 7
Estimated annual debt service payments (MXN bn, March 2014)

Year	Payment item			Loan type			Intermediary			Total
	I+F	Repayment	% I+F	Consumer loans	Home loans	% consumer loans	Bank	Non-bank	% paid to banks	
2000	110.9	65.9	62.7	50.4	126.4	28.5	83.3	93.5	47.1	176.8
2001	116.1	68.8	62.8	54.0	130.8	29.2	78.8	106.0	42.6	184.9
2002	130.9	75.8	63.3	67.7	139.1	32.7	80.8	125.9	39.1	206.7
2003	152.4	84.2	64.4	84.7	151.9	35.8	92.9	143.7	39.2	236.6
2004	173.9	98.9	63.7	115.9	156.9	42.5	120.7	152.1	44.2	272.8
2005	215.4	121.8	63.9	165.4	171.8	49.1	170.9	166.3	50.7	337.2
2006	265.0	147.1	64.3	224.0	188.1	54.3	239.6	172.5	58.1	412.1
2007	315.1	180.2	63.6	293.7	201.5	59.3	322.5	172.8	65.1	495.3
2008	356.1	197.2	64.4	317.5	235.7	57.4	353.6	199.7	63.9	553.3
2009	333.2	207.9	61.6	279.3	261.9	51.6	309.8	231.4	57.2	541.2
2010	364.7	215.1	62.9	301.9	277.9	52.1	306.5	273.3	52.9	579.8
2011	414.5	240.5	63.3	363.9	291.0	55.6	357.4	297.5	54.6	654.9
2012	485.2	290.8	62.5	465.2	310.7	60.0	432.1	343.9	55.7	776.0
2013	515.5	321.8	61.6	523.7	313.6	62.5	472.2	365.1	56.4	837.3

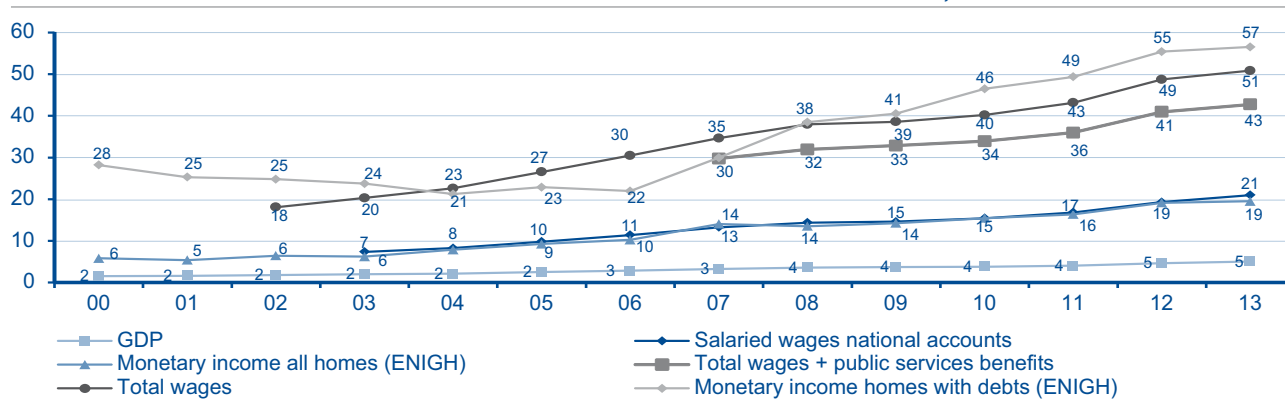Source: BBVA Research based on CNBV and Banxico data.

Household financial burden indicator

Following the methodology proposed in this article and in the June 2012 issue of **Mexico Banking Outlook**, total debt service payments provide the numerator for the household financial burden indicator. As mentioned above, the denominator consists of a relevant measure of income, so that the financial burden indicator measures the share of household incomes applied to pay debts with financial intermediaries. Relevant measures of income include GDP, the Wages and Salaries line of the National Account, total wages of workers affiliated to the Mexican social security system (IMSS), total wages plus benefits received by public servants, and the households' annual monetary income as reported in the ENIGH survey.

Chart 67
Evolution of the household financial burden based on different income measures, %

Source: BBVA Research based on Banxico, CNBV, BMV, INFONAVIT, FOVISSSTE, SHCP and INEGI data.
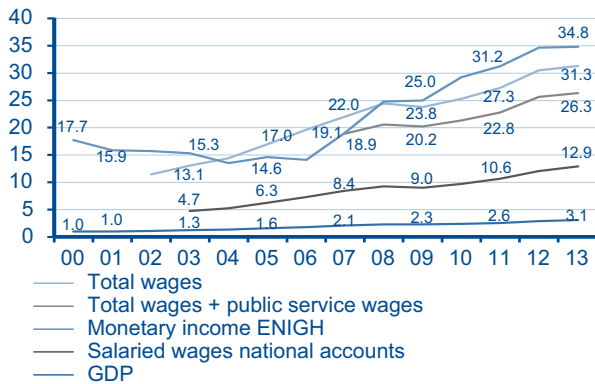
The financial burden indicator throws up different results depending on the income measure utilised (Chart 67). For example, household debt service is 5% if GDP, the broadest income measure, is used. However, the use of other income measures, which though narrower than GDP are also more informative because they reflect the resources actually received by families, changes the calculation of the financial burden depending on the breadth of the measure. For example, if income is measured in terms of the remuneration received by wage-earners according to the National Accounts, the financial burden for 2013 would be 21%, but if we use total wages, or total wages plus benefits received by public servants, then the financial burden will be 51% or 43%, respectively. If the reference is the monetary income received by households, the financial burden indicator was 21% in 2013, but the income of households reporting indebtedness In the ENIGH survey is taken, the financial burden is higher (57%).

A second, even more important result, is that the financial burden has increased, regardless of the income measures applied as the denominator, by a range of between 2.4x (financial burden measured on the basis of monetary income reported in the ENIGH survey) and 2.8x (other indicators). These growth trends are similar to those obtained and presented in the June 2012 issue of **Mexico Banking Outlook**, which estimated growth of between 2.5x and 2.8x between 2000 and 2011.

Interest and fees represent the largest share of the financial burden on any income measure (Charts 68 and 69), although the growth trend is very similar to that for repayments of principal. In 2013, the financial burden in respect of interest and fees was 3.1% as measured by GDP, a figure which is close to the result obtained by Banxico using disposable income.
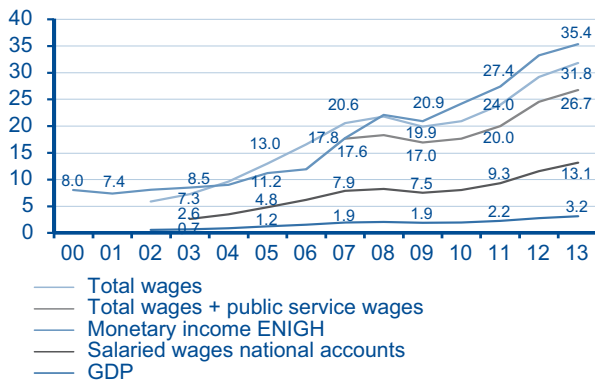
Meanwhile, the consumer loans segment concentrates the largest share of the financial burden, because both banks and the non-bank sector have recently increased their loan awards (Charts 70 and 71).

Chart 68

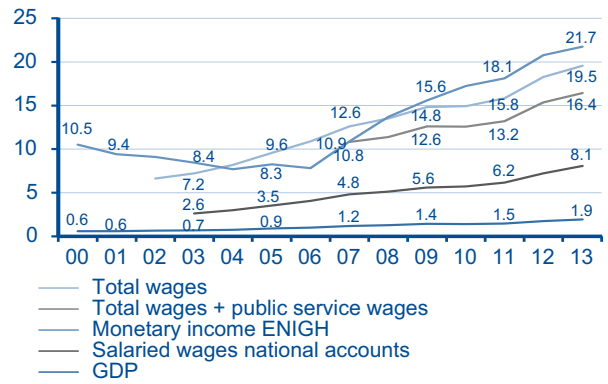**Household financial burden in respect of interest and fees based on different income measures, %**
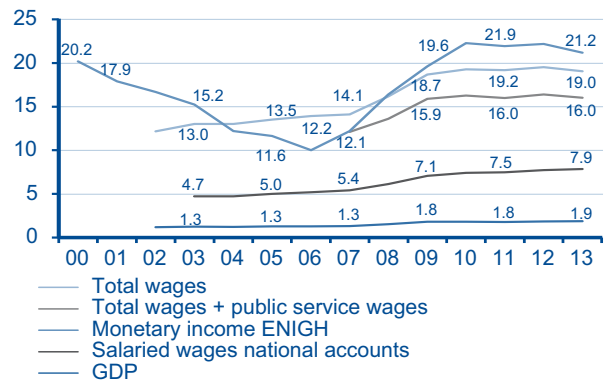

Source: CNBV, Banxico, INEGI and ENIGH.

Chart 69

Household financial burden in respect of loan repayments based on different income measures, %

Source: CNBV, Banxico, INEGI and ENIGH.

Chart 70

Household financial burden in respect of consumer loans based on different income measures, %

Source: CNBV, Banxico, INEGI and ENIGH.

Chart 71

Household financial burden in respect of home loans based on different income measures, %
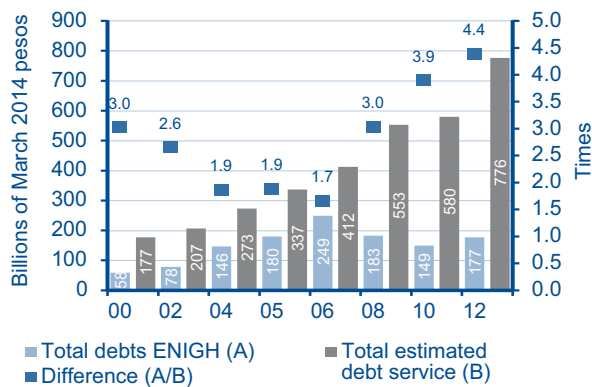

Source: CNBV, Banxico, INEGI and ENIGH.

The growth observed in the financial burden indicator does not necessarily imply a negative signal for the financial system. For example, if households have improved their job and earnings prospects, it is likely that they will decide to borrow more in the present to consume additional goods. In this case, an increase in the indebtedness indicator would in fact send a positive signal about the economy. In contrast, if households increase their debt to meet unexpected expenses, the indicator may reflect overborrowing, signalling vulnerability in the system. As this financial burden indicator is based on aggregate information, it is not possible to determine why families borrow more or less, or the specific characteristics of indebted families. In this light, it would be useful to find other sources of information to supplement the proposed indicator and throw light on the underlying reasons for trends.

3.a.4 Comparison between the ENIGH-based measurement of the financial burden with measurement based on aggregate information from intermediaries

In the preceding sections we have presented to indicators designed to measure household indebtedness, the first of which is based on the debt-related payments reported by households in the ENIGH survey, while the second is based on financial information concerning lenders. Given that these indicators are based on different information sources, it is quite natural for them to diverge in some respects. In this section, we briefly describe a comparison of the results generated by both indicators and we postulate some explanations for the differences observed.

Chart 72 reveals a significant difference in the payment flows reported by the families responding to the ENIGH survey and the payments flows estimated on the basis of intermediary data. The gap between the two appears to narrow in the period to 2006, but after 2008 it again increased, so that the debt service flows of MXN776bn estimated for 2012 were 4.4x greater than the annual payments of MXN177bn reported in the ENIGH survey. This results in different indicators for the financial burden (Chart 73). Based on the ENIGH data for 2012, some 12.6% of families' monetary income is applied to the payment of debts, while the figure estimated on the basis of data for intermediaries suggests that 55.2% of income is applied to debt service payments.

Chart 72
Debt-related payments based on ENIGH data vs. estimated debt service

Total debts ENIGH (A)
Difference (A/B)
Total estimated debt service (B)

Source: CNBV, Banxico, INEGI and ENIGH.

Chart 73
Family financial burden measured on the basis of ENIGH and aggregate indicator, % of monetary income

Debt payments ENIGH / monetary income ENIGH
Aggregate debt service / monetary income ENIGH
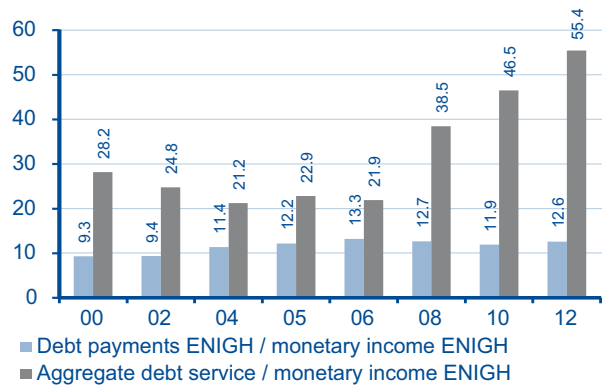
Source: CNBV, Banxico, INEGI and ENIGH.

Disaggregating the ENIGH data and the estimates of debt service by application of payment, we may observe that the difference is rooted in mortgage payments and payments in respect of debts with other individuals and institutions (Charts 74 to 76). For example, while the ENIGH respondents reported annual mortgage payments of MXN 5bn, estimated debt service throws up a figure of MXN311bn. Moreover, the two measures follow the same trend until 2006, but this is reversed in 2008 whereafter ENIGH payments fall while estimated debt servicing increases.

Chart 74
Mortgage payments based on ENIGH data vs. estimated debt service

Estimated total debt service
Mortgage ENIGH (rhs)
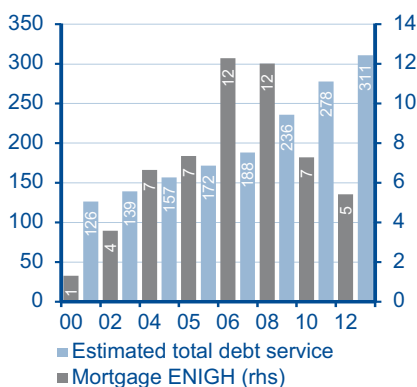
Chart 75
Payments to other individuals and institutions based on ENIGH data vs. estimated debt service

Other debts payments ENIGH
Banking amortizations
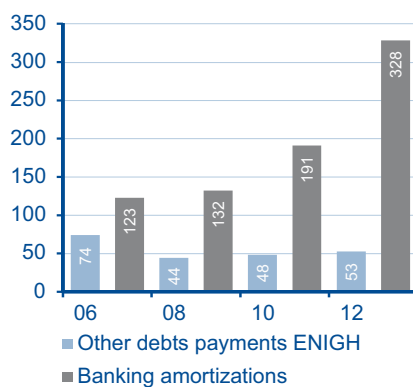
Chart 76
Credit card payments based on ENIGH data vs. estimated debt service

CC payments ENIGH
Estimated total debt service
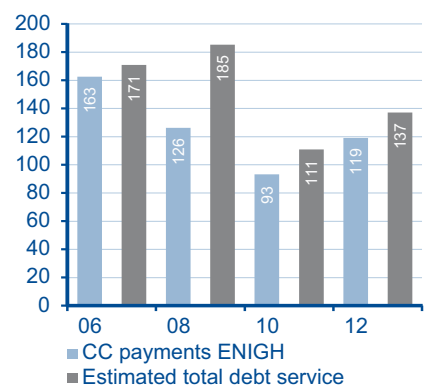
Note: Charts 75 and 76 do not present information from 2000 because the available data on financial intermediaries do not allow estimation of debt service broken down by credit cards and non-revolving loans for the years before 2007.
Source: BBVA Research based on INEGI, Banxico, CNBV, BMV, INFONAVIT, FOVISSSTE and FONACOT data. Shares at March 2014.

This is also the case with payments to other individuals and institutions reported in the ENIGH survey. Here, the comparison was made with respect to the estimation of payments made to service non-revolving consumer loans, including payments to both banks and non-bank financial intermediaries, as this would be the most comparable segment with the item reported in the ENIGH survey. ENIGH reported payments of MXN53bn under this item in 2012, compared to estimated debt service of MXN328bn, 6.2x more. Meanwhile, the information on credit card payments appears more consistent and presents the smallest differences, particularly in 2006, 2010 and 2012.

Among the possible reasons for the differences observed, we may mention the following. In the case of the differences between payments made to other individuals and institutions, and servicing of non-revolving loans, we may note that the latter measure includes only data from financial intermediaries, while the former includes payments of all kinds. Hence, it is possible that the information gathered by the ENIGH survey will show results that are not necessarily comparable with data on intermediaries. It is also likely that some personal loans granted to the owners of small and medium-sized businesses are classified as consumer loans, even though the proceeds are utilised for commercial purposes. If so, these loans would not be recorded as household debt in the ENIGH survey, but they would appear in the balance of consumer loans granted by intermediaries, and they would therefore be included in the estimation of debt service.

Furthermore, the estimators obtained on the basis of the ENIGH survey are less representative the smaller the number of observations available. Hence, estimates based on mortgage payments are less representative than those based on other types of loans, because few households report home loan payments.

In the case of discrepancies in mortgage payments, it is also likely that some households have mortgage loans, and therefore make payments of this kind, but do not report them in the ENIGH survey. This may be inferred from a comparison of the number of households reporting payments with the number of loans reported by retail banks to the CNBV. In the 2012 ENIGH survey, almost 176,000 households were recorded as having made mortgage payments, but CNBV data for the same year show that retail banks had a total of 822,000 outstanding mortgage loans on their balance sheets. While it is true that mortgages loans are granted to a person and not to a household, banks often allow aggregation of the income obtained by other family members in order to grant higher loans. In this light, it seems reasonable to suppose that the members of the typical Mexican household do not have more than one or two mortgage loans. It is therefore likely that the 822,000 loans reported by banks in 2012 were granted to a similar number households, which would in any event be a much larger number than that of the households reporting payments in the ENIGH survey. The evidence thus points to a possible downward bias in the mortgage payments reported in the ENIGH survey.

3.a.5. Conclusions

The household financial burden is considered a key indicator to measure the financial vulnerability of families in an economy. However, no specific measurement of this variable currently exists for Mexico. The Bank of Mexico has gone to considerable trouble to publish two annual indicators which approximate the pressure of debt on the country's households from two different angles. One of these the household financial position indicator, which captures the degree to which the total balance of households' debt is covered by their assets. The second indicator is household debt service, which provides information about changes in the trend of payments made by households in respect of interest and fees. While these indicators are certainly very useful to track the behaviour of key variables, they only partially approximate the debt burden for Mexican households.

This study proposes two alternative methodologies which will help throw light on the level of household indebtedness. The first estimates the financial burden on the basis of micro data drawn from the biennial ENIGH survey for the period 2000-2012. The wealth of data provided by this survey allows estimation of the average household financial burden for different groups of households and different types of loans. It also provides information on other variables with a direct impact on households' financial fragility, like mean monetary income and mean monetary expenditures.

The second methodology estimates the financial burden utilising data reported by financial intermediaries to the authorities and different definitions of disposable income. This aggregate financial burden indicator has risen continuously over the period analysed, regardless of the income measure utilised. As mentioned in the article, however, this need not necessarily signal vulnerability in the system, as the indicator proposed sheds no light on the reasons for increased indebtedness, which could be explained by better economic conditions, an improved outlook for households, or an expansion in the supply of financial services. Hence, the aggregate indicator is most useful when it

is supplemented by micro data providing a more detailed view of the characteristics of the households contracting debt. In this regard, we would stress that the results provided by the indebtedness measures using these two different types of information may sometimes diverge, as was observed in the comparative analysis offered above of estimates of debt servicing based on the data reported by financial intermediaries and using the ENIGH data. In fact, the two indicators serve different purposes, although they complement each other. For example, the aggregate indicator provides a more current and frequent measure of the evolution of indebtedness, and it is comparable with other macroeconomic and financial variables.

These advantages of the aggregate indicator would allow its inclusion in the quarterly analysis of lending published in future editions of **Mexico Banking Outlook**, and it could certainly be usefully supplemented by indicators at the household level obtained in future ENIGH surveys.

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Appendix

Definitions and information sources utilised to estimate debt servicing based on data from intermediaries

Panel A. Consumer loans

Entity	Interest	Fees	Repayments
Retail banks (RB):	Income from interest charged on the existing portfolio of consumer loans (quarterly flows)	Initial loan arrangement fees, and other fees and commissions charged on loans (quarterly flows)	CC = Spending balance$_{RB}$ x % minimum payment x % deferred balance Non-revolving loans = Spending balance$_{RB}$ x 1/ weighted average term (WAT) $WAT_{RB} = \sum_{i=1}^{4}$ segment term$_i$ x share of consumer loans portfolio$_i$ i = Personal, Payrol Personal, Payroll, ABCD, Car loans
	Source: Historical Financial Indicators, CNBV		Source: Banxico credit card regulations and Basic credit card indicators reports; Reported portfolio balances by interval of the original term of personal, payroll, car and ABCD loans, CNBV
Development banks (DB)	Spending balance$_{DB}$ x Implicit interest rate on non-revolving consumer loansx Implicit interest rate on non-revolving consumer loans$_{RB}$	Spending balance$_{DB}$ x % Fee rate non-revolv.cons. loans$_{RB}$ Fee rate$_{RB}$ = quarterly flow of income from fees$_{RB}$ / spending balance$_{RB}$	Spending balance$_{DB}$ x (1/WAT$_{DB}$) $WAT_{DB} = \sum_{i=1}^{3}$ segment term$_i$ x share of consumer loans portfolio$_i$ i = Personal, ABCD, Car loans
	Source: Total Lending to the Non-Financial Private Sector, Banxico; Historical Financial Indicators, CNBV		Source: Reported portfolio balances by interval of the original term of personal, car and ABCD loans, CNBV
Department store credit cards	Balance$_{CC\ store}$ x (Implicit rate of interest on credit cards$_{RB}$ + Rate of fees on credit cards$_{RB}$ + surcharge) Surcharge: assumed to be 18 percentage points over the annual bank rate, based on department store credit cards TAC (2012) and the credit card TAC published by Banxico.		Balance of portfolio$_{CC\ store}$ x Banxico minimum credit card payments rule x % deferred balance
	Sources: Private sector financing in Mexico, banks and other principal sources (met 2003), Banxico; Historical Financial Indicators, CNBV; and Report on total credit card TAC, CONDUSEF, August 2012		Sources: Banxico credit card regulations and Basic credit card indicators reports; Reported portfolio balances by interval of the original term of personal, payroll, car and ABCD loans, CNBV
Regulated non-bank financial intermediaries (IFNB)	Balance$_{IFNB}$ x Implicit interest rate on non-revolving consumer loans$_{RB}$	Balance$_{IFNB}$ x fee rate on non-revolving loans$_{RB}$	Balance$_{IFNB}$ x (1/WAT$_{IFNB}$) $WAT_{IFNB} = \sum_{i=1}^{2}$ segment term$_i$ x share of consumer loans portfolio$_i$ i = Personal, Car loans
	Sources: Total Lending to the Non-Financial Private Sector, Banxico; Historical Financial Indicators, CNBV		Sources: Reported portfolio balances by interval of the original term of personal, car and ABCD loans, CNBV
Unregulated SOFOMEs ENR	Balance$_{SOFOMES\ ENR}$ x (Implicit interest rate on non-revolving loans$_{RB}$ + Fee rate on non-revolv. consumer loans.$_{RB}$ + Surcharge) Surcharge: assumed to be 28 pp compared to the annual bank rate, based on the TAC for payroll loans granted by SOFOMES ENR		Balance$_{SOFOMES\ ENR}$ x (1/WAT$_{IFNB}$)
	Sources: Quarterly Financial Statements, BMV; Historical Financial Indicators, CNBV; Payroll loans study, CONDUSEF; Reports on portfolio balances by the interval of the original term of personal and car loans, CNBV		
FONACOT	Interest income on loans (quarterly flows)	Income from fees charged on portfolio (quarterly flows)	Balance$_{FONACOT}$ x (1/WAT$_{RB}$)
	Sources: Quarterly Financial Statements, FONACOT, Reports on portfolio balances by interval of original term, CNBV		

Panel B. Home loans

Entity	Interest	Fees	Repayments
Retail banks	Income from interest charged on the existing portfolio of home loans (quarterly flows)	Initial loan arrangement fees, and other fees and commissions charged on home loans (quarterly flows)	Home loans balance$_{RB}$ x 1/term of home loans$_{RB}$
	Source: Historical Financial Indicators, CNBV; Interest Rates and Average Term by Type of Home by Currency and Purpose of Loan. Total Portfolio, CNBV		
Development banks	Home loans balance$_{DB}$ x Implicit interest on home loans$_{RB}$	Home loans balance$_{DB}$ x Fee rate on home loans$_{RB}$ Fee rate$_{RB}$ = quarterly fee flow$_{RB}$ / balance of home loans$_{RB}$	Home loans balance$_{BB}$ x 1/term of home loans$_{RB}$
	Source: Total Lending to the Non-Financial Private Sector, Banxico; Historical Financial Indicators, CNBV; Interest Rates and Average Term by Type of Home by Currency and Purpose of Loan. Total Portfolio, CNBV		
INFONAVIT	Interest income (quarterly flows)	N.A.* *These institutions do not charge fees.	Home loans balance$_{INFONAVIT}$ x 1/term of home loans$_{RB}$
	Source: Quarterly Financial Statements, INFONAVIT		Source: Total Lending to the Non-Financial Private Sector, Banxico; Interest Rates and Average Term by Type of Home by Currency and Purpose of Loan. Total Portfolio, CNBV
FOVISSSTE	Interest income (quarterly flows)		Home loans balance$_{FOVISSSTE}$ x 1/term of home loans$_{RB}$
	Source: Quarterly Financial Statements, FOVISSSTE		Source: Total Lending to the Non-Financial Private Sector, Banxico; Interest Rates and Average Term by Type of Home by Currency and Purpose of Loan. Total Portfolio, CNBV
Regulated non-bank financial intermediaries (IFNB)	Home loans balance$_{IFNB}$ x TAC Banxico		Home loans balance$_{IFNB}$ x 1/term of home loans$_{RB}$
	Source: Total Lending to the Non-Financial Private Sector (met 2003); Interest rates on loans to Households, Banxico; Interest Rates and Average Term by Type of Home by Currency and Purpose of Loan. Total Portfolio, CNBV		
Unregulated SOFOMES	Home loans balance$_{SOFOMES\ ENR}$ x TAC Banxico		Home loans balance$_{SOFOMES\ ENR}$ x 1/term of home loans$_{RB}$
	Sources: Quarterly Financial Statements of SOFOMES issuing debt, BMV; Interest rates on loans to Households, Banxico		
Loans included in MBS	Loans balance$_{MBS}$ x TAC Banxico		Loans balance$_{MBS}$ x 1/term of home loans$_{RB}$
	Sources: Report on the balance of securitised loans by year of issue, CNBV; Interest rates on loans to Households, Banxico		

Panel C. Definitions of income

Income	Definition	Source
Wages	Number of permanent and temporary workers affiliated to the IMSS x average daily base wage for IMSS contribution purposes	INEGI Occupation, employment and remuneration > Permanent and temporary workers affiliated to the Mexican Social Security Institute (IMSS) > by contract type Occupation, employment and remuneration > Average daily base wage for IMSS contribution purposes
Wages + Remuneration of public servants	Wages + benefits received by public servants from the Federal Government. The measure includes ordinary remuneration (wages, social security benefits, bonuses, etc.) and extraordinary items (incentives, length-of-service payments, severance, etc.)	SHCP Quarterly reports on the economy, government finances and public debt
Remuneration of wage-earners per national accounts	This measure comprises the total remuneration paid in cash and/or in kind by an economic unit to its employees in consideration of work performed during the accounting period Among other items it includes employers' social security contributions, overtime payments, premiums, bonuses and profit-sharing arrangements, before deduction of any amounts in respect of social security contributions, tax withholdings and other deductions	INEGI National accounts > Goods and services accounts, base 2008 > At current prices > Earnings account > Uses > Remuneration of wage-earners > Wages and salaries
Monetary income	This is defined as the fraction of disposable income which households receive in cash, and which can immediately be used to purchase goods and services or, for example, to pay off debts. Households' disposable income or current income is defined as income received from: 1) income from works, 2) property rents, 3) transfers, and 4) estimated rental worth of homes	National Household Income and Expenditures Survey (ENIGH), INEGI

Source: BBVA Research

3.b. Determining factors of financial inclusion in Mexico based on the ENIF 2012 survey

3.b.1 Introduction

According to the World Bank's 2011 Global Financial Inclusion Database (Global Findex), which contains an analysis of 148 countries including Mexico, some 61% of adults in Latin America and the Caribbean are excluded from the formal financial system, and their only alternatives are to use informal lending structures or to seek to meet consumption and investment needs out of their own pockets.

The Mexican National Banking and Securities Commission (CNBV, 2012) defines Financial Inclusion as "… *access to and use of appropriately regulated financial services guaranteeing protection of the consumer and fostering financial education to enhance the financial capacity of all segments of the population*". This definition embraces not only the possibility of access (supply), but also individuals' actual use of financial services (demand). Although consumer protection and financial education are not directly addressed in this study, mainly for lack of measurable data, these dimensions are nevertheless considered to form an integral part of financial inclusion.

The recent literature on financial inclusion, and in particular impact assessments[1] and survey-based empirical studies, have shed light on its benefits, including access to credit under more favourable terms than those offered in informal markets (Campero and Kaisser 2013, Karlan and Zinman 2013, Straub 2003); opportunities to invest in new ventures and to expand existing businesses (Armendariz and Morduch 2005; Rajan and Zingales 1998); access to funding for education and health (Khandker and Pitt 1998); the security offered by formal saving; and the opportunity to manage and mitigate risks using insurance (Collins *et al.* 2009; World Bank 2008). In addition to factors such as these associated with specific products, transactional services can also facilitate and improve the security of other much-needed operations, such as the receipt of remittances (Anzoategui 2011,CEMLA 2012)) and payment of government transfers under social programmes (Bold *et al.*, 2012).

This study makes use of the wealth of data provided by the Mexican National Financial Inclusion Survey (ENIF) carried out by the CNBV, the National Institute of Statistics and Geography (INEGI) and the Alliance for Financial Inclusion (AFI) to explore the determining factors of financial inclusion in Mexico on the demand side. The first step to identifying the key factors was to construct an indicator of financial inclusion based on an analysis of relevant multiples. The indicator takes into account existing loan and savings products, and it therefore determines levels of individual inclusion in detail.

Using a non-linear regression analysis[2], we sought to explain the factors affecting financial inclusion both on aggregate, based on an Aggregate Financial Inclusion Indicator (savings and loan products) and separately through a savings products indicator (Savings Indicator) and a loan products indicator (Loans Indicator). The inclusion indicator was used as a dependent variable in order to aggregate financial products, allowing optimal use of the available information and a more accurate approach to individual financial inclusion (Cano *et al.* 2013)

The next section of this article describes the current state of financial inclusion in Mexico and makes certain comparisons with other Latin American countries. The third section describes the methodology employed in the analysis and presents the results from the econometric models. The final section sets out our conclusions and recommendations from the study.

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[1] Among other impact assessments, Burgess and Pande (2005), Dupas and Robinson (2009), Johnson (2004), Karlan and Zinman (2013), and Khandker and Pitt (1998) point to some of the benefits of financial inclusion, including higher consumption and productive investment, incentives to formalise work, higher savings, higher spending on education and heath, and poverty reduction.
[2] Quasi-maximum likelihood estimates using the binomial function (Papke and Wooldridge 1996).

3.b.2 Financial inclusion in Mexico

According to Demirgüç-Kunt and Klapper (2012), there is a huge variety in the use of financial services between different geographical regions depending on national levels of development, resulting in differences in the ways in which people save, obtain loans, make payments and manage risks. A brief analysis will therefore be appropriate to place the current situation of these issues in Mexico in their international context.

The Global Findex statistics show that 50.5% of the world population above the age of 15 has an account in some kind of financial entity (bank, credit union or cooperative), and that 22% saved in some way through these institutions in 2011. These percentages are only 27.4% and 7% respectively in Mexico, below the levels observed in the Latin America and Caribbean region as a whole,[3] where 39.2% of people had some kind of account and 9.5% had savings. They are also lower than the figures for comparable countries like Chile and Colombia, as shown in Chart 77. However, though only 7% of Mexicans reported saving through a formal financial institution in the last year, some 27.1% claimed to have put aside cash savings. The gap between total savings and the percentage channelled through financial institutions underlines both the prevalence of informal savings mechanisms at the same time as the scant use of formal financial services in Mexico. Based on an analysis of these results, we may state that Mexico has fallen behind in this area, as its savings figures are below what might be expected given the country's level of development. This situation demands in-depth exploration, not only for savings products but also in terms of financial inclusion in general.

Chart 77
Population with an account at a Financial Institution (FI) and holding savings in an FI, 2011, %

■ Account in FI ■ Has saved ■ Saved in FI
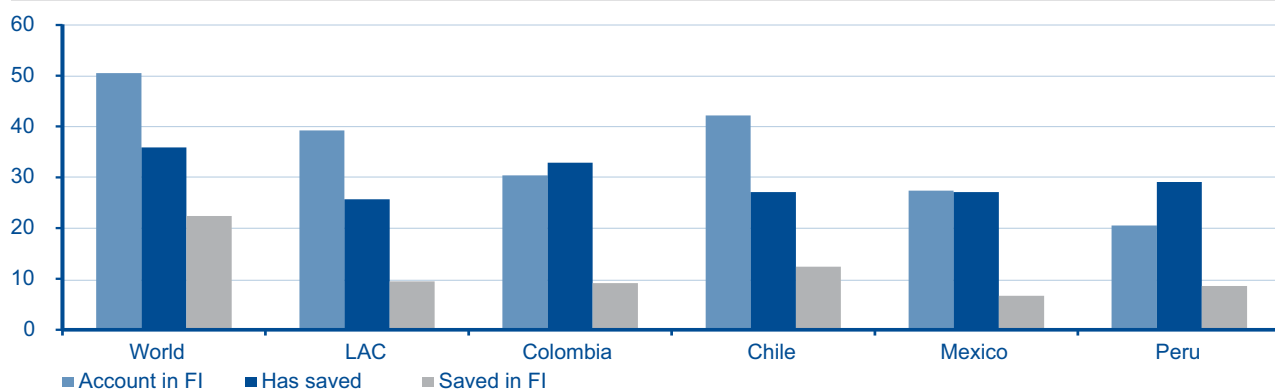
Source: BBVA Research based on Global Findex data

Mexicans' scant use of the formal financial system is a consequence of supply-side barriers and of the barriers perceived by the population from the standpoint of individual demand. According to Hoyo, Peña and Tuesta (2013), inadequate and variable earnings, and self-exclusion are the most important barriers in Mexico, influenced by variables which point to individual vulnerability (income levels, gender, education and occupation), geographical variables referring to the size of an individual's home town or village, and variables related with preference for the formal financial market. Furthermore, the low-income population generally lacks any financial education and people from these segments are often unaware of the possible benefits of using formal financial services.

Financial inclusion has received special attention at the national level, and the CNBV has introduced regulatory changes designed to provide a larger number of people with the opportunity to benefit from adequate use of the financial system's products and services. These changes include, for example, facilitating the development of mobile banking,[4] including correspondent banks in the provision of financial services, simplifying the requirements to open bank accounts (Simplified Accounts), and fostering competition between financial entities through the creation of Niche Banking.[5]

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[3] Including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.
[4] See Alonso *et al.* (2013).
[5] For further detail, see Hoyo *et al.* (2013).

An effort has also been made to foster competition in the banking industry through the use of basic, standard products.[6] Meanwhile in 2010, the Federal Government set up a programme to allow small savers to receive the returns paid on Treasury Certificates (*CETES Directo* Programme), an option formerly available only to major investors.

One consequence of the growing literature on financial inclusion and increasing public and private interest in this issue is the enormous effort that has been made to measure the phenomenon. Various measurement initiatives exist, such as the projects led by Honohan (2007), the G20[7] and the World Bank (Demirgüç-Kunt and Klapper, 2012), and the Bank of Mexico's Multidimensional Financial Inclusion Index. Some years ago, the CNBV began to publish reports on this matter, describing some of the work undertaken to obtain supply-side financial inclusion statistics and indicators.

In this regard, the financial services offered in the market can be quantified by reference to the number of access points in a given town, representing the financial infrastructure or distribution channels used to provide financial services. Access points in Mexico consist of bank branches, bank correspondents, ATMs, point-of-sale terminals, Mobile Banks and Online Banks.

Table 8 shows the main banking services indicators with data from the Fifth Financial Inclusion Report, 2013.[8] According to this report, 73% of Mexico's municipalities (including 97% of the country's adult population) have at least one point of access to the banking industry (retail or development banks), and to popular savings and credit entities (cooperatives and micro-banks).

According to Table 9, meanwhile, the use of banking services is limited, a matter which is confirmed in the following paragraphs comparing data for Mexico with other Latin American countries.

Table 8

Nationwide financial services access indicators at December 2012

Channel	Number per 10,000 adults
Branches	1.93
Correspondent banks	2.83
ATMs	4.89
Point of sale terminals	66.73
Accounts linked to mobile phones	105.99

Source: BBVA Research based on data from the 5th Financial Inclusion Report

Table 9

National indicators for the use of Multiple Banking services at December 2012

Channel	Number per 10,000 adults
Traditional bank accounts	8,356
Savings accounts	9
Term deposits	244
Debit cards	10,238
Credit cards	3,108
Mortgage loans	131

Source: BBVA Research based on data from the 5th Financial Inclusion Report

According to the International Monetary Fund's Financial Access Survey carried out in 2011, countries like Brazil and Chile, and even Peru in the case of bank branches (including correspondents), offer a broader range of channels to access banking services than Mexico (Charts 78 and 79). The same is true with regard to the number of deposit accounts at banks. (Charts 80 and 81).

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[6] Banks are required to offer a basic deposit product (basic account aimed at the general public) exempt from any fees or commissions, providing for monthly deposits of not more than 165 times the minimum wage. They must also provide a basic payroll product with the same characteristics (basic payroll product). There is also a basic credit card product, which is free of annual and other fees and has a credit limit of up to 200 times the minimum wage.

[7] For further details see: http://www.gpfi.org/news/moving-financial-inclusion-measurement-setting-appropriate-targets
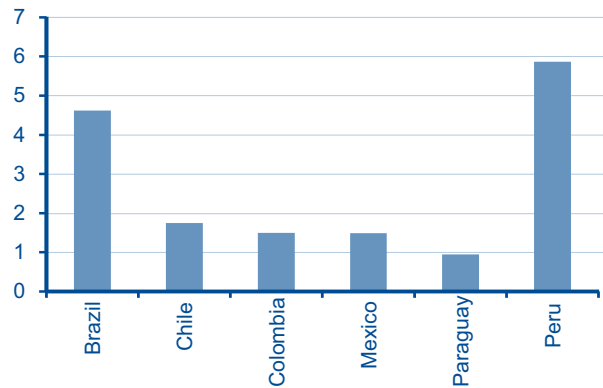
[8] Mexican National Financial Inclusion Board (2013).
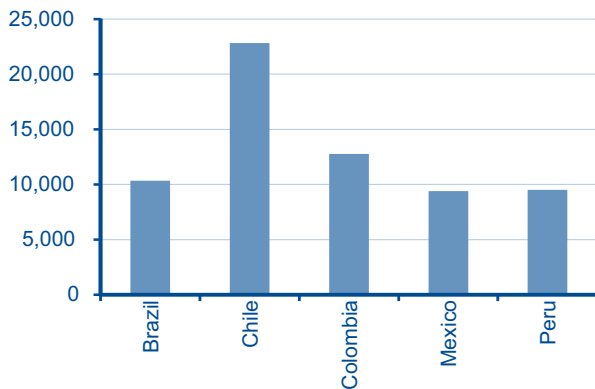
Chart 78
ATMs per 10,000 adults, 2011
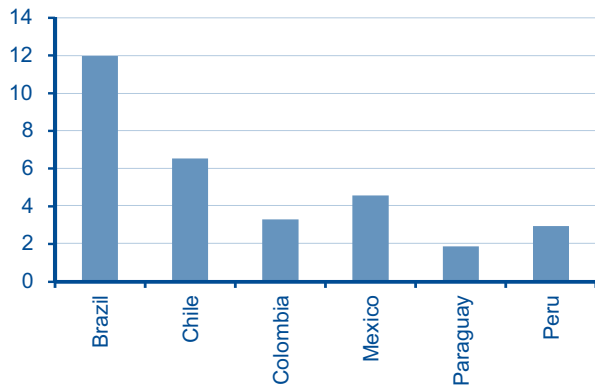
Source: BBVA Research based on Financial Access Survey, IMF

Chart 79
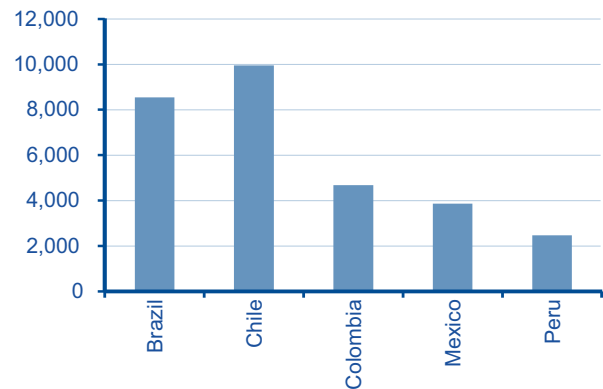### Bank branches and correspondents per 10,000 adults, 2011

Source: BBVA Research based on Financial Access Survey, IMF

Chart 80
Bank deposit accounts per 10,000 adults, 2011

Source: BBVA Research based on Financial Access Survey, IMF

Chart 81
Bank credit accounts per 10,000 adults, 2011

Source: BBVA Research based on Financial Access Survey, IMF

3.b.2.1 Demand-side features

According to the ENIF survey, 35.5% of Mexican adults have a savings, payroll or investment account in a formal financial inclusion. However, examination of specific socio-economic characteristics reveals that financial inclusion is closely related with the home-town size, gender, education and income levels.

Nationwide, women present a lower level of inclusion in the banking system (30%) than men (42%), and this is the case regardless of the size of respondents' home towns or cities. The percentage of users of formal savings services is higher in towns with more than 15,000 inhabitants (42%) than in smaller towns and villages. Age is another relevant factor in the level of financial inclusion, which is higher among the middle-aged (64%) than among the young and elderly (44%) (Chart 83). In terms of education, the use of banking services increases the higher the level of qualifications. While 18% of adults with primary level education have bank accounts, the percentage rises to 36% among people educated to secondary level and 65% of those with a university education (Chart 84). Likewise, the use of banking services increases in line with income level.[9] Thus, 94% of people earning between MXN13,000 and MXN20,000 per month have a bank account, but the percentage is only 23% of adults earning less than MXN3,000 (Chart 85).

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[9] Except for individuals earning more than MXN20,000 per month, who display lower use of banking services (84%) than the group with earnings between MXN13,000 and MXN20,000 (93%). This may be because the highest earners have access to other savings mechanisms.
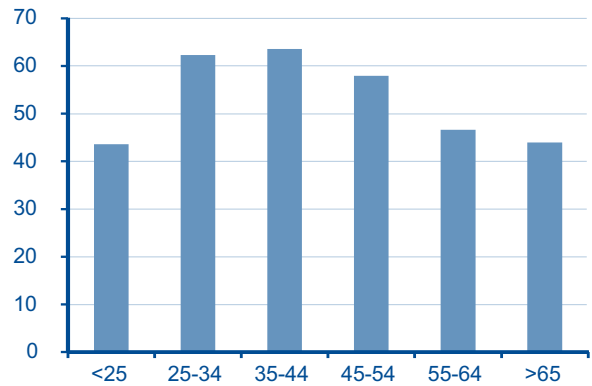
Chart 82
Use of banking services by home town & gender, %
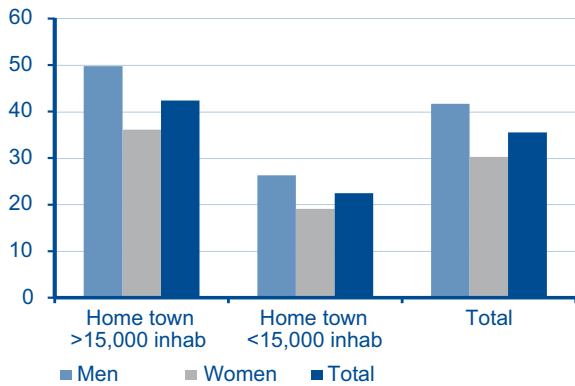
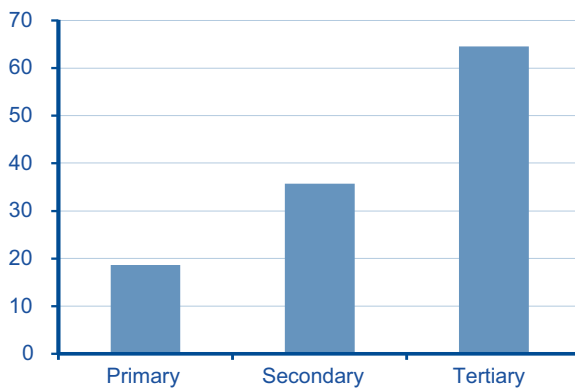Source: BBVA Research based on ENIF data.

Chart 83
Use of banking services by age, %

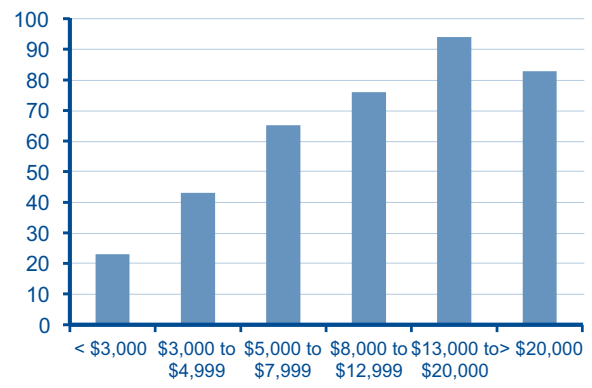Source: BBVA Research based on ENIF data.

Chart 84
Use of banking services by educational level, %

Source: BBVA Research based on ENIF data.

Chart 85
Use of banking services by income level, %

Source: BBVA Research based on ENIF data.

Though only 35.5% of Mexicans reported saving through a formal financial institution in the last year, some 43.7% claimed to have saved using informal mechanisms. This is a very general phenomenon, and according to Global Findex some 29% of savers worldwide do not use the financial system to save.

Turning to informal credit, Campero and Kaiser (2013) find evidence in Mexico for significant use of the informal market, given the important role of family and friends in helping households respond to unforeseen, adverse economic shocks. This is corroborated by the responses obtained in the ENIF survey. In emergencies, Mexicans turn basically to loans from family and friends (67.4%) or pawn goods (36.3%). These data support the hypothesis that informal mechanisms are preferred, revealing a relationship between the perception that formal savings and credit services are redundant or unnecessary, and use of the informal market.

3.b.3 Methodology and results

3.b.3.1 Methodology
National Financial Inclusion Survey, ENIF 2012
The primary objective of the survey is to gather data on households' use of and access to financial products and services for use in the design of financial inclusion indicators and in policy-making with regard to financial inclusion issues.

INEGI conducted the survey in 2012 in around 7,000 homes located in both rural and urban settings. The sample distribution guarantees that it is representative at the national level in terms of gender and home-town size (less than 15,000 inhabitants and more than 15,000 inhabitants).

The methodology described in the next section was applied to the ENIF 2012 data, including access indicators per town[10] in order to take account of supply-side factors.

Estimation of financial inclusion indicators via Multiple Correspondence Analysis

Multiple correspondence analysis (MCA) is a multivariate technique which can be used to summarise a numerous set of categorical variables in a small number of dimensions or factors, thereby preventing data loss. The methodology is similar to principal component analysis, a technique commonly used for continuous variables or time series.

According to Cano *et al.*(2013), empirical studies of financial inclusion carried out using econometric techniques frequently suffer from problems of information loss, because they are based on indicators which restrict the concept of financial inclusion to the subject's having a specific financial product like a loan or an account at a formal financial institution.[11] The application of methods like MCA makes it possible to use all of the available information, because multiple variables can be used in the analysis to show whether or not an individual has or does not use different borrowing (loans), savings (deposits, insurance) or transactional products.

MCA uses analysis of contingency tables to construct a Cartesian diagram based on the distance between the variables analysed. Thus, contingency table **Z** has **i** ranks representing the number of individuals analysed, and **j** columns corresponding to the categories of variables included in the analysis. The matrix therefore has an **ij** form. Matrix **Z** takes values of 0 or 1 in each file (individual), scoring 1 if the item belongs to the category to which variable refers (e.g. if an affirmative response is given to the question associated with the "credit card" variable) and 0 otherwise (Rencher 2002).

While the classic MCA model is calculated using a binary matrix[12], the present study uses the Burt matrix, $B = Z^{\top} Z$, technique. The Burt matrix is the symmetrical, square table formed by all two-way cross tabulations of the variables analysed. The diagonal of the matrix represents the point where each variable crosses with itself.

Following Greenacre (2008), the algorithm used to estimate the MCA is applied in two steps:

1. Matrix B is divided into the sum total of its elements, $b = \sum_{i,j} b_{i,j}$, to obtain the correspondence matrix, $P = (1/b) B$. whereupon the total ranks, r_i , and columns r_j, can be calculated.

2. The results are then broken down into individual scores, $S = (p_{i,j} - r_i r_j) / \sqrt{(r_i r_j)}$, in order to obtain the coordinates of the ranks and columns, and examine the relationships between them. This decomposition generates the vectors (u_k) and eigenvalues (λ_k) in dimension k.

3. The standard coordinates of ranks (**i**) and columns (**j**) are calculated as:

    $\alpha_{ik} = v_{ik} / \sqrt{(r_i)}$ for ranks, and $Y_{jk} = v_{jk}/\sqrt{(r_j)}$ for columns.

    These values are then used to calculate the principal coordinates of ranks (**i**) and columns (**j**), $f_{ik} = \alpha_{ik} \lambda_k$ for ranks, and $g_{jk} = Y_{js} \lambda_k$ for columns.

4. The principal adjusted inertias are calculated based on the above.[13] The sum of the weighted (by the relevant mass) squares of the principal coordinates in the kth dimension is the principal inertia, λ_k. The total inertia is the sum of the eigenvalues, $\sum_{k=1}^{k} \lambda_k$, and it may be useful to observe the proportions of inertia which are explained by each of the dimensions. This value provides a basis to decide the number of dimensions to be considered in the analysis. Finally, the contributions of column j and rank i in dimensions k provide the components of the inertia.

$$cont_i = \frac{r_i f_{i\,k}^2}{\lambda_k} \;\; ; cont_j = \frac{r_j g_{j\,k}^2}{\lambda_k}$$

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[10] Number of bank branches and bank correspondents per municipality according to data supplied by the National Banking and Securities Commission (2012).

[11] The majority of financial inclusion studies (Allen *et al.* 2012, Aportela 1999, Greene and Rhine 2013) only use the existence of a bank account as the variable denoting participation in the formal financial system.

[12] For further details, see Greenacre (2008).

[13] The principal inertia resulting from solution of the MCA model is adjusted to resolve the "percentage inertia problem". This estimate refers to optimisation of the adjustment of matrixes off the diagonal. See Greenacre (2008).

Three different financial inclusion indicators were calculated using the MCA methodology described above, one for savings products (Savings Indicator), one for credit products (Credit Indicator), and one for both credit and savings products (Aggregate Indicator). These indicators are based on the calculations described below.

In the first place, the MCA technique was applied to savings and credit products together. This was done by calculating the cumulative inertia according to point 4 of the methodology described above for each analytic dimensions, as shown in Table 10.

Table 10
MCA for saving and credit products
Analytic dimensions and percentage explained inertia

Analytic dimension	Cumulative inertia	Percentage
1	0.01533	83.16
2	0.000689	3.74
3	1.04E-05	0.06
Total	0.018435	100

Source: BBVA Research based on ENIF data.

The first dimension estimated explains 83.16% of the inertia. Hence, contributions can be taken from this dimension, and the contributions of each financial product for this dimension are analysed (Table 11).

Table 11
MCA for saving and credit products
Contributions of each product to the dimension with the highest unexplained inertia (Dimension 1)

Product	Respondent has product	Contribution
Savings account	No	0.017
	Yes	0.088
Current account	No	0.002
	Yes	0.104
Term deposit	No	0.001
	Yes	0.067
Payroll account	No	0.021
	Yes	0.076
Investment fund	No	0.001
	Yes	0.079
Bank credit card	No	0.018
	Yes	0.180
Payroll loan	No	0.002
	Yes	0.082
Personal loan	No	0.002
	Yes	0.064
Car loan	No	0.001
	Yes	0.089
Mortgage loan	No	0.002
	Yes	0.104

Source: BBVA Research based on ENIF data.

The contributions show that the personal financial assets (i.e. savings products) which contribute the most to inertia are savings and current accounts, the most useful products for the purposes of transactions and saving. In terms of borrowing, bank credit cards are clearly the product which contributes the most to inertia. On this basis, the most heavily weighted products in the Mexican financial inclusion indicator are current accounts and bank credit cards.

The following calculation of the MCA for savings products confirms that current accounts make the largest contribution to the total inertia from products of this kind. In this model, the first dimension explains 90.66% of total inertia. Finally, the MCA was calculated for borrowing products only, again showing that credit cards contribute most to inertia. In this analysis, dimension 1 explains 98.5% of inertia.

The contributions of each borrowing and saving product were used to weight individual responses with regard to the products used, allowing construction of a financial inclusion indicator which varies between 0 and 1. The indicator takes a value of 0 if an individual uses no financial products at all, increasing to a maximum of 1 for subjects who use all of the products included in the analysis.

Generalised linear model (GLM)

The financial inclusion indicator constructed on the basis of the MCA takes values in an interval from 0 to 1, which makes the calculation of linear models problematic. In view of this limitation, Papke and Wooldridge (1996) proposed estimation using quasi-maximum likelihood techniques as an appropriate method to deal with variables presenting values in a range between 0 and 1. Following this proposal, a number of subsequent studies have applied the methodology using generalised linear models with a logistic link function and binomial error distribution.[14]

Generalised Linear Models (GLM) are calculated using maximum likelihood techniques and represent an extension of linear models. The GLM proposed by McCullagh and Nelder (1989) is estimated using iterative algorithms in which hypothesis tests are based on likelihood comparisons between nested models. The GLM has two properties, its error structure and the link function. Errors may have a binomial, Poisson, Gamma or negative binomial distribution, above and beyond the assumption of normal distribution of errors found in linear models. The link function establishes the linear relationship between the explanatory variable (for example, woman) and the explained variable (financial inclusion indicator) by transforming the latter, and it may be based on a logistic, logarithmic, probit or negative binomial distribution.

The basic functional form of a GLM is: $\eta = g(\mu)$ where η is the linear predictor defined by the distribution applied to the series of data analysed, μ is the population mean and $g(\mu)$ is the link function. Given that the variable analysed in this study is bounded at both ends, the error distribution is binomial and a logistic (*logit*).[15] link function would therefore be the most appropriate.15 Hence, the model may be expressed as follows:

$$\eta = ln\left(\mu/(1-\mu)\right)$$

η is also specified as the linear sum of the effects of the explanatory variables. X_i Hence

$$\eta = \sum_{i}^{n} X_i\beta + \varepsilon$$

In our case X are the variables reflecting subjects' individual characteristics (gender, marital status, age, etc.), occupations, income, and location and available financial services in his/her place of residence; n are the 19 predictor variables; β are the parameters estimated in the model; and ε is a random error variable.

We opted for the GLM model in this study over others like the Beta regression proposed by Ferrari and Cribari-Neto (2004), because Papke and Wooldridge (1996) show that the assumption of beta distribution in empirical data containing numerous extreme observations (0 or 1) is problematic. This is the case with financial inclusion data, as a large number of individuals are in fact financially excluded, taking a value of 0 in the explained variable.

The next section explains the results obtained from estimation of the GL model for the financial inclusion indicator based on ENIF data.

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[14] No statistical models to perform the calculation existed when Papke and Wooldridge (1996) published their seminal paper on the treatment of data of this kind, and the necessary algorithm for the GLM method was designed only later by Stata (See: Cox and McDowell in: http://www.ats.ucla.edu/stat/stata/faq/proportion.htm).
[15] Again following Papke and Wooldridge (1996) and the canonical or natural links for the model.

3.b.3.2 Analysis of the factors determining financial inclusion

Applying the Aggregate Financial Inclusion Indicator, the personal characteristics influencing financial inclusion are age, status in the household and marital status (Table 12). These variables are statistically significant, in line with the findings of other studies such as Cano *et al.* (2013) for Colombia, Greene and Rhine (2013) for the United States, Cámara *et al.* (2013) for Peru, and Hoyo *et al.* (2013) for Mexico. As expected, financial inclusion increases over the subjects' lifetimes up to a tipping point (represented by the square of age) at 57.4 years of age, above which it begins to fall. The status of the head of the household, and marriage or civil partnership, are positively related with the indicator.

In terms of subjects' individual characteristics, the model shows that education is a key explanatory factor for financial inclusion in Mexico. As in other studies (Allen *et al.* (2012), Goodstein and Rhine (2013), Mitton (2008), Kempson *et al.* (2013) and Djankov *et al.* (2008), a higher level of education is associated with increased participation in the formal financial systems. This may be because education provides a way of measuring knowledge, skills and the decision-making ability, which imply greater financial capabilities when applied to the financial system, enhancing participation in formal financial markets (World Bank 2013a). Financial know-how encourages the acquisition of appropriate savings, loan and insurance products based on an individual's personal needs and preferences (returns, risk, costs, etc.).

The variables identifying a household's savings behaviour and ability to respond to adversity are also statistically significant in the Aggregate Financial Inclusion Indicator. The variable "ability to respond to shocks" is an approximation to subjects' vulnerability to external shocks like illness, job loss, natural disaster and other similar scenarios in which additional resources may be needed, A proxy variable was constructed to measure this matter in the model, represented by a dummy based on the question, "If you were faced by a financial emergency today equal to what you earn or receive in a month, could you pay that amount? This variable was found to be significant in the analysis, positively influencing (1.6%) the financial inclusion indicator, in line with the findings reported in other studies (Greene and Rhine, 2013) showing that adverse situations affecting households increased the likelihood of financial inclusion. Nevertheless, we would caution that the results of the model do not necessarily indicate causality, but only shed light on the personal characteristics and circumstances which are most closely associated with financial inclusion.

In terms of savings, a subject's household is understood to enjoy savings capacity if surplus cash is left over after all expenses have been met.[16] Household saving is constructed as a dummy variable which does not take into account either the amount put aside or its intended use. Hence, savings may be formal, informal and intended for use to purchase goods or make of any kind, which does not necessarily imply a link with the financial system. The results indicating that the "saving" variable is positively associated with the financial inclusion indicator, and the existence of financial assets in a household may therefore open the door to the formal financial system.

The "receipt of remittances" variable is not statistically significant, but the "employment income"[17] variable is one of the most important explanatory factors for financial inclusion. As in the majority of demand-side studies, which seek to explain the factors influencing the decision to participate in the formal financial system (Allen *et al.* 2012; Anzoátegui *et al.* 2012; Cano *et al.* 2012; Beck and de la Torre 2006, among others), financial inclusion is higher among people earning an income from employment in the model estimated here. Income from payment may be received via the financial system, which makes this a viable channel through which people can participate in the formal financial system. However, this is not necessarily the case if a subject works in the informal sector, or if his/her income is variable or low. As argued in Hoyo *et al.* (2013), the main barriers to financial inclusion in Mexico are the lack of an income and income instability.

With regard to financial infrastructure (branch and correspondent offices), the results of the model show that the availability of bank branches is positively and very significantly associated with the Aggregate Financial Inclusion Indicator in statistical terms. However, the bank correspondents variable has no effect on the indicator. This may be because correspondent offices are relatively new channels[18] which have not yet developed their full potential, given that only 30% of the adult population use this alternative although some 94% have access.[19]

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[16] Affirmative response to the question, "*Is there any money left over after meeting your expenses, or those of your household?*"
[17] The ENIF survey does not provide data on other sources of income aside from occupational earnings.
[18] The bank correspondents channel was opened in 2010, and since then it has grown by 97%, providing access in 1,410 municipalities in December 2012. Before this channel existed, two out of every three Mexican municipalities were not covered by the financial system (Peña and Vázquez, 2012). In just two years, then, the growing penetration of bank correspondents has changed the panorama with regard to the availability of formal financial services.
[19] Mexican National Financial Inclusion Board (2013).

The size of the subjects' towns of residence has a negative influence on the Aggregate Indicator (-1.7%), suggesting that the conditions for financial inclusion are worse in small towns and villages. This fact is usually associated with the lack of available financial services, but our model already controls for this variable. Hence it is possible that the negative relationship is explained by the characteristics or social norms of small communities, which may influence the decision not to participate in the formal financial system. This hypothesis was in fact substantiated by Campbell *et al.* (2012) in their examination of financial exclusion after subjects had had some kind of relationship with a banking entity (cancellation of inactive bank accounts). According to these authors, the norms of the communities where the subjects lived and social capital were explanatory factors for financial exclusion in the United States.

Table 12
GL Model for the Aggregate Financial Inclusion Indicator

Variable	Coefficient	Error term	Significance level
Woman	0.0763	0.0606	
Age	0.0453	0.0132	***
Age squared	-0.0004	0.0002	**
Size of household	0.0020	0.0155	
Head of household	0.1332	0.0639	**
Married or in civil partnership	0.1017	0.0595	*
Level of education	0.1567	0.0125	***
Employee	0.0444	0.2824	
Employer	0.1628	0.3162	
Self-employed	-0.2569	0.2861	
Unpaid worker	-0.1565	0.3457	
Inactive	-0.1759	0.2836	
Household with savings	0.2924	0.0554	***
Ability to respond to shocks	0.3799	0.0542	***
Receipt of remittances	0.0759	0.0817	
Income from employment	0.2272	0.0258	***
Town with at least 15,000 inhabitants	-0.4622	0.0628	***
No. of bank branches in State	0.2450	0.0509	***
No. of bank correspondents	0.0222	0.0181	
Observations	6109		
Pseudo R2	0.309		

*** Significant at 99%, ** Significant at 95%, *Significant at 90%
Source: Calculations BBVA Research based on ENIF 2012

The results obtained for the Credit Indicator (Table 13) are similar to those for the Aggregate Indicator with regard to the statistical significance and signs of the variables, although certain significant differences exist. For example, households' ability to respond to shocks is not statistically significant for the Credit Indicator, while the coefficients for bank correspondents and the variable identifying women are both statistically significant and positive. Hence, it would appear that women are more financially included than men in the case of loan products. This result may be because micro-lending programmes tend to be biased towards women[20], and because of the high repayment rates observed (Duflo 2012) in special credit facilities (group and communal credit, and alternatives to the requirement for collateral guarantees). Other studies focusing on credit (e.g. Johnson, 2004) show differences between countries, and women tend to be less financially included where there is clear discrimination against women in terms of their legal rights. Demirgüç-Kunt *et al.* (2013) find that there are no significant differences in developing nations with regard men's and women's access to formal credit, but this panorama changes when the focus of analysis is placed on

[20] Compartamos Banco is Latin America's largest micro-finance entity, It has some 2.3 million customers in Mexico, 71% of whom are women contracting the "Crédito Mujer" loan product (2012 data, see: http://www.compartamosbanco.com).

savings or the existence of bank accounts. With regard to the statistical significance of the number of bank correspondents, meanwhile, there is no evidence for any direct relationship between the presence of correspondents and borrowing, as loan products cannot be contracted through this channel. However, loan-related payments accounted for 59.6% of transactions carried out through bank correspondents in 2012, according to figures published by the National Financial Inclusion Board (2013).[21] In this light, it would appear that correspondents have been instrumental in facilitating the payment of loans, thereby improving the Indicator for products of this kind.

The results obtained from estimating the model only for personal financial assets (i.e. current, payroll and savings accounts, term deposits and mutual funds) differ more significantly from the aggregate model (Table 13). In the Savings Indicator, for example, the "head of household" and "married or civil partnership" are not statistically significant, but the "woman", "employer" and "receipt of remittances" variables are. The "woman" variable is negatively associated with financial inclusion, which is consistent with the arguments voiced by Allen *et al.* (2012), Demirgüc-Kunt *et al.* (2013) and the World Bank (2013). Being an employer and receiving remittances are both positively associated with the Savings Indicator. This finding was reported by Anzoátegui *et al.* (2012) for the receipt of remittances in El Salvador and by Aportela (1999) for saving by employer heads of household participating in BANSESFI expansion programmes in Mexico.[22]

Table 13
Summary of results from the GLMs for financial inclusion indicators

Variable	Aggregate Indicator	Credit Indicator	Savings Indicator
Woman		***	**
Age	***	***	**
Age squared	**	***	
Size of household			
Head of household	**	**	
Married or in civil partnership	*	***	
Level of education	***	***	***
Employee			
Employer			*
Self-employed			
Unpaid worker			
Inactive			
Household with savings	***	**	***
Ability to respond to shocks	***		***
Receipt of remittances			***
Income from employment	***	***	***
Town with at least 15,000 inhabitants	***	***	***
No. of bank branches in State	***	**	***
No. of bank correspondents		**	

*** Significant at 99%, ** Significant at 95%, *Significant at 90%
Source: Calculations BBVA Research based on ENIF 2012

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[21] Bank correspondents carried out some 71.7 million transactions in 2012, of which loan payments accounted for 59.6%, account deposits 25%, account withdrawals 10.9%, and service/utilities payments 4.3%. Operations involving the opening of simplified accounts remain marginal.
[22] The BANSEFI expansion programmes referred to in Aportela (1999) comprised opening 99 offices in 34 municipalities, 27 of them with no financial infrastructure, and the launch of saving products designed to facilitate saving by the low-income segment of the population.

3.b.4 Conclusions and recommendations

Though 73% of municipalities in Mexico home to 97% of the adult population have at least one point of access to the financial system, cover remains below the levels of benchmark Latin American countries like Brazil and Chile, and even below Peru. The level of service achieved thanks to regulatory changes and public policy on matters of financial inclusion has so permeated through to the 38% of adults between 18 and 70 years of age who hold some kind of saving or loan product in a formal financial institution.

An Aggregate Financial Inclusion Indicator (comprising both saving and loan products) was designed using ENIF 2012 data. An Indicator for Credit products and an Indicator for Savings products were separately estimated applying the multiple correspondence analysis technique.

This study takes a broad view of financial inclusion by integrating both financial assets and loan products in a single indicator. However, we would suggest including an approximation to the quality of products, financial education and consumer protection, all dimensions which form part of the concept of financial inclusion. The limitation here is the availability of information, although the CNBV has continued to make progress generating indicators and multilateral organisations are showing increasing interest in issues of this kind.

In terms of individual characteristics, education is a key determining factor for financial inclusion in Mexico. This variable is a statistically significant explanatory factor for the Aggregate Indicator, the Saving Indicator and the Credit Indicator. The relationship is positive and indicates that participation in the formal financial system increases the higher the level of subjects' level of education, possibly because education is a proxy for people's financial capacity.

Being a woman is a significant variable in both the Saving Indicator and the Credit Indicator. However, it is not significant in the Aggregate Indicator. This result demands some analysis, as it may hold the key to understanding why inclusion studies, which mainly consider whether subjects have an account at any formal financial institution, often tend to place women in an inferior position to men with regard to participation in the financial system.

With regard to the importance of income levels as an explanatory factor for financial inclusion,[23] the results of all of the models calculated reveal a positive association between income from employment and increased financial inclusion.

Both the number of branches in a State and the number of correspondents are significant variables related with the financial services offered in all three Financial Inclusion Indicators (Aggregate, Savings and Credit). It will be important to continue exploring the effect of bank correspondents both in order to identify the factors which might increase use of their services and to identify the reasons why they are used largely to pay loans.

Meanwhile, the result of the negative relationship between financial inclusion and residence in small towns with less than 15,000 inhabitants demands further analysis in subsequent studies. Despite the plausibility of hypothesis related with community characteristics and social capital, the specific social norms and features found in municipalities of this kind remain to be identified, including for example increased presence of informal saving and credit mechanisms (family loans, pawn shops and informal lending groups known as tandas)[24], if targeted policies and measures are to be implemented to allow local residents to benefit from the formal financial system.

The results obtained from the study point to the need for detailed analyses to determine the most appropriate public policies to increase participation by different groups of the population in the formal financial system in view of their socio-economic characteristics and geographical location.

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[23] The limitations in the available information meant it was not possible to make a broader analysis of income sources other than earnings from work.
[24] ROSCAS or Rotating Saving Club Associations

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Appendix Description of variables

Variable	Question	Definition
Woman	2.3 Is (NAME) a man or a woman?	Dummy: 1 = woman and 0= man
Age	2.4 How old is (NAME)?	Age in years
Age squared	2.4	Age squared
Size of household	Total number of people in the household	Number of people in the household to which adult surveyed belongs.
Head of household	3.1 Who is the head of the household?	Dummy: 1 = respondent is head of household, 0 otherwise.
Married or in civil partnership	3.2 Are you presently...?	Dummy: 1 if the respondent lives with a partner (1) or is married (5), and 0 otherwise.
Level of education	3.4. What was the last year of schooling received or highest grade attained?	None (0) Kindergarten (1) Primary (2) Secondary (3) Technical diploma after completion of secondary education (4) Basic standard education (5) Preparatory studies or baccalaureate (6) Technical degree after preparatory studies (7) Honours degree or professional qualification (8) Master's degree or doctorate (9)
Employee	3.7 In your work or business last month you were...	Dummy: 1 if the respondent was an employee or wage earner and 0 otherwise.
Employer	3.7 In your work or business last month you were...	Dummy: 1 if the respondent was an employer and 0 otherwise.
Self-employed	3.7 In your work or business last month you were...	Dummy: 1 if the respondent was self-employed and zero otherwise.
Unpaid worker	3.7 In your work or business last month you were...	Dummy: 1 if the respondent was an unpaid worker and 0 otherwise.
Inactive	Validated activity status (constructed on the basis of questions 3.5 and 3.6)	Dummy: 1 if the respondent was a student, retired, disabled or did not work, and 0 otherwise.
Saving household	4.2 "Is there any money left over after meeting your expenses, or those of your household?"	Dummy: 1 if there is always (1) or sometimes (2) money left over, and 0 otherwise.
Ability to respond to shocks	4.3. If you were faced by a financial emergency today equal to what you earn or receive in a month, could you pay that amount?	Dummy: 1 if yes (1), and 0 otherwise.
Town with at least 15,000 inhabitants	Size of home town	Dummy: 1 if the municipality has less than 15,000 inhabitants (3 and 4), and 0 otherwise.
Income from employment	3.8 How much do you earn or receive per month from your work, activity or business?	Dummy: 1 if the respondent receives income from work, and 0 otherwise.
Number of bank branches in the State	CNBV data	
Number of bank correspondents	CNBV data	

4. Statistical Appendix

Table 14
Financial savings: Balances in billions of May 2014 pesos

	IV 03	IV 04	IV 05	IV 06	IV 07	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13	I 14	Struc. % I 14
M4a	5,796	6,175	6,862	7,456	7,991	8,760	8,972	9,625	10,722	11,856	12,405	12,574	
- Bills and coins held by the public	403	438	473	527	561	605	635	678	726	773	803	766	
= Financial savings *	5,393	5,737	6,389	6,929	7,431	8,154	8,337	8,947	9,996	11,083	11,602	11,808	100.0
I. Depository institutions	2,311	2,435	2,610	2,615	2,849	3,191	3,208	3,359	3,559	3,753	3,893	3,900	33.0
Resident commercial banks (demand + term)	1,863	1,980	2,073	2,140	2,367	2,677	2,664	2,795	2,958	3,107	3,211	3,168	26.8
Demand	962	998	1,122	1,222	1,341	1,386	1,450	1,589	1,733	1,824	1,948	1,919	16.2
Term	901	982	951	918	1,027	1,291	1,213	1,207	1,225	1,283	1,263	1,249	10.6
Foreign agencies of commercial banks	50	57	59	70	94	103	87	96	113	117	100	99	0.8
Savings & Loan Associations (S&L)	14	17	20	23	25	26	56	61	64	67	81	83	0.7
Development banks	384	382	457	382	362	386	401	406	424	462	500	551	4.7
II. Securities issued by the public sector	2,303	2,382	2,804	3,301	3,508	3,604	3,773	4,184	4,945	5,820	6,139	6,334	53.6
III. Securities issued by private companies	268	297	301	336	388	377	363	376	418	412	441	442	3.7
IV. SAR outside of Siefores	511	556	615	676	685	983	993	1,028	1,075	1,098	1,130	1,131	9.6
Financial savings = I + II + III + IV	5,393	5,670	6,330	6,929	7,431	8,154	8,337	8,947	9,996	11,083	11,602	11,808	100.0
Instruments included in financial savings													
TOTAL SAR = Siefores + SAR outside of Siefores	1,126	1,253	1,441	1,650	1,765	2,127	2,324	2,573	2,759	3,063	3,160	3,189	
Siefores	614	696	826	973	1,080	1,145	1,331	1,544	1,684	1,965	2,030	2,058	
SAR outside of Siefores	511	556	615	676	685	983	993	1,028	1,075	1,098	1,130	1,131	
Financial savings without SAR total	4,268	4,418	4,889	5,279	5,665	6,027	6,013	6,374	7,238	8,020	8,443	8,619	
Debt mutual funds	473	477	610	793	913	824	943	1,152	1,154	1,288	1,293	1,317	
Real annual percentage change,%													
M4a	9.3	6.5	11.1	8.6	7.2	9.6	2.4	7.3	11.4	10.6	4.6	1.4	
- Bills and coins held by the public	9.2	8.6	8.0	11.4	6.4	7.9	4.9	6.9	7.0	6.4	3.9	-4.6	
= Financial savings *	9.3	6.4	11.4	8.4	7.2	9.7	2.2	7.3	11.7	10.9	4.7	1.8	
I. Depository institutions	5.9	5.4	7.2	0.2	9.0	12.0	0.5	4.7	6.0	5.5	3.7	0.2	
Resident commercial banks (demand + term)	7.5	6.3	4.7	3.2	10.6	13.1	-0.5	4.9	5.8	5.0	3.4	-1.3	
Demand	9.1	3.8	12.4	8.9	9.7	3.4	4.7	9.5	9.1	5.3	6.8	-1.5	
Term	5.9	9.0	-3.1	-3.5	11.9	25.7	-6.0	-0.5	1.5	4.7	-1.6	-1.1	
Foreign agencies of commercial banks	-28.4	13.4	4.4	18.3	34.7	9.0	-15.1	10.5	17.0	3.5	-14.3	-1.5	
Savings & Loan Associations (S&L)	21.5	19.4	19.0	16.6	9.3	2.4	115.8	9.3	4.3	5.5	20.5	2.3	
Development banks	4.1	-0.7	19.8	-16.4	-5.1	6.4	4.1	1.1	4.6	9.0	8.3	10.1	
II. Securities issued by the public sector	10.6	3.4	17.7	17.7	6.3	2.7	4.7	10.9	18.2	17.7	5.5	3.2	
III. Securities issued by private companies	27.9	10.7	1.2	11.7	15.4	-2.9	-3.7	3.6	11.2	-1.2	6.8	0.4	
IV. SAR outside of Siefores	11.5	8.8	10.6	9.9	1.3	43.4	1.1	3.5	4.5	2.1	2.9	0.1	
Financial savings = I + II + III + IV	9.3	5.1	11.6	9.5	7.2	9.7	2.2	7.3	11.7	10.9	4.7	1.8	
Instruments included in financial savings													
SAR TOTAL = Siefores + SAR outside of Siefores	15.5	11.3	15.1	14.5	7.0	20.5	9.3	10.7	7.2	11.0	3.2	0.9	
Siefores	19.1	13.4	18.6	17.9	11.0	6.0	16.3	16.0	9.0	16.7	3.3	1.4	
SAR outside of Siefores	11.5	8.8	10.6	9.9	1.3	43.4	1.1	3.5	4.5	2.1	2.9	0.1	
Financial savings without SAR Total	7.8	3.5	10.7	8.0	7.3	6.4	-0.2	6.0	13.6	10.8	5.3	2.1	
Debt mutual funds	2.8	0.9	27.8	30.1	15.2	-9.7	14.4	22.2	0.1	11.6	0.4	1.9	
Percentage of GDP													
Financial savings = I + II + III + IV	44.0	43.2	45.8	47.0	47.4	54.0	55.2	56.5	58.8	65.0	68.5	71.9	
I. Depository institutions	18.9	18.3	18.7	17.7	18.2	21.1	21.3	21.2	20.9	22.0	23.0	23.8	
Resident commercial banks	15.2	14.9	14.9	14.5	15.1	17.7	17.6	17.6	17.4	18.2	19.0	19.3	
Development banks	3.1	2.9	3.3	2.6	2.3	2.6	2.7	2.6	2.5	2.7	3.0	3.4	
I Rest (Agencies abroad + S&L)	0.5	0.6	0.6	0.6	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.1	
II. Securities issued by the public sector	18.8	17.9	20.1	22.4	22.4	23.9	25.0	26.4	29.1	34.1	36.3	38.6	
III. Securities issued by companies	2.2	2.2	2.2	2.3	2.5	2.5	2.4	2.4	2.5	2.4	2.6	2.7	
IV. SAR outside of Siefores	4.2	4.2	4.4	4.6	4.4	6.5	6.6	6.5	6.3	6.4	6.7	6.9	
Percentage of GDP, other concepts included in financial savings, %													
Total SAR	9.2	9.3	10.2	10.3	10.1	12.5	13.6	13.8	13.8	14.6	14.7	15.5	
Siefores	5.0	5.1	5.7	5.7	5.7	6.3	7.1	7.4	7.5	8.2	8.1	8.6	

Source: Banco de México (broad monetary aggregates) and INEGI

Table 15

Credit and Financing to the Private Sector: Balances in billions of May 2014

	IV 03	IV 04	IV 05	IV 06	IV 07	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13	I 14	Est % I 14
Total: All categories	3,729	3,983	4,212	4,324	5,087	5,735	5,442	5,571	6,488	6,676	7,315	7,214	100.0
Bank	1,085	1,124	1,276	1,600	1,962	2,102	2,010	2,102	2,372	2,566	2,750	2,731	37.9
Non-bank	2,644	2,859	2,937	2,724	3,125	3,633	3,432	3,469	4,116	4,109	4,565	4,483	62.1
Total consumer	273	374	519	657	750	709	621	624	709	794	857	850	11.8
Bank	187	264	386	528	639	597	482	481	574	662	706	703	9.7
Non-bank	85	110	133	129	110	112	139	142	135	133	151	147	2.0
Total housing	899	966	1,022	1,123	1,340	1,356	1,375	1,437	1,514	1,586	1,618	1,672	23.2
Bank	212	204	255	329	377	398	419	446	465	491	509	517	7.2
Non-bank	687	762	767	794	963	958	956	991	1,049	1,095	1,109	1,155	16.0
Total companies	2,557	2,643	2,672	2,544	2,997	3,671	3,447	3,510	4,265	4,295	4,839	4,693	65.1
Bank	685	656	635	743	946	1,107	1,109	1,174	1,333	1,413	1,535	1,511	20.9
Non-bank	1,872	1,987	2,037	1,801	2,051	2,564	2,337	2,336	2,932	2,882	3,304	3,182	44.1
Real annual percentage change, %													
Total: All categories	4.0	6.8	5.8	2.6	17.6	12.7	-5.1	2.4	16.5	2.9	9.6	9.6	
Bank	-3.7	3.7	13.4	25.4	22.6	7.1	-4.3	4.5	12.9	8.2	7.1	7.1	
Non-bank	7.5	8.1	2.7	-7.2	14.7	16.3	-5.5	1.1	18.7	-0.2	11.1	11.1	
Total consumer	17.9	37.2	38.7	26.6	14.1	-5.5	-12.4	0.4	13.7	12.1	7.9	7.1	
Bank	34.4	41.0	46.1	36.9	21.1	-6.6	-19.2	-0.2	19.2	15.4	6.6	5.9	
Non-bank	-7.2	28.9	21.0	-3.2	-14.3	1.4	24.1	2.8	-5.0	-2.0	14.2	12.9	
Total housing	5.2	7.4	5.8	9.9	19.3	1.2	1.4	4.5	5.4	4.8	2.0	4.2	
Bank	-16.2	-4.0	25.1	28.9	14.6	5.7	5.2	6.5	4.2	5.6	3.6	5.4	
Non-bank	14.2	11.0	0.6	3.6	21.3	-0.6	-0.2	3.7	5.9	4.4	1.3	3.7	
Total companies	2.3	3.4	1.1	-4.8	17.8	22.5	-6.1	1.8	21.5	0.7	12.7	12.1	
Bank	-6.6	-4.2	-3.3	17.0	27.3	17.0	0.2	5.9	13.6	6.0	8.6	8.2	
Non-bank	6.0	6.1	2.5	-11.6	13.9	25.0	-8.8	-0.1	25.5	-1.7	14.7	14.0	
Percentage of GDP, %													
Total: All categories	30.5	30.1	30.3	29.4	32.5	38.1	36.2	35.3	38.3	39.3	43.3	43.9	
Bank	8.9	8.5	9.2	10.9	12.6	14.0	13.4	13.3	14.0	15.1	16.3	16.6	
Non-bank	21.7	21.6	21.1	18.5	20.0	24.1	22.8	22.0	24.3	24.2	27.0	27.3	
Total consumer	2.2	2.8	3.7	4.5	4.8	4.7	4.1	3.9	4.2	4.7	5.1	5.2	
Bank	1.5	2.0	2.8	3.6	4.1	4.0	3.2	3.0	3.4	3.9	4.2	4.3	
Non-bank	0.7	0.8	1.0	0.9	0.7	0.7	0.9	0.9	0.8	0.8	0.9	0.9	
Total housing	7.4	7.3	7.4	7.6	8.6	9.0	9.1	9.1	8.9	9.3	9.6	10.2	
Bank	1.7	1.5	1.8	2.2	2.4	2.6	2.8	2.8	2.7	2.9	3.0	3.1	
Non-bank	5.6	5.8	5.5	5.4	6.2	6.4	6.4	6.3	6.2	6.4	6.6	7.0	
Total companies	20.9	19.9	19.2	17.3	19.2	24.4	22.9	22.2	25.2	25.3	28.7	28.5	
Bank	5.6	5.0	4.6	5.1	6.1	7.4	7.4	7.4	7.9	8.3	9.1	9.2	
Non-bank	15.3	15.0	14.7	12.3	13.1	17.0	15.5	14.8	17.3	17.0	19.6	19.3	
Infrastructure and Number of Bank Cards - Units													
ATMs	17,758	20,416	22,900	25,687	29,333	29,640	33,648	35,942	36,427	40,194	40,811	41,042	
POS terminals	146,029	160,289	201,852	305,144	418,128	446,025	446,792	482,299	523,578	556,274	626,922	619,842	
Branches*	7,768	7,788	7,972	8,404	9,230	10,722	10,731	11,291	11,785	12,407	12,581	12,686	
Number of current cards at the end of the quarter (figures in millions)													
Credit	9.4	11.6	14.7	21.4	24.8	30.7	25.8	23.9	27.6	25.9	26.9	27.0	
Debit	32.2	31.8	36.1	51.7	51.9	47.0	52.3	61.7	73.8	85.4	100.2	103.0	

Credit and Financing to the Public Sector: Balances in billions of May 2014

	IV 03	IV 04	IV 05	IV 06	IV 07	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13*	I 14*	Est % I 14
Commercial bank credit	383	303	304	225	224	192	318	353	370	409	405	409	4.9
Federal government	280	123	77	42	39	27	38	49	39	14	30	29	0.3
States and Municipalities	39	77	85	73	84	106	164	214	230	287	287	283	3.4
Decentralized gov't agen.	64	103	142	111	101	59	116	90	101	109	89	97	1.2
Development bank credit	180	179	185	173	167	172	134	140	135	156	169	168	2.0
Federal government	92	93	106	89	106	109	55	60	27	34	33	33	0.4
States and Municipalities	16	36	34	36	36	31	47	53	85	105	123	123	1.5
Decentralized gov't agen.	72	50	45	49	25	31	32	27	23	18	12	12	0.1
Debt issued in the country	2,524	2,695	3,092	3,601	3,872	4,054	4,409	4,632	5,338	5,870	6,446	6,600	78.6
Federal government	1,459	1,507	1,646	2,117	2,334	2,466	2,802	2,881	3,133	3,418	3,765	3,947	47.0
States and Municipalities	21	29	30	49	58	63	65	67	72	74	87	87	1.0
Decentralized gov't agen.	23	69	143	179	169	157	169	208	260	268	347	360	4.3
IPAB	471	555	693	800	896	884	898	880	909	896	909	905	10.8
Banco de Mexico	354	338	364	232	235	305	292	415	783	1,032	1,158	1,119	13.3
FARAC	195	197	216	224	179	180	182	181	181	182	181	183	2.2
External financing	1,201	1,148	1,010	722	692	821	1,088	1,171	1,305	1,235	1,204	1,218	14.5
Credit and financing TOTAL	4,287	4,324	4,591	4,721	4,954	5,240	5,949	6,296	7,148	7,669	8,224	8,395	100.0

Real annual percentage change in the balance, %

	IV 03	IV 04	IV 05	IV 06	IV 07	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13*	I 14*	
Commercial bank credit	-1.7	-21.0	0.4	-25.8	-0.8	-14.0	65.3	11.2	4.8	10.5	-0.8	0.8	
Federal government	-11.7	-56.0	-37.4	-46.0	-7.2	-30.1	41.5	27.0	-20.2	-64.9	119.8	-4.3	
States and Municipalities	64.6	96.1	10.6	-14.4	15.4	26.6	54.0	31.0	7.4	24.5	0.1	-1.3	
Decentralized gov't agen.	30.9	60.4	38.1	-21.8	-9.1	-41.6	96.5	-22.1	12.0	7.4	-18.4	9.2	
Development bank credit	-18.7	-0.6	3.4	-6.3	-3.5	3.0	-22.1	4.5	-3.3	15.4	7.9	-0.7	
Federal government	-24.0	0.7	14.3	-16.2	19.2	3.5	-50.1	9.7	-54.3	22.9	-2.2	-0.2	
States and Municipalities	4.1	128.4	-4.4	4.9	1.2	-13.2	50.3	12.8	59.2	23.3	18.1	-0.3	
Decentralized gov't agen.	-15.3	-30.1	-11.4	8.7	-48.4	24.5	3.4	-16.4	-13.7	-22.2	-32.1	-5.8	
Debt issued in the country	14.5	6.8	14.8	16.4	7.5	4.7	8.8	5.1	15.2	10.0	9.8	2.4	
Federal government	15.9	3.3	9.3	28.6	10.2	5.7	13.7	2.8	8.7	9.1	10.1	4.8	
States and Municipalities	147.6	37.7	0.8	65.7	18.1	8.5	3.6	2.9	8.0	2.8	16.9	-0.3	
Decentralized gov't agen.		200.6	107.1	24.8	-5.4	-7.3	8.1	22.5	25.1	3.0	29.5	3.8	
IPAB	28.7	17.8	25.0	15.5	12.0	-1.4	1.6	-2.1	3.3	-1.4	1.5	-0.4	
Banco de Mexico	-14.1	-4.7	7.9	-36.4	1.6	29.5	-4.2	42.0	88.9	31.8	12.2	-3.3	
FARAC	23.3	0.7	9.6	3.8	-19.9	0.3	1.0	-0.1	-0.2	0.4	-0.2	0.8	
External financing	13.2	-4.4	-12.0	-28.5	-4.1	18.7	32.5	7.6	11.4	-5.4	-2.5	1.2	
Credit and financing TOTAL	10.6	0.9	6.2	2.8	4.9	5.8	13.5	5.8	13.5	7.3	7.2	2.1	

Credit and Financing: Percentage of GDP, %

	IV 03	IV 04	IV 05	IV 06	IV 07	IV 08	IV 09	IV 10	IV 11	IV 12	IV 13*	I 14*	
Commercial bank credit	3.1	2.3	2.2	1.5	1.4	1.3	2.1	2.2	2.2	2.4	2.4	2.5	
Federal government	2.3	0.9	0.6	0.3	0.2	0.2	0.3	0.3	0.2	0.1	0.2	0.2	
States and Municipalities	0.3	0.6	0.6	0.5	0.5	0.7	1.1	1.4	1.4	1.7	1.7	1.7	
Decentralized gov't agen.	0.5	0.8	1.0	0.8	0.6	0.4	0.8	0.6	0.6	0.6	0.5	0.6	
Development bank credit	1.5	1.3	1.3	1.2	1.1	1.1	0.9	0.9	0.8	0.9	1.0	1.0	
Federal government	0.8	0.7	0.8	0.6	0.7	0.7	0.4	0.4	0.2	0.2	0.2	0.2	
States and Municipalities	0.1	0.3	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.6	0.7	0.7	
Decentralized gov't agen.	0.6	0.4	0.3	0.3	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	
Debt issued in the country	20.7	20.3	22.3	24.5	24.8	26.9	29.3	29.3	31.5	34.5	38.2	40.1	
Federal government	12.0	11.4	11.8	14.4	14.9	16.4	18.6	18.2	18.5	20.1	22.3	24.0	
States and Municipalities	0.2	0.2	0.2	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	
Decentralized gov't agen.	0.2	0.5	1.0	1.2	1.1	1.0	1.1	1.3	1.5	1.6	2.1	2.2	
IPAB	3.9	4.2	5.0	5.4	5.7	5.9	6.0	5.6	5.4	5.3	5.4	5.5	
Banco de Mexico	2.9	2.5	2.6	1.6	1.5	2.0	1.9	2.6	4.6	6.1	6.9	6.8	
FARAC	1.6	1.5	1.6	1.5	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.1	
External financing	9.8	8.7	7.3	4.9	4.4	5.5	7.2	7.4	7.7	7.3	7.1	7.4	
Credit and financing TOTAL	35.1	32.6	33.0	32.1	31.7	34.8	39.5	39.9	42.2	45.1	48.7	51.0	

* Preliminar data subject to revision
Source: Banco de México for Credit and Financing to the Private Sector data; CNBV for Credit and Financing to the Public Sector; and INEGI GDP data

5. Main Reforms to the Legal Framework and Secondary Regulation Applicable to Banks

Table 16

Main Reforms to the Legal Framework and Secondary Regulation Applicable to Banks: First Half 2014

Subject	Scope of the Reform	Publication in the OGF*
1. RESOLUTION MODIFYING THE GENERAL RULES ON APPLICABLE TO BANKS	Extension for deadline (to 30 June) for banks to adjust their processes in order to comply with the rules on electronic banking through ATMs and POS terminals.	7 January 2014
2. RESOLUTION MODIFYING THE GENERAL RULES APPLICABLE TO BANKS, PUBLISHED ON 24 JUNE 2013.	Extension of deadline for banks starting operations in 2013 to constitute provisions for their commercial loan portfolio, in compliance with the new rating methodology for this portfolio.	31 January 2014
3. RESOLUTION THAT ESTABLISHES THE MARKET RISK WEIGHTS WHICH BANKS MUST APPLY IN 2014.	Annual risk weight adjustment.	19 February 2014
4. GENERAL RULES APPLICABLE TO PAYMENT MEANS NETWORKS	Regulations issued jointly by the CNBV and Banco de México setting out the regulatory framework for payment means networks (Redes de Medios de Disposición) in general, and credit and debit card networks in particular. Rules arising from the Financial Reform.	11 March 2014
5. RESOLUTION MODIFYING THE GENERAL RULES APPLICABLE TO BANKS.	Introduction of specific loan rating methodologies for national development finance programmes, as well as for those set up for dealing with emergencies or natural disasters. There are adjustments to the systems of rating in order to comply with legal changes to insolvency procedures, particularly in the loss severity in the case of loans taken out to fund insolvency proceedings authorised by the mediator or receiver or, if applicable, loans that are essential in order to keep up the company's ordinary operations and liquidity necessary during the insolvency procedures. Rules arising from the Financial Reform.	26 March 2014
6. RESOLUTION MODIFYING THE GENERAL RULES APPLICABLE TO STOCKBROKERS' AND BANKS' INVESTMENT SERVICES	Numerous adjustments to the rules with the aim of adapting and aligning them to the changes to the Securities Law in the Financial Reform. In particular, the requirement to have a client profile when non-assessed investment services are provided has been suppressed; there are details about the powers of the steering committee analysing financial products; the CNBV will also be responsible for supervising investment advisors, among others.	28 March 2014
7. GUIDELINES FOR DISCLOSURE OF SANCTIONS IMPOSED BY THE NATIONAL BANKING & SECURITIES COMMISSION (CNBV).	As part of the market discipline imposed by the Financial Reform, it establishes the procedure to be used by the CNBV in publishing on its webpage the sanctions imposed on financial entities and individuals under its supervision. The information to be published includes the name of the offender, the sanction imposed, a description of the offence, date the sanction was applied, as well as the current status of the matter.	9 April 2014
8. RESOLUTION THAT REFORMS, SUPPLEMENTS AND STRIKES DOWN GENERAL RULES REFERRING TO ARTICLE 115 OF THE BANKING LAW.	Numerous changes to the AML/CTF rules, including: extension of the system to correct the omission of trust in the Client and User definitions; introduction of the "Blocked Persons List" provided for in the changes to article 115 of the Banking Law, resulting from the Financial Reform; inclusion of cashier's cheques within the scope of the regulations, and setting up of a system to notify the Secretariat of Finance (SHCP) in the event of information exchange between financial institutions in the context of AML/CFT.	25 April 2014
9. RESOLUTION MODIFYING THE GENERAL RULES APPLICABLE TO BANKS	Stemming from the Financial Reform and from the review of the responsibilities of the Secretariat of Civil Service (Secretaría de la Función Pública) regarding the supervision of development banks, adjustments have been made to the rules on internal audit. The changes standardise the treatment of this function between development and commercial banks.	12 May 2014
10. RESOLUTION MODIFYING THE REGULATIONS TO WHICH MARKET PARTICIPANTS ARE SUBJECT IN DERIVATIVE CONTRACTS LISTED ON THE STOCK EXCHANGE	Regulation issued jointly by the Secretariat of Finance (SHCP), the central bank and the Banking and Securities Commission (CNBV), which regulates, inter alia, how the derivatives clearing houses clear and settle standardised derivative operations conducted either on stock exchanges or through electronic platforms, and which allows for derivative clearing houses to specialise in operations through electronic trading platforms. Provision is made for clearing houses to offer "information repository" services for derivatives, whether they clear them themselves or not, which will result in greater information and transparency.	15 May 2014

Table 16 (cont.)
Main Reforms to the Legal Framework and Secondary Regulation Applicable to Banks: First Half 2014

Subject	Scope of the Reform	Publication in the OGF*
11. RESOLUTION WHICH MODIFIES THE GENERAL RULES APPLICABLE TO BANKS.	Adjustments to multiple regulatory CNBV regimes: changes to the comprehensive risk management system and to the liquidity risk system in particular; inclusion of a business continuity regime; introduction of a loan rating system for home refurbishments or improvements, underwritten by the workers' housing payroll contributions; adjustments to how e-banking services are contracted; minor adjustments to banks security rules regarding video surveillance; addition of tax payment transactions to the bank agents regime; as well as changes to regulatory capital integration.	19 May 2014
12. RESOLUTION MODIFYING THE GENERAL RULES FOR THE COMPILATION OF FILES CONTAINING INFORMATION SHOWING COMPLIANCE WITH FIT AND PROPER REQUIREMENTS APPLICABLE TO PEOPLE WITH JOBS, RESPONSIBILITIES OR COMMISSIONS IN FINANCIAL INSTITUTIONS.	Also stemming from the financial reform, it make several changes to the regime, the most important of which is the broadening of their scope to include Credit Unions; there are also minor adjustments like the substitution of the "good public reputation" criterion with that of "moral solvency", among others.	10 June 2014
13. RESOLUTION MODIFYING GUIDELINES FOR PUBLISHING SANCTIONS IMPOSED BY THE NATIONAL BNAKING AND SECURITIES COMMISSION (CNBV)	A correction to the rules issued on April 9th 2014, in order to enable the CNBV to publish at any time sanctions it has imposed, without it being obligatory to do so on the 15th of the month following the occurrence of the sanction.	10 June 2014
14. RESOLUTION MODIFYING THE GENERAL RULES APPLICABLE TO STOCKBROKERS' AND BANKS' INVESTMENT SERVICES.	In order that the regulated parties can fully comply with the rules, the date on which the majority of them come into force has been postponed from June 30th 2014 to September 30th 2014.	30 June 2014

* OGF: Official Gazette of the Federation

6. Special Topics Included in Previous Issues

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