BBVA Bancomer

Mexico Watch

Economic Research Department

Fourth Quarter 2009

Mexico overcomes the global crisis

The central bank, with maneuvering room in monetary policy

Fiscal reform, still some way to go

Toward 3% GDP growth in 2010, with the challenge of increasing the capacity for growth

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Editorial and Executive Summary

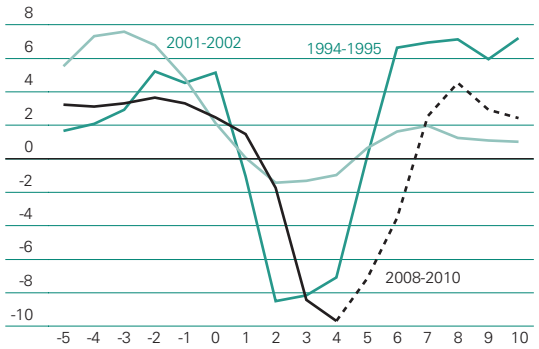
The Mexican economy grew in the third quarter of 2009 following a year of continuous declines that reduced the country's GDP by almost 10%, a more severe adjustment than in the historical recession of 1995. Yet this perfect storm of the collapse of international trade, financial risk aversion in the emerging markets, and the health contingency has not sunk the ship of the Mexican economy. There has not been a balance of payments crisis, the depreciation of the peso has not been out of control—in fact, it has experienced a gradual recovery now that the worst moments of the crisis have passed and, in fact, the weak peso has helped the export sector—, nor have interest rates risen to defend the currency—on the contrary, the central bank has implemented a policy consistent with the environment of weakened activity—. There has also been no inflationary shock, or a collapse of salaries' purchasing power and, of course, there has been no bank rescue program or bankruptcies.

The crisis has tested the capacity of the Mexican economy to function in an adverse environment and it has made clear the benefits of an orthodox and credible design of fiscal, demand, and monetary policies. Without the decrease in the public debt of the past few years or the independence and credibility of the central bank in seeking price stability it would not have been possible to achieve either a decrease of more than 300 basis points in rates in just six months or an increase in demand to mitigate the impact of the crisis through public investment programs additional to what had been initially budgeted.

But it is also necessary to point to the strengthening of the private sector of the economy and the improvement in its external competitiveness, at least in those sectors that attract the most investment, which implies greater availability of capital and better business processes. The fact is, as shown in this publication, that those manufacturing sectors in which the growth of foreign investment is most intense are those that have most improved their penetration of the U.S. market.

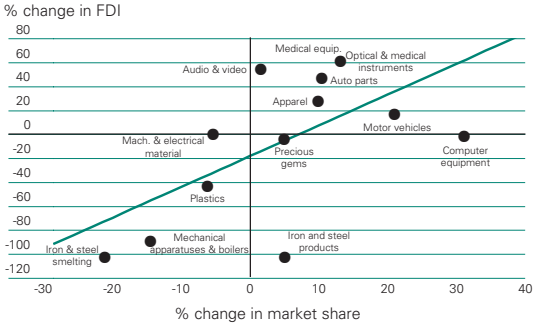
A second element that has provided a favorable surprise in the current period is the resilience of employment, with less intense declines than would have been predictable given the scope of the drop in economic activity. This has occurred both in formal and private sector employment, which represents a third of the total, as well as in the Mexican labor market as a whole. However, this resilience of employment, consistent with a scenario of a crisis that has not destroyed the country's financial system nor its spending capacity, has not altered what has been a hindrance to the Mexican economy, namely, the behavior of the informal labor market. As in previous adjustments, the informal market acts as a reserve labor market, an alternative to the formal market. This raises some of the pending challenges of the Mexican economy, specifically, to achieve a higher proportion of more productive jobs, reducing the weight of unstable and lower paid jobs. Thus, in the past decade there has practically been no change in the relative weight of informal activity in relation to total employment, with variations occurring that are linked to the

Mexico, Economic Growth
Annual % change, GDP



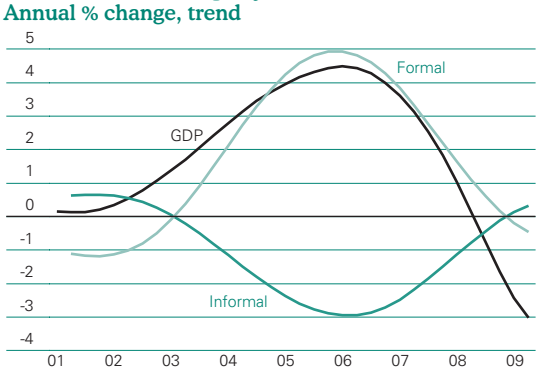
Note: 0 = maximum cycle of the GDP level
Source: BBVA Bancomer

Competitiveness and Investment
Share of the U.S. importing market and foreign direct investment, annual % change



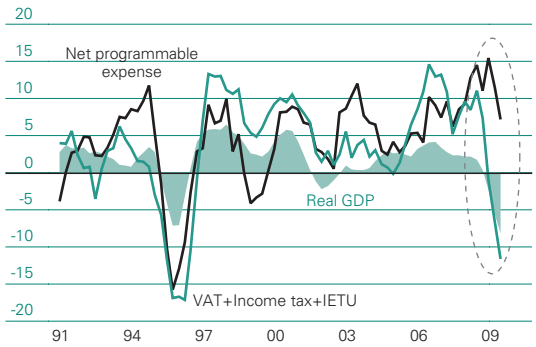
Source: BBVA Bancomer with Economy Ministry and US Census Bureau data

Growth and Employment
Annual % change, trend



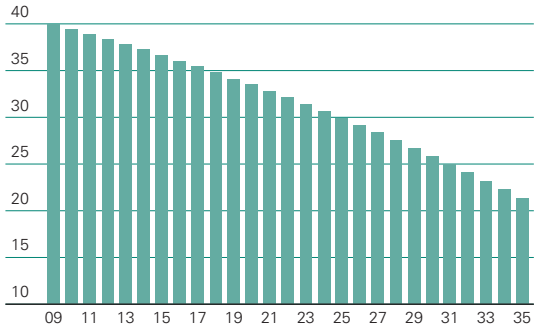
Source: BBVA Bancomer

Economic Activity and Tax Collection
GDP, VAT+Income tax+IETU; annual % change, 4QMA



Source: BBVA Bancomer with Finance Ministry and INEGI data

Public Debt as % of GDP
"Inertial" Economic Scenario



Source: BBVA Bancomer

economic cycle, to the nature of the informal market as an alternative in unfavorable economic periods.

Thus, if the worst has passed for the Mexican economy in terms of the global economic scenario in which it operates, what is also certain is that the challenges that it faces remain ahead of us, without in the past few months being able to say that we have seen in practice that some of the measures included in the government's ambitious agenda have been decisively fulfilled.

The crisis has shown the need to redesign the bases of the current fiscal policy. This policy is based on an annual balanced budget in order to have credibility with regard to creditors, but at the same time with a design that provides for a low tax collection level given the excessive dependence on oil revenues in a waning industry and the relatively reduced tax base both due to the size of the informal economy as well as a tax system full of exemptions and ad hoc schemas. This plan demands public spending without automatic stabilizers —unemployment compensation, for example—and a relatively low level of expenditures, which ends up not very well fulfilling its role as a provider of public goods and services—security, justice, education, health-care, infrastructure—and as a re-distributor of income through social spending. This does not mean that at the present time public finances are unsustainable. Precisely due to the orthodoxy of previous years, the government has been able to implement a minimum counter-cyclical policy. As shown in this publication, even under conservative hypothesis of the long-term evolution of economic growth, interest rates and the demandable annual fiscal balance, the road to a decrease in the public debt could continue without problems, beyond short-term fluctuations tied to the exchange rate, for example. But this is independent of the consideration that under the current schema, achieving debt sustainability could involve halting economic growth given the sub- optimal role of public finances.

As we go to press, Congress is deliberating on the 2010 Budget. This is especially important given that the rating of the Mexican debt, within the investment grade category, depends to a large extent on what is finally approved. The Revenue Law has already been approved, which although it represents a step in the right direction in terms of increasing non-oil tax revenue, goes only part of the way in what was proposed in the executive branch's initial bill and does not take on the challenge of generalizing tax policies without discriminatory elements and special exemptions. In terms of its impact on inflation and growth, it will be undoubtedly limited in intensity and duration given the experience of previous modifications in tax policies, and in any event it cannot be an excuse for not implementing changes.

All in all, the inflationary impact of the fiscal reform poses an additional challenge for the implementation of monetary policy since even though inflation in 2010 will, in any event, be below the 2009 annual average, its evolution in the course of the year will be on the upside from the minimum level that will be registered at the end of 2009. Banco de Mexico has already been expanding its maneuvering room in setting the funding rate through the changes introduced in its most recent communications, eliminating the temporary reference to achieving the goal of price stability and pointing to the huge gap

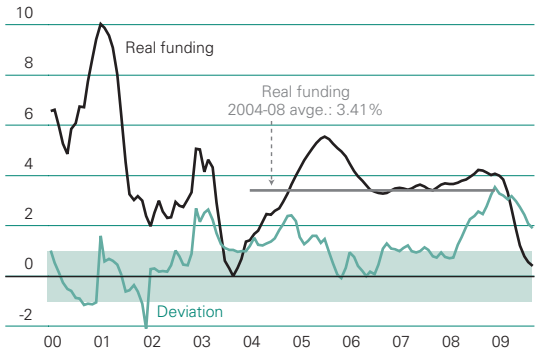
between GDP and available productive capacity. This leads us to think that the current monetary pause will remain in effect in 2010 beyond what has been factored in by the markets, which expect rate increases as of mid-year. The central bank will remain very attentive to the evolution of all the inflationary expectation indicators —wages, surveys, indexed bonds— in order to revise its rate policies. In this sense, as is shown in this publication, Banco de Mexico manages its monetary policy not only so that it takes into consideration the deviation of inflation from its target and the GDP gap, but also the scope of those differences, so that if they are too large and point to the possibility of an especially adverse scenario, the implementation of the interest rate policy will be more flexible, with a clearly preventive orientation.

But the necessary fiscal reform, although important, probably will not in and of itself be sufficient as a factor that could substantially boost the growth of the Mexican economy in the long term. As illustrated in this publication, the lower relative growth that Mexico secularly posts in relation to other economies is related less with the availability of productive factors, basically capital and employment, than with the efficiency in their combination, certainly with a wide margin for improvement. Furthermore, there is a consensus that without it being possible to determine how much growth capacity a given reform would provide, it would appear that periods in which a continuous, broad, and decisive process of changes aimed at strengthening the role of competition and the free play of prices as a mechanism for market adjustment, best improves efficiency in the use of the productive factors.

The medium-term challenge is to increase the economy's capacity for growth so that a leap occurs in per capita income both as a result of gains in productivity as well as for being more efficient. Examples would be a greater capacity to generate employment opportunities for those who each year will enter the labor market. This is only possible with reforms on the supply side, in terms of the creation of greater competition and a better regulation of product markets and the productive factors. This definitely involves measures that often have costs and affect interest groups in the short term, but provide generalized benefits in the long term for the economy as a whole.

Real Funding and Deviation of Inflation from the Central Bank Target

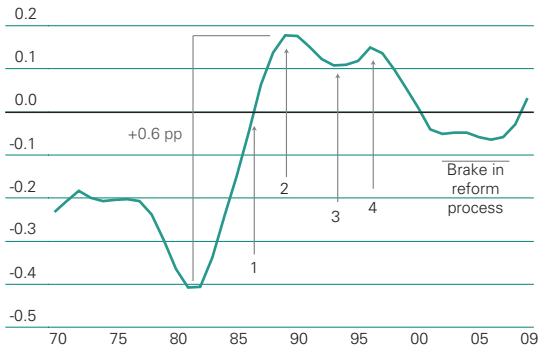
%, expost, 3MMA and pp



Note: Banco de México inflation target: 10.0% in 2000, 6.5% in 2001, 4.5% in 2002, 3.0% +/- 1pp since 2003
Source: BBVA Bancomer with Banco de México data

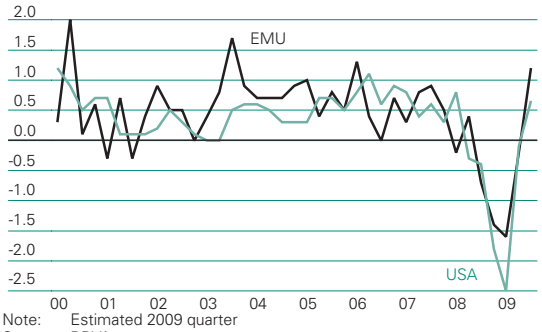
Economic Efficiency and Reforms

Change in TFP contribution to growth, pp



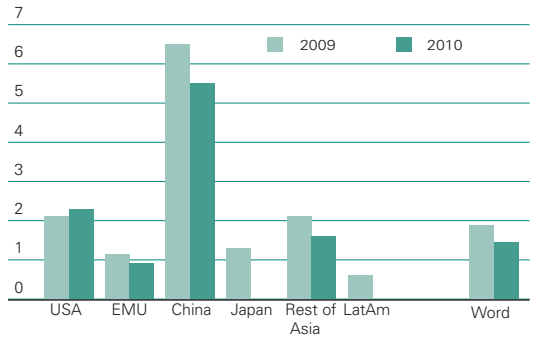
TFP Total Factor Productivity, non-explained growth by the available amount of capital and employment
1 Sectorial deregulation (end of 1980s). Fiscal reform, start of the VAT (1980). Unilateral reduction in GATT tariffs (1988)
2 Promotion to markets: Privatization (telecoms in 1990). Sectorial opening to FDI (foreign direct investment) and deregulation (1991, 1993). Flexible foreign-exchange regime (1994). Bank privatization (1991, 1995, 1998) Federal Competition Law (1992).
3 NAFTA (1994)
4 Pension system (1997)
Source: BBVA Bancomer

GDP Growth
Quarterly % change



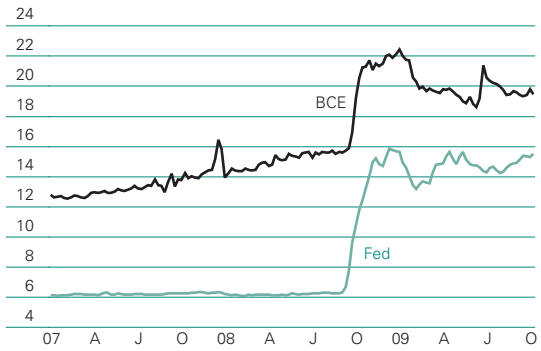
Note: Estimated 2009 quarter
Source: BBVA

Fiscal Stimulus Programs: Size
% of GDP



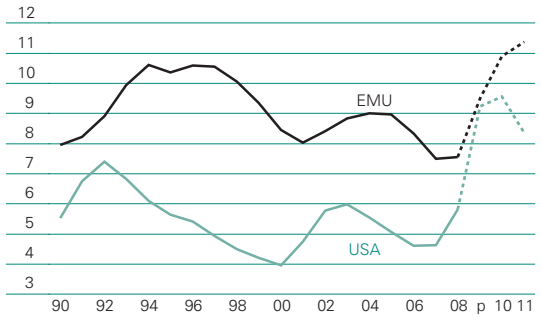
Source: BBVA

Central Banks: Total Assets
% of GDP



Source: BBVA with Datastream data

Unemployment Rate
% of active population



p forecast as of 2009
Source: BBVA

The world economic outlook improves....

Since the publication of the last Mexico Watch last June, the global economic scenario has undergone a recovery. The feeling of a free fall of most economies that had taken hold since the end of 2008 has given way to a situation of relative stability and, in some cases, of moderate growth.

The change in trend operating since then has been boosted by the exceptional public stimulus measures taken by most of the economies. These measures are framed both in the monetary front—with substantial reductions of the types of intervention, massive injections of liquidity and unconventional operations with assets, the launching of which has allowed the partial reestablishment of liquidity conditions—, such as in the fiscal and budgetary front—--with ambitious fiscal stimulus public packages that have provided a boost to specific sectors, such as for example the automobile industry and the temporary maintenance of the rents and the expenses of private agents—.

.....although in the short term the downward risks are still latent, particularly in the more advanced economies.

The fundamentals of the world economic situation continue to be fragile, and, therefore, the downward risks are still fully in force. Thus, the main risk now being faced by the global recovery is a probable premature withdrawal of the stimulus plans, particularly in the more advanced economies and the uncertainty regarding whether private spending could substitute public spending as the main vector of the recovery. This affirmation is supported by the fact that, as opposed to what has occurred in the emerging economies, in the developed countries, the growth pattern during the expansive phase is characterized by a strong boost in domestic demand supported not only by the available income of participants but also by the need to later resort quite markedly to indebtedness by private agents, something that would not have the same importance in playing the lead role in this new phase of the cycle. In addition, the performance of employment does not seem to be contributing to a quick way out of the crisis, inasmuch as the employment destruction rate continues to be still very high in many economies.

Because of this, the greatest challenge that the economic policy is currently facing is the appropriate implementation in time and term of the withdrawal of the public, fiscal and monetary support programs. Thus, the premature withdrawal of the stimuli, very particularly of the latter programs, would run the risk of being able to reactivate the economic contraction process observed in the last four months of 2008. At the same time, progress must be made in the design and communication of feasible exit strategies.

In this situation, the most probable scenario would point towards maintaining the official rates low for a prolonged period of time, since it does not seem that there will be a relevant upturn in inflation within a context of high available productive capacity. However, maintaining the stimuli over time could have, in turn, harmful consequences when it distorts, first, the incentives of participants to make adjustment decisions of their balances that cannot be postponed indefinitely and, second, when questioning the sustainability of the public accounts of many economies.

Due to all of this, the monetary and fiscal authorities should be mindful of the current balance of risks, being that one premature or badly designed step relative to the support of the public policies could seriously place in doubt the continuity of the recovery. In this sense, it seems probable that the central banks will gradually try possible alternatives so as to normalize, when the time comes, their liquidity policies. Thus, it will be especially important that the communication made by the monetary authorities clearly separate the design of the exit strategies at the moment of their application, which should be postponed until the economy has resumed more stable growth under sounder bases.

Nevertheless, progress in the financial markets has been substantial in recent months. Tension has been declining progressively since the maximums were reached following the fall of Lehman. However, the current situation is far from being fully satisfactory, since the tension levels in the market are still far from the pre-crisis levels. The greatest progress to date has been produced, however, on the Inter-bank markets. Thus, the three-month OIS spread in the U.S. and in the European Monetary Unit (EMU) is currently at its lowest since over a year and a half ago. Nevertheless, the evolution in said markets continues to be very dependent on the massive injections of liquidity by the central banks, which is why a premature withdrawal of the monetary stimuli could antedate part of the prior improvement.

At the same time, the reduction of the risk premiums has been extraordinarily quick in recent months. Thus, U.S. bank CDs[1] in October reached their lowest level since the explosion of the crisis, while European CDs stood at their lowest level since a year ago. Nevertheless, since the beginning of the summer, the downward correction has stabilized. Caution seems to have prevailed in most of the markets (also in those of equity funds, with relatively modest revaluations since July) within a context where the strength and sustainability of the economic recovery at a global level is still difficult to gage and a historically high aversion to risk prevails.

1 *Credit Default Swap* or agreement of risk coverage of a financial certificate.

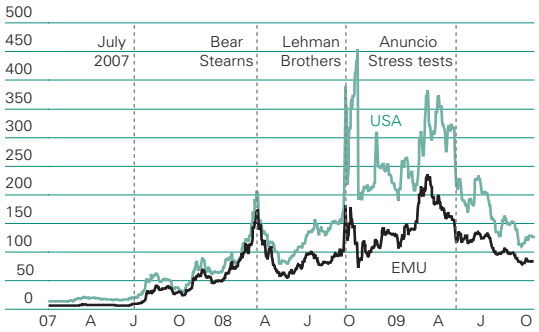
Financial Tensions Indicator
Index January 2007 = 100

Note: First principal normalized components of the OIS spread series, implicit volatility of the U.S. Stock Exchange. Bank CDs and Corporate CDs
Source: BBVA

Inter-Bank Markets: 3-month OIS Spread
3M Libor - 3M OIS

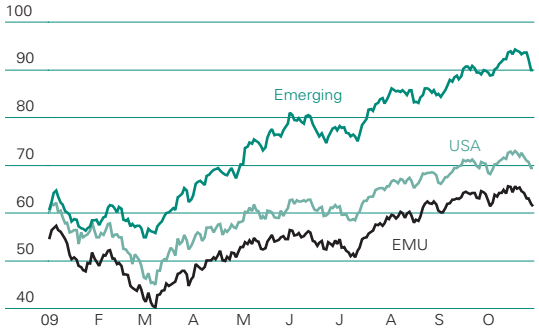
Source: BBVA with Bloomberg data

Banks: Risk Premium
5-year CDs in bp



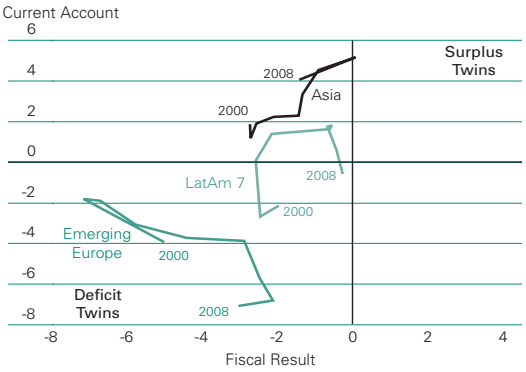
Source: BBVA with Bloomberg data

Stock Markets
July 2007 Index = 100



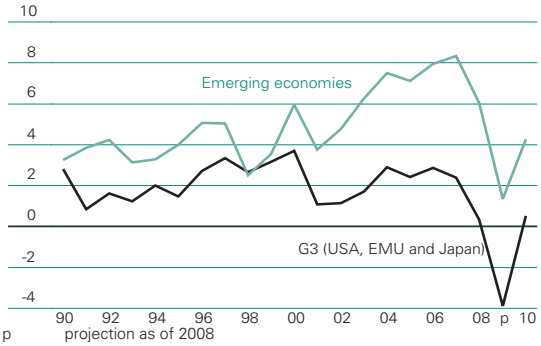
Source: BBVA with Bloomberg and MSCI data

Evolution of the Current Account and Fiscal Result 2000-2008
% of GDP



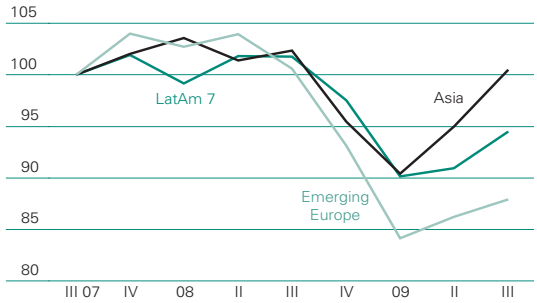
LatAm 7: Brazil, Chile, Colombia, Peru, Mexico and Venezuela
Europe: Poland, Hungary, Czech Republic, Slovakia, Estonia, Letonia
Emer: Lithuania, Bulgaria, Romania, Turkey, Ukraine
Asia: China, Hong Kong, India Indonesia, Korea, Philippines, Singapore, Taiwan, Thailand
Source: BBVA with WEO and IIF data

GDP Growth
Annual % change



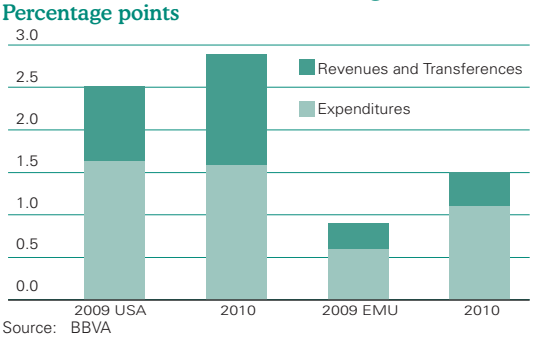
p projection as of 2008
Source: BBVA

Industrial Production; Index 3Q 07
Latin America, Emerging Europe



Source: BBVA with Bloomberg data

Contribution to GDP Growth of the Fiscal Stimulus Packages
Percentage points



Source: BBVA

The emerging economies, a new driving force for global growth,...

Economic recovery emerges, although in a very heterogeneous way. In general terms, the emerging economies are on a more solid road to recovery than the developed countries This is due to a series of differentiating factors that have allowed the greater part of these economies (with the exception of the countries of Emerging Europe) to more easily avoid the loan markets that are becoming more expensive and deal with the contraction in activity and employment. In particular, their lower exposure to the financial crisis, particularly in its initial compasses; the success of the fiscal and monetary stimulus programs launched after the outburst of the crisis; the rise in raw material prices in these recent months; the recovery in world trade following the collapse suffered at the end of 2008; and,. perhaps, what is perhaps most important for the sustainability of their long-term growth, the prior efforts, in many of these countries, to foster and practice a policy of macroeconomic stability. Due to all of this, it is expected that, going forward, the gap will be wider in terms of growth among the emerging economies and the more developed ones in favor of the former.

As regards the developed economies, that of the U.S. seems to be better positioned than those of Europe, for a faster resolution of the crisis, given the more decisive measures that have been taken, particularly in the financial and banking environment. Also, the fiscal boost in the U.S. will have a more significant impact on growth in the coming years. Thus, in 2010, it is estimated that it will reach three percentage points (3 pp) in contrast to the 1.5 pp in Europe. However, the most probable scenario for the U.S. economy is one of moderate growth going forward, since there is no certainty that, once the public stimulus ends, the private sector will once again resume a course of sustained growth, and the risks of a renewed drop have diminished sufficiently for issues such as unemployment or the public accounts to stop being an evident concern.

As regards Europe, the fiscal boost will be comparatively lower in 2010, as well as heterogeneous among countries, and maintains a less decisive attitude in face of the resolution of the financial crisis. The recovery of activity will also be postponed due to the greater rigidity of the European labor market (which supposes more prolonged impacts on employment), as well as due to potentially lower growth than that of the U.S.

Among the emerging countries, signs of a recovery of activity are already clear, although the pattern presents some outstanding differences. China resumed very high growth rates in the last quarter (7.9% y/y), in part justified by a very quick rise in loans and other stimulus measures. In Latin America, most of the countries are showing signs of positive growth as of the third quarter, although these positive trends should still delve deeper in 2010. However, the situation In the European emerging economies presents more risks, where there are cases, where countries,

highly affected by the crisis and its impact on the mortgage segment, have adopted heterodox financial policies.

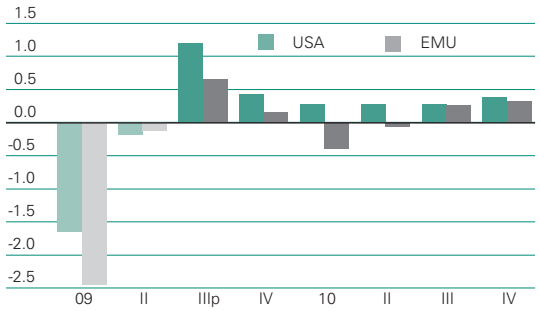
…although the challenge of correcting the global disequilibrium continues to be present

In general terms, maintaining a long-term sustainable growth pattern will depend to a large extent on a re-equilibrium of strength on a global scale that will allow the alteration of savings and investment patterns observed up to now among the advanced and emerging economies, the result of which was the appearance of marked macroeconomic imbalances at a world level. This would lead to a greater expenditure in those economies with current account surpluses (fundamentally, the Asian), of which the growth in recent years has been based on a model guided by a depreciated exchange rate, which stimulates exports and the accumulation of foreign currencies due to precautionary motives. In turn, these economies maintain a high savings rate which reduces domestic demand.

In view of the difficulty that consumption in the advanced economies will once again be the main contributor to global growth, given the need that in the U.S. its growth be re-directed toward a higher share of savings in the GDP and with greater support of exports, the composition in global demand should operate to obtain a more balanced long-term world economy. This imposes a series of challenges for the different economies, where countries like China with a prominent external surplus should increase their consumption. Also, a brusque misalignment of currencies should be avoided within a context marked by high volatility in currency exchange.

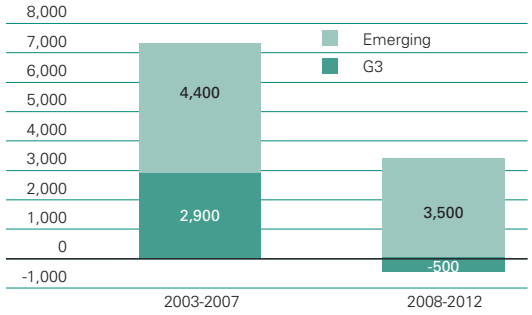
Also, in the medium term, it will be necessary to launch credible plans for fiscal consolidation in order to avoid that public spending drive out private demand in countries that have been seen to be disposed to increasing their deficits. Once again, the design of these plans does not necessarily have to coincide with the moment of their application.

GDP Growth
Quarterly % Change



p projection as of 3Q09
Source: BBVA

Change in Demand*
Billions at 2008 prices



* Private Consumption + gross investment
Source: BBVA

The Worst is Over, the Mexican Economy is Recovering and Growing Since the 3Q09

In the third quarter of 2009 Mexico grew between 2% and 3%, the first quarterly rise in GDP after a year of drops that reduced activity by 10%. The changes in global financing and demand conditions are behind this adjustment and of the recovery in the Mexican economy very much open to the exterior and specialized in manufacturing production.

Financing conditions are going back to normal and global demand is recovering after its exceptional evolution at the end of 2008 and the beginning of 2009.

Since the second half of 2008 three shocks have had an impact on the Mexican economy leading it to make the greatest adjustment in the last 15 years: on the one hand, the tensioning of financing conditions in the economy relative to a greater global aversion to risk; on the other, the United States, which receives 80% of Mexican exports registered an unprecedented collapse in its imports; and finally, added to the adverse effect of foreign trade was the negative impact of the outbreak of the AH1N1 flu last April and May[1].

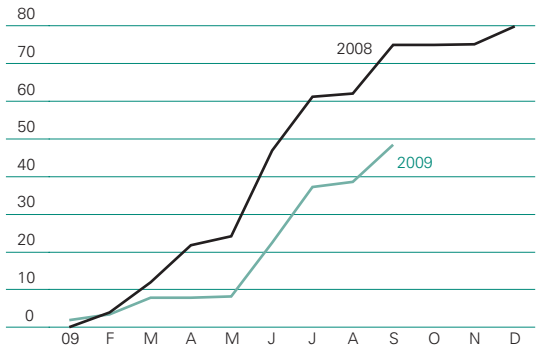
The favorable performance of the financial variables on a global level has been reflected in Mexico, both due to the financing costs of the sovereign debt and of the private business sector. For example, not only does the country risk spread (measured both by the EMBI+ and 5-year CDs) show a sensitive improvement as of March, but it is also shown by the corporate debt spreads, which present a drop compared to the levels reached in the period of most accentuated aversion to risk following the Lehman Brothers bankruptcy. In fact, the current level of the spread on no-risk assets—government securities—of private debt with a good rating (ie. AAA-AA) is already at around 50 bp. The spread of private paper with a low rating has also diminished. However, the descending trend in the implicit risk that reflects this spread had an inflexion in August, and in September it continued to rise. thereby widening the spread compared with the better rated paper. This suggests that in a first stage, all higher risk financial assets were strongly benefited by the greater appetite for risk on the markets, but that we could be starting another stage in which all assets will continue to be benefited by the enormous liquidity on the markets, although differentiation will be a relevant factor.

For the average of private paper issues, the best context of the markets has implied better issuing conditions. Even if the average term for short-term instruments barely shows an upward trend as of the end of August, the surcharge that these have to pay relative to government paper has shown a descending trend throughout the year and has intensified as of May. After that month, private medium- and long-term debt placements show a

Mexico: Corporate Debt Spreads
Basis points

Source: BBVA Bancomer with Banco de Mexico data

Mexico: Accrued Medium-and Long-Term Corporate Debt Issues
Billions of Pesos



Source: BBVA Bancomer

Mexico: Bond Holdings by Foreigners
Billions of Pesos

Source: BBVA Bancomer with Banco de Mexico data

1 For further details, refer to SEE BBVA, "Mexico Watch", second quarter of 2009, available at: http://serviciodeestudios.bbva.com

pronounced rallying trend, which reflects the better conditions of the markets (see graph).

As of the summer, the greater appetite for risk began to be reflected also in a growing, although moderate holding of Mexican bonds by foreigners, During September and October, foreigners have entered the bond market with greater force. This trend could be consolidated, should the search for yield continue, with the approval of the tax changes.

In addition to the gradual normalization of financing conditions in the foreign trade, the data and indicators of the tourism sector and retail sales relative to the last two shocks mentioned above, indicate that the negative effects are also being corrected gradually,. which has resulted in a change in the trend in economic activity measured with the GEAI.

In fact, the leading activity indicator prepared by BBVA Bancomer, which synthesizes the dynamics of a broad series of relevant indicators that usually lead to the Mexico cycle, shows positive changes in the monthly rate in recent months. The index that projects a reference indicator of economic activity in Mexico (GEAI, the General Economic Activity Index) at around 2 or 3 months leads us to expect to continue observing improvements in the monthly trend of economic activity, at least in the short term. It should be pointed out that among the leading indicators of activity, those that most quickly registered positive change compared to the prior month were those of expectations on production and consumption, both in Mexico and in the United States, followed by the figures related to industrial production in that country and that have improved with a lag the "hard" data of Mexico, mainly industrial production.

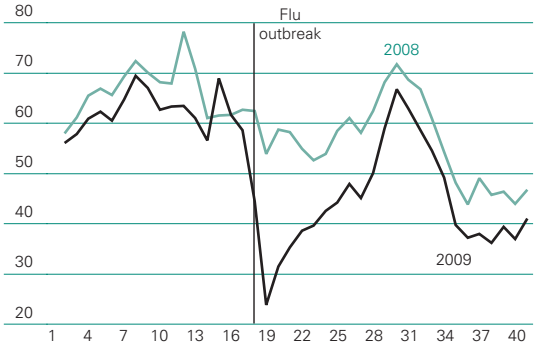
The cyclical recovery will intensify in 2010 with support from a better global environment and a competitive position that does not deteriorate

If by 2009, the estimated change in Mexican GDP stands at an annual -7.2%, in 2010, growth will continue at a rate close to 3% in the year as a whole. The lower drop compared to expectations should be noted, as will be analyzed to a greater extent in the following sections, given the prior recessions of the private formal employment variable. The less than proportional adjustment in employment is one of the factors that leads us to forecast an increase in GDP change for this year and the next.

Also, this recovery profile is consistent with the global scenario in which, in the most relevant part for Mexico, the United States consolidates positive growth in the second half of 2009 and grows at a rate close to 1.5% in 2010 following this year's recession.

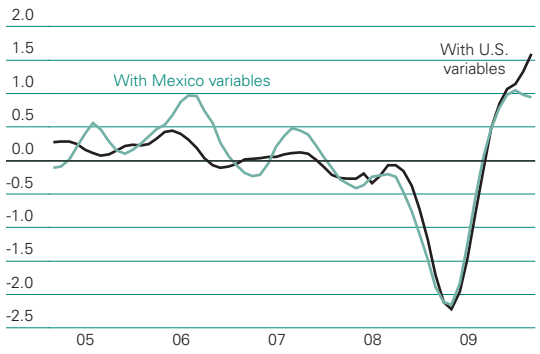
Even though the recovery in the U.S. will be relatively soft in comparative terms and in particular in household consumption, the final destination of a large part of Mexican exporting activity, an important and positive element should also be noted. In this

Tourism, Hotel Occupation
% of total, weekly



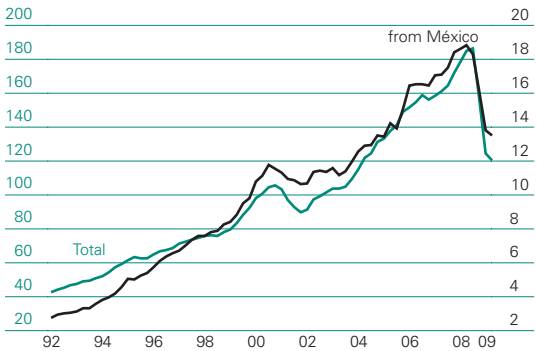
Source: BBVA Bancomer with INEGI data

Mexico: Leading Indicator of Economic Activity
Monthly % change



Source: BBVA Bancomer with INEGI data

U.S- Imports
Total and Coming from Mexico, billions of pesos



Source: BBVA Bancomer with U.S. Department of Commerce data

sense, we should highlitht the sustained competitive position of the Mexican economy which, in a certainly adverse environment, has been one of the few capable of maintaining its share quotas in the U.S. market[2].

On the domestic side, it is foreseeable that the stimuli for growth will change throughout the coming quarters. With regard to the fiscal policy and not knowing at this time the 2010 Budget which will definitely be approved, it seems that public investment for growth will continue, a distinctive fact of this crisis in face of the previous ones endured by the Mexican economy. In terms of revenue, it seems clear that increases in direct and indirect tax rates and the—foreseeable—new policy on public prices will imply a drain on available real income that will put a brake on growth in the coming quarters, although in a delimited way both in term and magnitude. Although this will be dealt with in detail in a later section of this publication, it seems reasonable to expect an inflation rate close to an annual average of 4.7% in 2010, almost one point below that to be posted in 2009, although with an upward profile throughout the year.

In terms of monetary policy, given the central bank risk balance, which considers not only the effects on inflation that could result from the tax package, but also the evolution of the economy and the dynamics of the GDP gap—which we estimate will continue to be considerably negative in 2010— we believe that the monetary pause, with a 4.5% reference rate, is feasible throughout 2010. The long rates continue to show high rigidity toward a downturn, despite the monetary slackening and the return of foreign capital to the domestic bond market. If the markets and the debt rating agencies perceive that the reforms of 2010 are a step in the direction of assuring the sustainability of public finances without the oil resource, the debt yield rates would have a more intense downward margin and would give room to lower business financing costs.

2 For more information, see the chart "Mexican Manufacturing Quotas in the U.S., something more than the exchange rate?"

Competitiveness of Mexican Manufactured Goods in the United States: Something more than the Exchange Rate?

Introduction

In contrast with the main exporters of manufactured goods to the United States (except China), Mexico has maintained and even slightly increased its market share. This article provides some data in the sense that not only the depreciation of the Mexican peso and the price-competitiveness gain helps to explain this improved competitiveness, but also the better structural panorama of key sectors of the Mexican manufacturing industry.

Slight gain in market share for Mexican manufactured goods…

In the context of the economic crisis experienced in the past year, the U.S. economy posted the most important decline in its imports in at least the last 34 years. Given that the Mexican economy is dependent on exports to this market, this is one of its most vulnerable fronts. Some figures that put the contraction in U.S. trade in context are the 32% drop in total imports and the 26% decline in imports of Mexican origin. This is the most important decline in history.

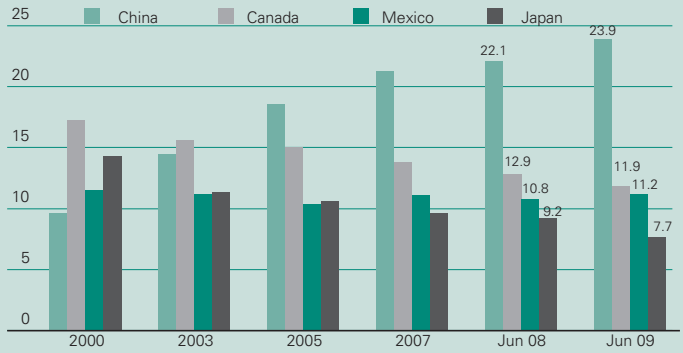
U.S. Imports
Annual % change

Source: BBVA Bancomer with U.S. Census Bureau data

Among the main exporters of manufactured goods to the United States, the decline in Mexican products has not, however, been among the most pronounced. Among the top five exporters to the United States, almost all have seen their market share diminish in favor of China (which has gained almost 4pts), while Mexico has remained practically at the same level (with a 0.3pt gain).

It should be emphasized that this trend toward an increased market share for Mexican manufactured goods has prevailed since 2005, in contrast with close competitors such as Canada, Japan, and Germany.

Market Share in the U.S.
% of total, manufactured goods



Source: BBVA Bancomer with U.S. Census Bureau data

Mexican exports, sustained competitiveness

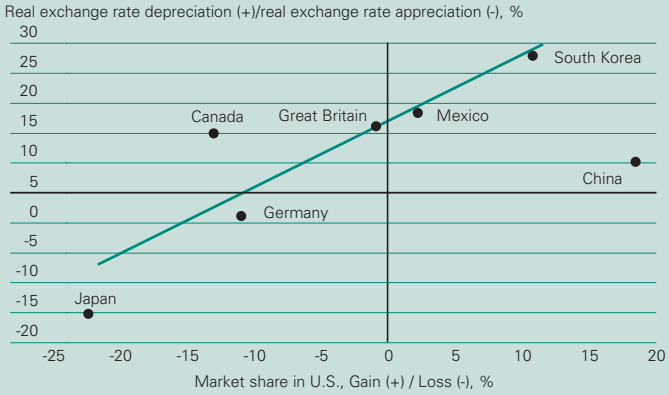
In the period under consideration, from the beginning of the global financial crisis to the present time, the depreciation of the peso has been a decisive factor in the improvement of the share of Mexican manufactured goods in the U.S. market.

The real depreciation of the peso in relation to the dollar has been around 18%, which is comparable with the 16% loss of the pound sterling or the 15% decline of the Canadian dollar. These economies however, have lost (Canada (-) 1.7pts) or maintained (Great Britain) their share in the U.S. market. South Korea stands out slightly given the gain in the U.S. market share held by its exports, mainly due to the increase in their percentage participation in the automotive sector, where its market share has grown 56% (31% in auto parts). Seoul is thus a direct competitor with Mexico, whose market share in the same categories has been 21% and 25%, respectively.

China stands out in this comparison for having posted a close to 5% real depreciation of its currency and at the same time increased its U.S. market share by19% for its manufactured goods (from 20.1% to 23.9% of the market).

Share of Manufactured Goods in U.S. Market and Real Exchange Rate

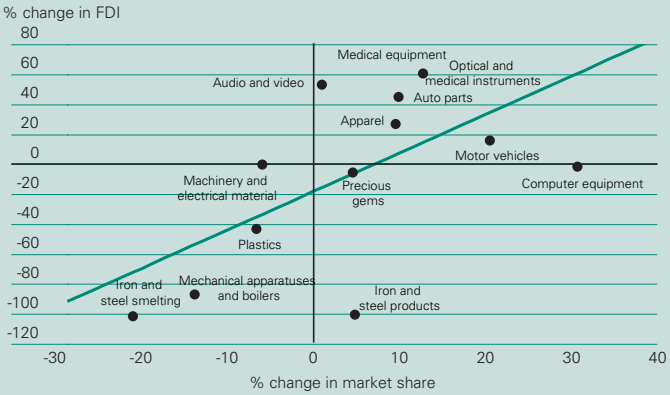
Annual % change, total manufactured goods



Source: BBVA Bancomer with BLS and U.S. Census Bureau data

Gain or Loss in U.S. Market Share and FDI in the branch

Annual % change



Source: BBVA Bancomer with Secretaría de Economía and U.S. Census Bureau data

Foreign Direct Investment, an encouraging sign in key sectors

Although the peso's depreciation in the period in question is to a large extent a factor that helps to explain this slight gain in market share, there is evidence of some improvement in the situation in key branches of the Mexican manufacturing industry in the past few months. This is the case with foreign direct investment (FDI). In the period under discussion, greater amounts of FDI (measured as a proportion of Mexican GDP in average pesos) in key sectors have been earmarked for branches with an important presence in total exports and even with gains in the U.S. market.

Among the main Mexican exports, some specific products such as cars, textiles, optical and medical instruments, audio and video equipment, and computers have received higher amounts of FDI in the period. In all these cases the variation in U.S. market share has been positive. At the same time, contrary cases include branches such as plastic manufactured goods, mechanical apparatuses and boilers and iron and steel smelting, in which the drop in FDI is related with their decline in U.S. market share.

Competitiveness, a Long-Term Race

According to the 2009-2010 Global Competitiveness Index (GCI) prepared by the World Economic Forum, the Mexican economy is in 60th place. Among its main comparative advantages are macroeconomic stability (in which it ranks 28th) and market size (where it ranks 11th). The latter variable reflects the size of the local and foreign markets to which the country has access and which has been spurred by the trade agreements and treaties that the nation has signed.

According to the GCI, countries pass through three stages of economic development: the first in which development is determined by a wealth of factors (Factor Driven), which can include an abundance of natural resources or manpower; the second in which the motor of development is the increase in the efficiency of the economy, (Efficiency Driven) which is achieved through structural reforms; and finally, the third stage, where innovation (Innovation Driven) is what determines development, which can include the capacity to develop new technologies. From this perspective, Mexico is in the transition between stage 2 and 3, and therefore still has a considerable way to go toward becoming one of the world's most competitive economies.

In synthesis, the improvement in competitiveness through structural reforms will be the decisive factor that will enable Mexico to either fall behind or gain in competitiveness in relation to other competitors.

Source: BBVA Bancomer

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Employment, Better than Expected Given the Sharp Drop in Activity

The adjustment in employment is less pronounced than in previous episodes …

The impact of the global crisis has revealed vulnerabilities and supports in the Mexican economy. In this sense, the lower relative adjustment in employment is obvious compared to what had been the dynamic of that observed in past recessions, in particular in the last two recessive periods: in 1995 and 2001.

In the current adjustment episode of demand, the drop in employment has been relatively limited. During the economic recession of 1994-1995, the adjustments in activitiy and in employment were -6.2% / 6.0% annually, respectively, considering the first four quarters of the recession and using as reference the IGAE (Global Economic Activity Indicator) and formal private employment posted by the IMSS (the Mexican Social Security Institute). In the 2000-2001 episode, the adjustments were at an annual -0.9% / -1.2% respectively. In contrast, since the end of 2008 until now, while the adjustment in economic activity is at around 7%, the decline in employment is at around 3%. As seen in the attached graph, the relation of employment and economic activity in the 2008-2009 period is substantially different from the average of that registered historically, and particularly in periods of economic adjustment.

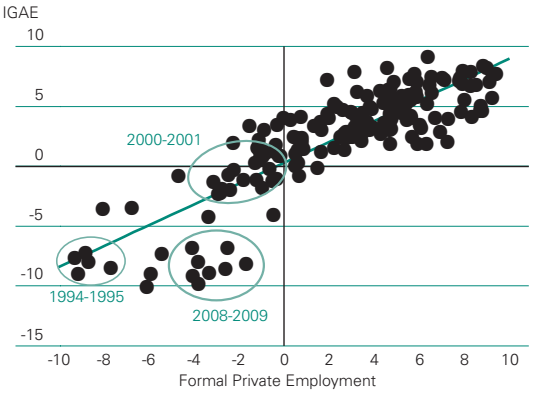
… which is maintained in most of the large branches of activity

Distinguishing sectors of activity, the analysis of the whole is basically maintained, which turns out to be consistent with the fact that the change in the relation between employment and activity is not derived from changes in the sectorial composition of the adjustment in progress. Thus, in the first place, in the manufacturing sector (which accounts for 30% of formal private employment), the adjustment in employment in the previous episodes was much more proportional. However, in the current episode, and despide the fact that this recession has as its origin the drop in manufactured exports, with declines of close to 12% in the sector's activity, the adjustment in employment in the manufacturing sector has been slightly less than proportional (10%). In the other industrial activity of reference, construction, the decline in employment is consistent with the previous ratio existing between employment and activity.

Finally, in terms of employment in the retail sector (20% of employment) and the rest of services (40% of employment), the current dynamic is positive in light of the decline in the added value of activity. In this last sector, which includes service activities such as transportation services, services linked to telecommunications, personal and social services, the drop in services of almost 3% is linked to a slight increase in employment of nearly 0.3% in these sectors.

In the retail branch, historically it is found that GDP drops in the sector are not accompanied by drops in employment in the same proportion

Employment: IMSS and IGAE (Mexican Social Security Institute and Global Economic Activity Indicator)
Annual % change



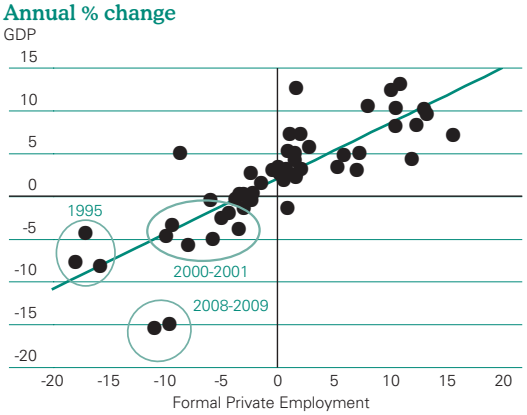
Source: BBVA Bancomer with IMSS and INEGI data

Economic Activity and Employment
Annual % change

	Total	Manu-facturing	Construc-tion	Trade	Rest of Services
			GDP		
1994-95	-6.2	-4.9	-23.3	-15.4	-2.2
2000-01	-0.9	-4.3	-4.4	-4.0	2.0
2008-09	-6.6	-11.7	-6.9	-14.1	-3.3
			Formal private employment		
1994-95	-6.0	-13.4	-21.1	-2.6	-3.1
2000-01	-1.2	-7.6	-2.3	4.2	2.7
2008-09	-3.3	-10.0	-9.2	-0.1	0.3

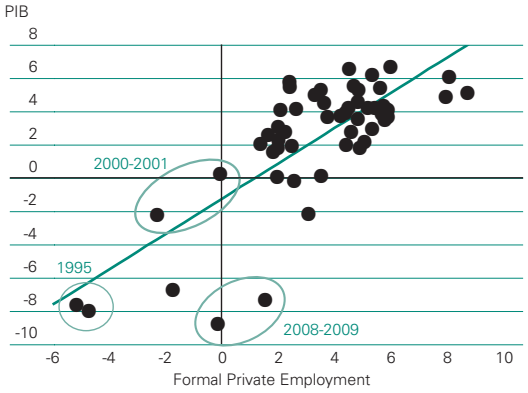
Source: BBVA Bancomer with INEGI data

Manufacturing: GDP and Formal Private Employment
Annual % change



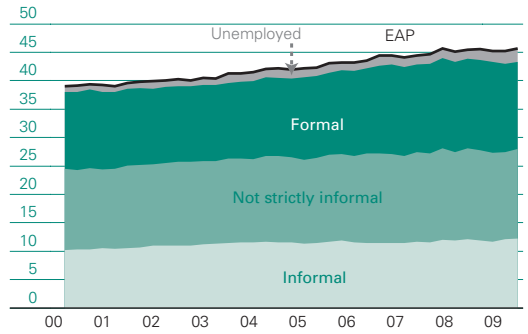
Source: BBVA Bancomer with IMSS and INEGI data

Services: GDP and Formal Private Employment
Annual % change



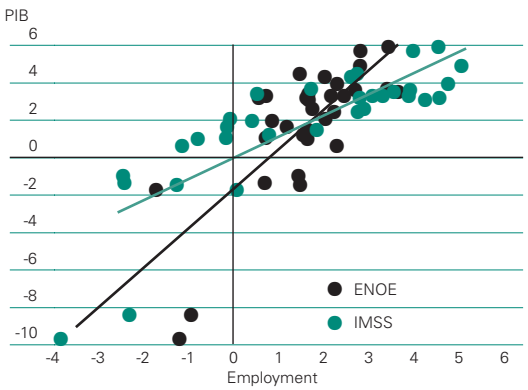
Source: BBVA Bancomer with IMSS and INEGI data

Economically Active Population (EAP)
Millions of persons



Source: BBVA Bancomer with INEGI data

Economic Activity and Employment
Annual % change



Source: BBVA Bancomer with IMSS and STPS data

and positive variations are even seen, such as in 2001, and are practically non-existent between 2008-2009. In the current episode, the drop in the GDP value of the sector is compared to that of 1995 and stands at around 14%[1]. However, formal private employment in the retail sector (retail, restaurants and hotels) showed a drop of only 0.1%. In this sense, one of the factors that could have a bearing on this anomalous development is the participation of the informal sector in the retail branch, where it is estimated that around 21% of production in the sector is in the informal sector of the economy[2].

Employment in the informal market partially compensates the adjustments in the formal market.

The percentage of the population employed in the informal sector accounts for nearly 27% of the employed population, according to figures of the ENOE, Encuesta Nacional de Ocupación y Empleo (the National Survey of Jobs and Employment). In turn, the population with access to health services, which includes workers registered in the IMSS (the Mexican Social Security Institute), ISSSTE (the Social Security Institute for Government Workers) and the armed forces represent around 36% of the economically active population. The remaining 36% is comprised of workers that we have classified as "not strictly informal", who do not have access to health services but are also not workers linked to an economic unit in the informal sector. Thus, there are three large groups of persons among the 43.3 million total employed workers as determined by the ENOE (National Survey of Jobs and Employment), of which formal private employment represents slightly more than one third.

Therefore, the variation in employment could vary significantly when comparing the variable used as reference: on one hand, formal private employment, for which the source of information are the monthly records of the IMSS and on the other, total employed population measured quarterly in the ENOE, Encuesta Nacional de Ocupación y Empleo (National Survey of Jobs and Employment) reported by the INEGI (the National Institute of Statistics, Geography and Information Technology). This survey also considers workers that, while they are not classifed as belonging to the informal sector, they do not have access to health services, such as the case of some small micro-businesses, or independent self-employed workers, for example.

The comprarison of both sources of information reveals the lower pro-cyclical nature of employment of the sectors outside those classified as formal in the private sector. With total employment data, in addition to the fact that the conclusion remains that the adjustment in employment of this period is less intense than in previous periods, it is also less intense even among workers of the formal private sector. This situation also translates into the relatively low levels of

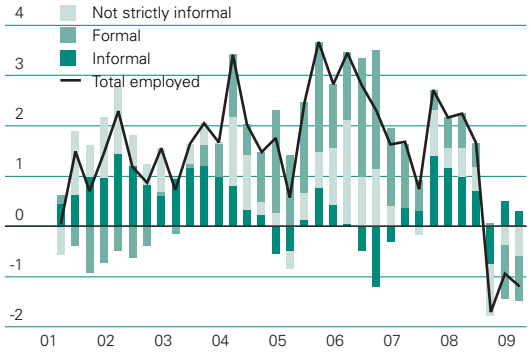
1 To the lower dynamic of consumption by families during the first part of the year, was added the adverse effect on commercial activities of the AH1N1 influenza epidemic during the second quarter of the year.

2 INEGI. "Sistema de Cuentas Nacionales de México: Cuentas por Sectores Institucionales Cuenta Satélite del Subsector Informal de los Hogares 1998-2003" ("National Accounts System of Mexico: Accounts by Institutional Sectors, Satellite Account of the Informal Subsector of Households 1998-2003"). Chart 3: Production of the Informal Subsector by Economic Activity. Percentage Share in Total Production of the Economy.

total unemployment registered in the economy and their relatively low increase, given the intensity of the decline in activity.

In this sense, the importance of the informal sector should be highlighted as a "shock absorber" of unemployment. As a result of the collapse of economic activity in the fourth quarter of last year, the contribution to total employment was practically negative in all sectors. In the two subsequent quarters (information available through the second quarter) the positive contribution of the informatl sector to total employment is significant, whereas that of the strictly formal sector and the "not strictly informal" sectors continue to negatively affect overall growth.

Total Employment
Annual % change and contribution to growth

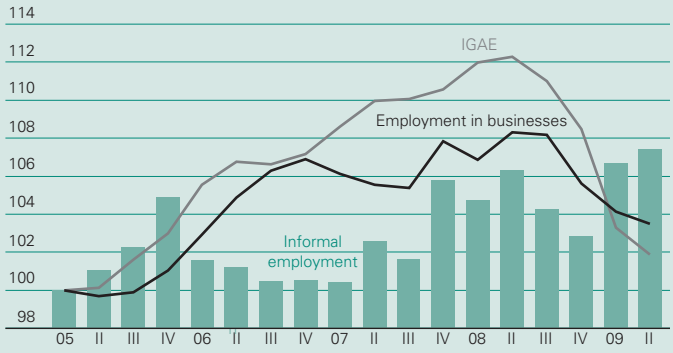


Source: BBVA Bancomer with IMSS and INEGI data

The Adjustment in Employment has been Stronger in the Formal Sector of the Economy

The ENOE figures confirm an employment adjustment in the formal sector and the escape valve in the informal sector. In this last year, the economy lost 522,000 jobs of the 43.9 million persons employed in 2Q08. In reviewing the behavior of the main group that underwent modifications, the following characteristics were observed, among others. The downward adjustment was seen mainly among subordinate and salaried workers; in the secondary sector, among persons who had access to the health institutions, the adjustment was stronger in the large establishments, despite their low share in total employment, and was seen in companies and businesses.

IGAE and Employment in Companies and Informal Employment
Index I T05=100



Source: BBVA Bancomer with IMSS and INEGI data

As a counterpart, in the same period, self-employed workers increased, employment in the tertiary sector rose, in institutions and in the informal sector. Of course, these classifications are independent among themselves, as can be seen in the attached chart.

In the short term, that is, in the second quarter, compared with the first quarter of this year, the results of the current situation are interesting, although they must be taken with the reservations of the case, since they are orginal series, not seasonally adjusted. Although employment grew by 428,000 jobs, at the same time jobs are being lost in the groups and sectors mentioned above and recovery is seen in those groups identified as under-employment or informality, such as self-employed activity, in the household sector and in subsistence agriculture; in addition, for the latter group, there is evidence of seasonal behavior.

Some Characteristics of the Employed Population
Millions of persons

	2Q09 Level	Variation 2005-09	Variation Last year	Variation Last quarter
Total employed population	**43.3**	**2.8**	**-0.52**	**0.43**
Position in employment				
Subordinate and salaried workers	28.6	2.5	-0.27	-0.14
Self-employed workers	10.0	0.5	0.10	0.31
Sector of economic activity				
Primary	5.6	-0.4	-0.11	0.19
Secondary	10.4	0.0	-0.76	-0.15
Tertiary	27.0	3.2	0.38	0.39
Access to health institutions				
With access	15.4	0.9	-0.39	-0.03
Without access	27.7	1.8	-0.12	0.47
Sphere and size econom. unit				
Micro and small businesses	24.5	1.8	-0.21	0.22
Large establishments	3.6	-0.1	-0.38	-0.05
Type of economic unit				
Corporations and businesses	21.1	0.7	-0.98	-0.13
Institutions	6.4	1.0	0.32	0.20
Informal sector	12.2	0.8	0.13	0.08
Self-subsistence agriculture	1.4	0.0	0.01	0.27

Source: BBVA Bancomer with ENOE and INEGI data

Therefore, it is important to see the evolution of employment in terms of quantity, but also in terms of quality. The rise in employment in sectors of low productivity, without fixed income, without benefits such as health services, could be a partial short-term solution, in view of the option of total unemployment but it does not solve the problem, it increases underemployment and the informal economy and contributes little to productivity and growth.

Employment Profile in Mexico
Population, millions

	Level			Variations		
	2Q05	2Q08	2Q09	Accum	Annual	Quart.
Total	**103.8**	**106.6**	**107.4**	**3.6**	**0.87**	**0.21**
14 yrs. and over	73.6	77.0	78.7	5.1	1.73	0.55
EAP	42.3	45.5	45.7	3.4	0.25	0.51
Employed	40.8	43.9	43.3	2.6	-0.52	0.43
Unemployed	1.5	1.6	2.4	0.9	0.77	0.08
N EAP	31.3	31.5	33.0	1.7	1.48	0.04
Rates		%			Variation pp	
Pop. 14 and + vs. Total	70.9	72.2	73.3	2.4	1.03	0.36
Share *	57.4	59.1	58.1	0.6	-0.98	0.24
Unemployment	3.5	3.5	5.2	1.7	1.67	0.11

EAP economically active population
NEAP non-economically active population
* EAP vs. Population 14 years old and over
Source: BBVA Bancomer with ENOE and INEGI data

Labor Market Rates
%

	2Q05	2Q08	1Q09	2Q09
Rates calculated against the EAP (econom. active popul.)				
UR	3.51	3.50	5.06	5.17
PEUR	9.55	9.90	10.74	11.51
GPR	8.01	7.44	8.88	8.70
Rates calculated against employed population				
UNR	7.53	6.87	8.00	11.14
CCER	14.60	10.60	12.17	12.77
ERIS	28.11	27.50	28.21	28.12

UR Unemployment rate: % of EAP that is unemployed
PEUR Partial employment and unemployment rate: % of unemployed EAP, plus population that works less than 15 hours.
GPR General pressure rate: % of unemployed EAP plus employed looking for work.
UNR Underemployment rate: employed population with hours available for other work.
CCER Critical conditions employment rate: population that works less than 35 hours, plus that which works more than 35 hours with income lower than the minimum wage, plus those who work more than 48 hours with income lower than 2 minimum wages.
ERIS Employment rate in the informal sector
Source. BBVA Bancomer with INEGI data.

The dynamics of the Mexican labor market

In the second quarter of this year, the economically active population (EAP), as measured by the ENOE, was 45.7 million persons, of which 43.3 million were employed and 2.4 million were unemployed. Between 2005 and 2009, the dynamism of the EAP has surpassed that of the population, both because of the growth of the working-age population and because of a greater participation of the population in the labor market. To this regard, the proportion of persons over 14 years of age rose from 73.6% in 2005, to 78.7% in 2009, which as a consequence of the process of demographic transition increases its relative share in the total population. In this period, the working-age population grew at an average rate almost double that of the total population, 1.7% and 0.9%, respectively. But the EAP grew at a greater pace, at an annual 2%. Of course the demographic changes are already reflected in these numbers, since we need only remember that in the last population explosion from 1950 to 1980, the population growth rates were higher than 3% annually and this means that the magnitude and the potential opportunities of the demographic bonus are and will continue diminishing.

The rate of participation or the proportion of the population that decides to join the labor market has also increased in this period of time, from 57.4% in 2005 to 59.1% in 2008, and dropped to 58.1% in 2009, as opposed to relatively well-defined population trends, where the changes in share are more volatile, since they are formed by two great factors: in the long term, the rate of participation is linked to economic and social development, generating a greater need for training, which delays the beginning of active life, pension systems or modernization and cultural changes that increase the participation of women in the labor market, in the short term, the characteristics of the economic cycle and in particular of the labor market determine the decision to participate or not in the labor supply. In countries with unemployment compensation, the unemployed population seeks work when there are good opportunities, but when there is no unemployment compensation and savings are depleted, it becomes necessary to seek employment even if it is in the informal market, and this seems to be what prevails in our country. In the second quarter of this year, in comparision with the first quarter, there is growth in the rate of participation and consequently of the economically active population, with simultaneous increases in the absolute number of employed and unemployed persons. Habitually, the emphasis is made on the unemployment rate, which rose in the quarter, but it is also important to note a positive change in the number of employed persons.

The Challenge of Increasing the Capacity for Long-Term Growth Persists

Mexico has shown in recent decades a severe lag in its economic growth, while the per-capita income in the country has grown only an annual average of 0.6% since 1981[1]; our main trading partner, the United States, has done it by 2%. Even when comparing Mexico with other emerging countries, the growth gap is much larger: Chile has grown five times more rapidly than Mexico in the same lapse of time and South Korea, 10 times (see attached graphs).

In light of this panorama, the main challenge that the economy is facing—for decades past—is the capacity to sustain much higher economic growth, since without it, it will not be possible to revert the situation of poverty and economic inequality predominating in the country. To accede to a higher economic growth level implies attending to multiple aspects of a diverse nature. However, all of these factors can be included in decision making, which discretionally establish or not an environment propitious for economic activity that favors the more efficient use of the country's resources and, by this, detonates the evolution of productivity.

In view of this, we could ask what has the teaching of past episodes of structural reforms left us, on what is economic growth in the country based and what are the challenges that are pending in order to attend the problem of the lack of economic growth?

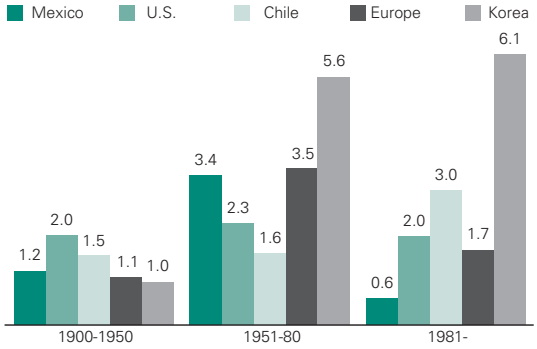
What have we learned from the recent past? A lower rate in the reform process puts a brake on the efficiency of the economy

Since the decade of the eighties, a strong contraction in the efficiency of the economy was posted, implicating a collapse in total factor productivity (TFP), which, in the end, has implicated that the potential growth of the country will contract by more than half compared to the potential recorded in past decades (the sixties and seventies), a fact that has not been reverted currently. The severity of the economic adjustments throughout the eighties reveals not only the deficiencies in the management of the fiscal and monetary policies of that era, but also the poor design in the implementation of supply policies, market reform of goods, services and factors which, far from providing an incentive for the more efficient use of productive resources in the country resulted in promoting activities of low added value and low investment levels.

In view of this,—from the middle of the eighties to the end of the nineties—a first round of structural reforms was carried out, with the aim of granting greater flexibility to the economy. These reforms consisted in sectorial deregulation, fiscal modifications, trade opening, unilateral reduction of trade tariffs, privatization of government-owned companies, opening to foreign direct investment (FDI), free-float currency exchange regime and, to finalize, a new pension system for the private sector (see graph)..

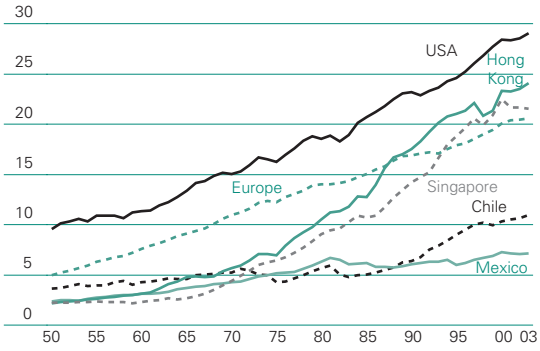
1 In terms of U.S. dollars at 1990 prices.

Per Capita Income Growth
Annual Average, %



Source: BBVA Bancomer with Angus Maddison data

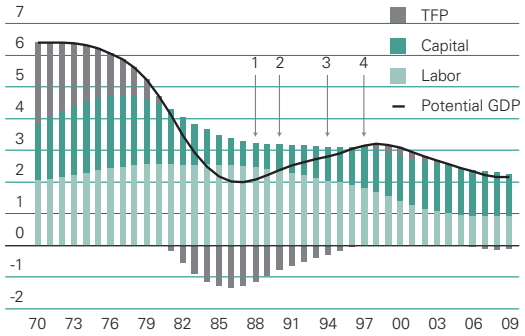
Evolution of GDP Per Capita
Thousands of U.S. dollars, 1990



Source: BBVA Bancomer with Angus Maddison data

Contributions to Potential GDP Growth and Reforms

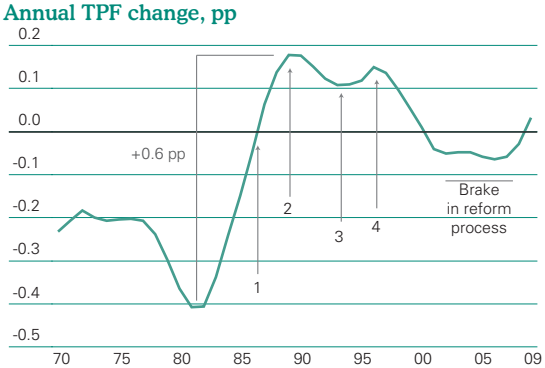
Annual %



1 Sectorial deregulation (end of the eighties. Fiscal reform, Start of the VAT (1980). Unilateral reduction of GATT tariffs (1988)
2 Promotion to markets. Privatization (telecoms in 1990). Sectorial Opening of the FDI (foreign direct investment) and deregulation (1991, 1993). Flexible exchange rate regime (1994). Bank privatization (1991, 1995, 1998). Federal Competition Law (1992).
3 NAFTA (1994)
4 Pension System (1997)
Source: BBVA Bancomer

Mexico: Change in Total Factor Productivity (TFP) and Reforms

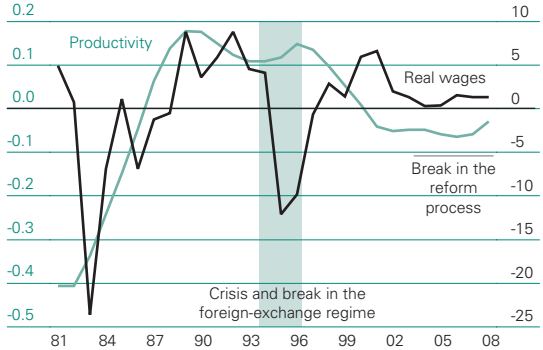
Annual TPF change, pp



1 Sectorial deregulation (end of 1980s). Fiscal reform, start of the VAT (1980). Unilateral reduction in GATT tariffs (1988)
2 Promotion to markets: Privatization (telecoms in 1990). Sectorial opening to FDI (foreign direct investment) and deregulation (1991, 1993). Flexible foreign-exchange regime (1994). Bank privatization (1991, 1995, 1998) Federal Competition Law (1992).
3 NAFTA (1994)
4 Pension system (1997)
Source: BBVA Bancomer

Productivity and Real Wages

Change in TFP, pp; and real annual % change in real wages, manufacturing industry



Source: BBVA Bancomer with INEGI data

This reforming cycle favored an expansion of productivity in the economy and a greater boost to capital investment. Thus, throughout this whole period, the expansion in factor productivity implied a share of 0.6 pp of higher potential GDP (see attached graphs) and investment rose from 15% of GDP after the 1982 crisis to 20% at the end of the nineties (with growth trend currently toward 22.9%).

Of note is that the expansion in total factor productivity (TFP) due to the structural reforms prevailed despite the strong financial crisis observed at the end of 1995. This suggests that the prior changes contributed to the economy having a quick recovery despite the severity of the recession (annual growth of -6.2% and 5.1% in 1995 and 1996, respectively). However, it also indicates that the steps taken were not enough for the country to maintain a growth rate similar to other economies.

As of the end of the past decade, it was evident that the lack of new reforms and/or problems in the design of the previous reforms (e.g. privatizations in an environment of low competition) translated into stagnation both in the country's productivity and in the contribution of investment to potential GDP growth (see attached graphs). It should be emphasized that an increase in the gross fixed investment in relation to the size of the economy—as has been observed since 2003—does not necessarily imply a higher contribution to potential growth (see graph). This is due to the fact that we cannot rule out that the increases in capital investment in an environment of poor economic competition can generate a greater contribution to the extraction of monopolistic income than to the capacity of potential economic growth.

The scant capacity of the Mexican economy to generate a higher growth level via productivity has perverse effects on the potential economic activity of the country, beyond the direct effects of a greater contribution of this factor to growth. In this sense, the expansion in productivity and efficiency contributes to increasing retribution for work in the economy[2]. This is evident in the low expansion of real wages in our country during the period of lowest intensity of reform in this decade (see graph)[3], in such a way that the capacity for greater expansion of consumption and savings in the economy is limited (by this, the dynamics of all accessory services such as banking coverage, will tend to be limited). Also the Improved efficiency of the economy has greater expected profitability from capital investment, which raises its level of equilibrium in the long term and, therefore, its contribution to potential growth.

2 The nominal instability of the economy, that is, high inflation and high foreign-exchange volatility can generate short-term deviations in this relationship. However, in the medium term, productivity will tend to be implicit in the determination of wages.

3 Although in the present administration important advances have been made in terms of the reform of the pension plan of government workers (ISSSTE), of the Pemex corporate control and budgetary process and new control taxes (IETU), the measures are more concerned about avoiding explosive courses of labor liabilities for the government and of administrative aspects (Pemex and IETU) without approaching the main aspects such as the opening of investment.

Additionally, low growth potential tends to be associated with growth in tax collection (direct and indirect taxes), also potentially limited. This, together with the design of the fiscal regime and some growing expenditure needs, has implied that it has been necessary to resort to increasing the dependence on budgetary income of the public sector to taxing non-renewable resources such as oil (this revenue went from 21% in 2002 to its historic maximum of 44% of the total In 2008). Under well-known circumstances of decline in oil production in the country and of the tax collection potential, the capacity of the government to provide public inputs for growth (i.e. infrastructure) and boost social policies is reduced.

Although prudent management of the fiscal and monetary policy in recent years allowed for counter-cyclical fiscal policies, in the present recessive episode, the severity of the international economic contraction depleted the government's capacity to increase its spending and once again made evident the importance of an in-depth reform of public finances.

Economic growth sustained more by the provision of inputs than by their more efficient use

The structural reforms implemented in the country since the eighties were necessary to revert the fiscal and monetary imbalances observed at the beginning of this decade. Nevertheless, from a very long-term outlook, it seems that the structural changes made to date have not led to a leap in the growth of efficiency in the country, but that the economic expansion has been based on the provision of inputs—of capital and labor—more than on a more productive use of these (see graph). This implies that the capacity for growth is strongly reduced compared to other countries and is subject to situational factors such as international liquidity for financing capital, the availability of natural resources (i.e. oil), etc.

In terms of per capita income and as opposed to other economies, the expansion of income is due to the incorporation of a greater amount of work and to population factors more than to labor productivity.

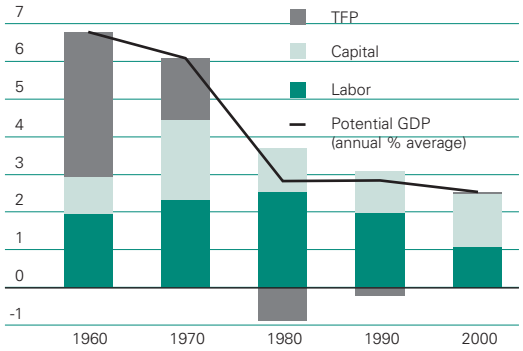
The negative contribution of labor productivity to per capita income implies that the workers of the country are predominantly engaged in activities of low aggregate value, be it due to lack of training (human capital) or to the high cost of joining the formal sector of the economy (for example, being a captive tax payer and enjoying the same endowment of public goods). For want of greater growth of per capita income, relief from poverty levels and inequality in the country is difficult.

The challenge of implementing a reform agenda

The reform of public finances, of property rights and of the rule of law, of educational and public health quality, of the labor market, of universal social security, of the energy market, of telecommunications, of public safety and of deregulation are all part of a broad agenda of reform that has been discussed for years and that has not been

Share of Potential GDP Growth over Decades

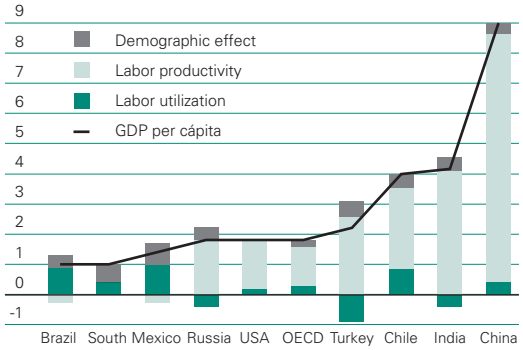
Potential GDP pp, average



Source: BBVA Bancomer

Sources of Growth of Per Capita Income

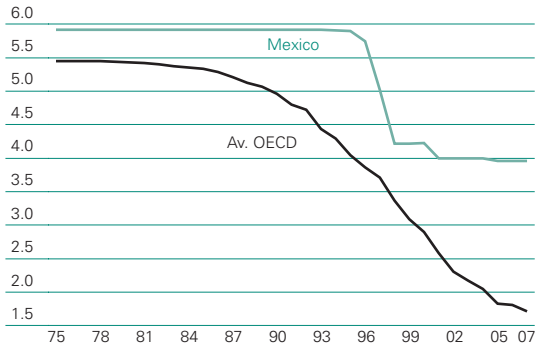
Av. 1987-2007; per capita GDP pp and annual % average



Source: Heckman Conference Banco de Mexico 2009 based on OECD, WB, IMF, WEO, UNSD

Evolution of Competition in the Markets

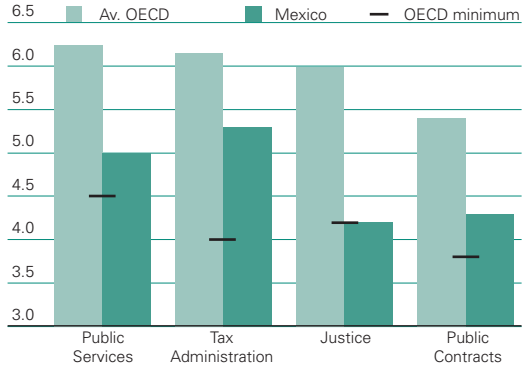
Index 0 = high competition and 6 = no competition



Source: BBVA Bancomer

Perception of Corruption Risk in Government Activities

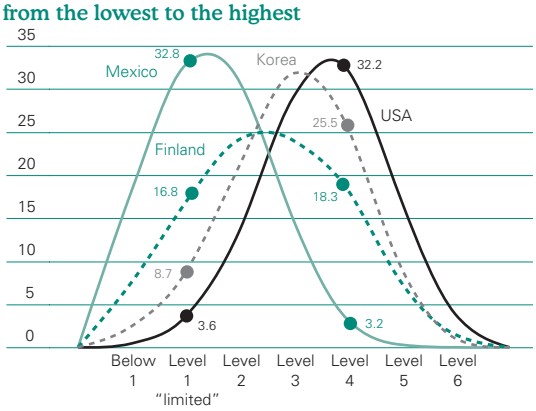
Index from 0 to 7; 3.0 = more common corruption 6.5 = less common corruption



Source: BBVA Bancomer

Scientific Knowledge

2006 PISA Report; % of student distribution by level, from the lowest to the highest



Source: BBVA Bancomer with 2006 PISA Report data

fully served. All these measures allow establishing a more favorable environment for economic activity and are necessary to increase the provision of productive inputs (i.e. physical investment, human capital, raw materials, financing) but not sufficient to give rise to the efficient use of said inputs.

The efficient use of resources that implies heading for greater economic growth with a more balanced distribution of the national income requires that consumers (the general population) in the country have the sufficient empowerment to balance the interests of the economic offerers (the case of monopolies and oligopolies), political offerers (rendering of accounts, revocation of mandate), and social offerers (labor unions, access to justice). If not, an unbalanced treatment in the economic, political and social areas will lead to the concentration of income (both economic and political) and to limited social well-being (see attached graphs).

Pursuant to this, reverting poverty in the country and the high inequality in economic income is not only achieved through higher endowments of fiscal resources that increase the physical, social and human capital of the poorest, but also, by endowing the population with greater capacity, legal and institutional, so as to fully defend their economic rights (to gather quality economic goods at competitive prices and to be employed in activities where they are more productive).

Outstanding among the measures that would favor higher economic growth and would contribute to providing relief to the poverty situation in the country are: (1) the promotion of greater domestic economic competition through greater legal and sanctioning strength of the public institutions that guard over them and the elimination of obstacles to investment by competitors, (2) promoting steps of collective action and universality in resolutions of "injunctions" (special constitutional protection writ); and (3) strengthening the rendering of accounts. These measures will tend to empower the benefits of past and future reforms, since they tend toward a more efficient assignment of the productive resources of the country (for example, better practices in the distribution of public spending).

In a parallel manner, the rise in the amount and the quality of human capital (education and health), it is necessary to allow individuals to:(i) assimilate new technologies and professions of higher added value; (ii) make use of the value of the income generated in the economy; (iii) hold economic and political elections more appropriate to their interests and preferences (what, how, when and where to consume or vote) and, in brief, (iv) tend toward the full exercise of their economic and political rights.

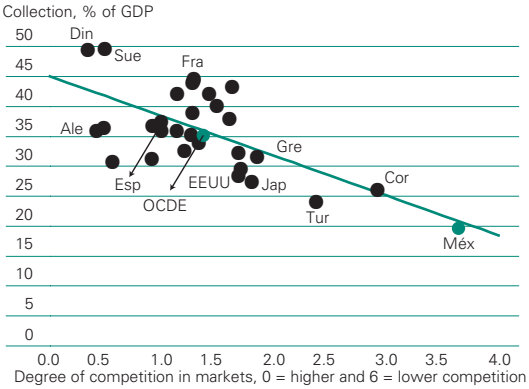
The urgency of an in-depth educational reform is evident when it is seen that most of the students in the country have a knowledge level similar to the worst qualified in developed countries (see graph). Without this reform, it would be difficult to revert the productive lag in our country and reduce poverty. The reform demands eliminating obstacles to the supply of quality education and health services that are related to the deficient provision of

infrastructure and to the low labor flexibility in personnel engaged in these activities.

Having access to better educational levels and providing a legal and institutional structure that favors the full exercise of the economic and political rights of individuals will facilitate the reform of specific markets (for example hydrocarbons, telecommunications) and will contribute to reducing biases in the productive structure of the country that is reflected in a very high informal sector of the economy, which distributes the efficiency in the country, generates an over-utilization of public infrastructure and spends the tax revenues of the government.

In contrast to the reforms implemented since the eighties, it is advisable to take into account that the structural modifications are inter-related, hence the need for the government to undertake a broad and continuous reform agenda. For example, the reforms to the promotion of competition of markets and the fiscal reform should not be disassociated: economies with a greater predominance of monopolies are also those with lower tax collection capacity and, therefore, of expenses on public goods, health, education, justice and infrastructure.

Tax Collection and Monopolistic Structures in the Country



Source: BBVA Bancomer

An Estimate of Potential GDP of the Mexican Economy

Introduction

The potential GDP of an economy is understood as that consistent with the full use of the country's resources sustainable over time. The growth of this variable defines the capacity of the economy to generate activity, demand, and revenue in the medium and long term, which, in turn, reflects the amount of available resources and the efficiency with which they are used.

This inset will provide data on the estimate of the potential growth of the Mexican economy made by the BBVA Economic Research Department, compare it with other projections, and will conclude with comments on the need to implement structural reforms as the factor that will spur higher levels of efficiency of the economy in order to generate greater capacity for growth in the medium and long term.

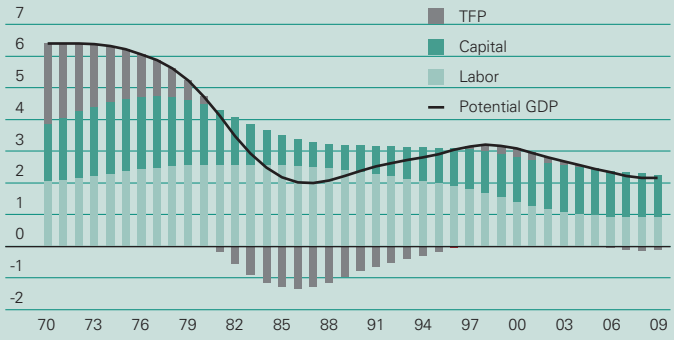
Measuring potential GDP

There are various and alternative approaches in calculating the potential growth of an economy, although all can be categorized in two types of approaches, one that is based on the functional relations among the factors of production in economic theory and, another that employs statistical methodologies to determine the tendential component—the most stable—of GDP over time[2].

With the first approach, an estimate is made of the way in which the productive factors of an economy come together. In this case, among the available alternatives, we estimated a *Cobb-Douglass* production function, $\mathbf{Y}_t = A_t K_t^{\alpha} L_t^{(1-\alpha)}$, which in logarithmic terms is expressed as $\ln\mathbf{Y}_t = \ln A_t + \alpha \ln K_t + (1-\alpha)\ln L_t$, where $\mathbf{Y}$ is the value of GDP in real terms, L is the level of employment, and K is the value of the capital stock, also in real terms. A is the total factor productivity (TFP), the efficiency with which they come together in the economy[3].

Based on the information described above, TFP (total factor productivity) is calculated on the basis of annual data for the 1960 to 2008 period. As previously mentioned, statistical filters are applied to obtain the most stable components in the series, consistent with behavior sustainable in the long term. In addition, the contribution of each of the components to growth in each time period is obtained.

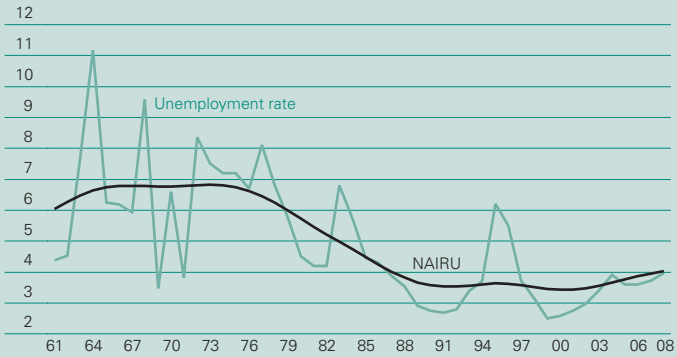
Potential growth
Contribution of the factors



Source: BBVA Bancomer

Based on this methodology and in assumptions of NAIRU (Non-Accelerating Inflation Rate of Unemployment), capital stock, and the depreciation rate, it is estimated that the potential growth of the Mexican economy is around 2.7% for the most recent 10-year period, although with a declining trend throughout the same time frame, which places average growth in the 2008-2010 period at around 2.2%.

Unemployment and NAIRU
% of Economically Active Population (EAP)



NAIRU (Non-Accelerating Inflation Rate of Unemployment)
Source: BBVA Bancomer

Potential growth: alternative estimates and coincidence on the need to increase efficiency in the use of resources

It should be emphasized that measurement is a theoretical concept, not directly observable, such as the potential growth of an economy. It implies making relevant assumptions to reach the final result, which leads to alternative numerical measurements. These measurements tend to slightly diverge in quantitative terms but not in relation to the trend of their evolution.

Potential GDP: Alternative Estimates

Own est. 2009-2010	H-P filter 2009-2010	OECD 2009-2010	Est. cap.stock[2] 2006-2007	Faal (IMF)[3] 1996-2003	E. Loria[4] 1996-2006
2.2	2.4	1.9	[3.7-4.3]	3.6	3.7

1. OECD: The effect of financial crisis on potential output: new empirical evidence from OECD countries. Wp No. 699 Furceri & Mourougane.
2. Potential GDP and total factor productivity. Economía Mexicana, Vol. XCIII No. 2 CIDE
3. GDP Growth, potential output and output gaps in Mexico. Ebrima & Faal IMF WP/05/93 May 2005.
4. Potential GDP and Economic Cycles in Mexico (Producto Potencial y Ciclos Económicos en México, 1980. 1-2006.4 UNAM 2007

Source: BBVA Bancomer

It should be mentioned that it appears reasonable that potential growth will decline as a result of the crisis. This is due to lower investment levels from the increase in its cost as a result of greater risk aversion and decisions to defer new investments given a panorama of uncertainty, and in terms of employment, derived from a rise in structural unemployment[4].

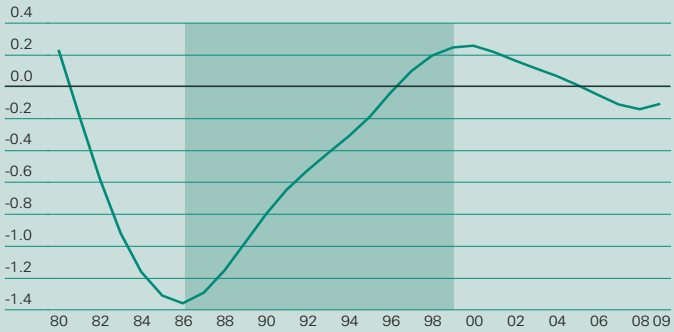
Although less negative effects on the factors of production could limit the reduction of potential growth, these effects would be limited, given delimited increases in the degree of efficiency with which the factors come together.

The following is the result of an exercise in which growth is assumed in L or K and all the other variables are considered to remain constant. For the labor factor, it is felt that the natural unemployment rate converges at a level where the total economically active population has jobs. This NAIRU (Non-Accelerating Inflation Rate of Unemployment) is estimated at around 3% in the long term, 0.8 points less than is considered in the current scenario as being sustainable in the long term. In a second exercise, the effect is calculated on the economy's capital stock of an increase in investment as a percentage of GDP up to the level prevailing in emerging economies such as Asia, with which investment would rise from its current 22% level to an estimated 30%. From both exercises the conclusion is drawn that the medium term increase in potential growth would be close to one tenth of a percentage point[5].

The outcome from an exercise of this nature is that the way in which potential GDP could increase decisively and with lasting effects is through the best use of the economy's available resources, that is, approximate increases in efficiency, in this case by total factor productivity (TFP). In this sense, it is important to emphasize that the launching of structural reforms aimed at improving the environment in which economic activity is carried out allows mitigating the negative impact of the crises on the economy's capacity for growth.

In Mexico, it should be emphasized that the increase in TFP as a measure of the economy's efficiency has occurred during periods in which major structural reforms were implemented. This is the case of the period between 1986 and 2000, where among other reforms, the trade opening was undertaken and advances were made in nominal stabilization, financial deregulation, and the privatization of state-owned enterprises, for example. This is in contrast with the most recent period, characterized by a less decisive push toward economic reforms, particularly on the level of continuing to advance in opening key sectors of the economy to competition.

Total Factor Productivity
Contribution to potential GDP, pp



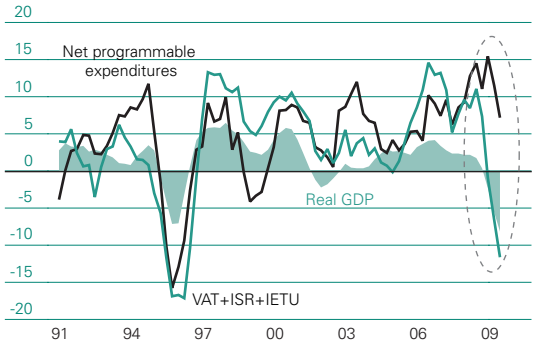
Source: BBVA Bancomer

Cecilia Posadas c.posadas@bbva.bancomer.com

1 For example, in the sense of not generating inflationary processes, continued growth in the general level of prices in the economy.
2 Through the use of Hodrick-Prescott or Baxter-King type statistical filters.
3 For the present calculation, Y is based on the measurement of national accounts by the National Institute of Statistics, Geography and Information Technology (INEGI), employment is obtained based on the economically active population and an unemployment rate consistent with non-accelerated or stable inflation (NAIRU) and the capital stock is calculated by adding investment to an initial capital stock outlay assuming a specific and constant depreciation rate. In the calculation of the production function constant yields are assumed to scale, the parameters a and (1-a) are considered as a=0.35 and 1-a=0.65, which approximates the share of the corresponding factors in the national income. In this case K0 in 1960 is considered with the estimated capital stock in "Formación y acervos de capital en México, 1949-1999" ("Formation and Capital Stock in Mexico, 1949-1999") A. Mariña Flores, UAM Azcapozalco.
4 OECD Economic Outlook Ch.4: "Beyond the crisis: Medium-Term Challenges Relating to Potential Output, Unemployment and Fiscal Positions" 2009.
5 This is an accounting exercise that does not consider, for example, the gains derived from the greater availability of productive factors.

Economic Activity and Tax Collection

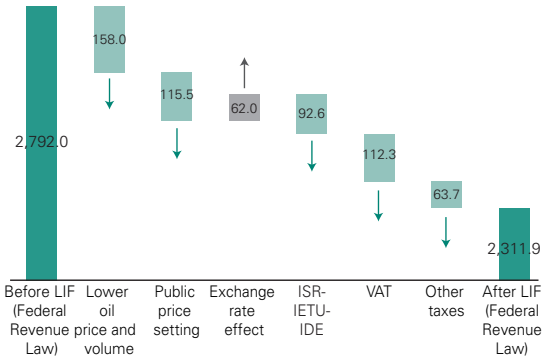
GDP, VAT, ISR (Income Tax), and IETU; annual % change, pm4Q



Source: BBVA Bancomer

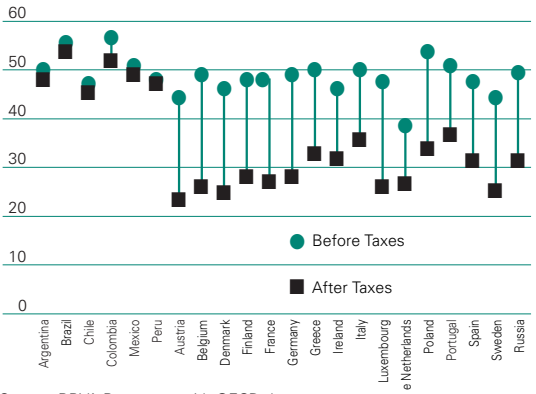
Adjustment in 2009 Public Revenues

Billions of pesos



Source: BBVA Bancomer

Economic Inequality



Source: BBVA Bancomer with OECD data

Under reasonable growth hypotheses, real rates and the primary budgetary balance, the Mexican public debt will maintain its downward trend without risks of non-sustainability. However, the current design of its fiscal policy—low tax revenues and revenue dependent on oil and annual budget equilibrium—makes it difficult to comply adequately with its role and may come to be a burden for economic development.

Since the end of 2008, the Mexican economy is undergoing one of the most acute recessions in recent decades, but—unlike the past—this recession originated abroad, rather than as a result of domestic factors. Also, as opposed to the past, the federal government was enjoying a more favorable fiscal position to be able to face the episode of contraction in activity. Years of prudence in the management of public finances—which implied a limited fiscal deficit and the reduction of risks on the public debt—allowed it to implement, from the end of 2008 through mid-2009, the first counter-cyclical expenditures policy.

Thus, the Executive induced increases in its expenditures (both current and capital) of approximately 1.13% of GDP. Despite this, the worsening of the economic crisis and the concurrence of other negative factors, such as the health contingency due to the flu, the bankruptcy of automobile assembly companies in the U.S. and the severe contraction in oil revenues (both due to price and to production) translated into a collapse in fiscal revenue from its sources most linked to activity (taxes on income and consumption) by almost 1.6% of GDP. This made evident the structural weaknesses in the tax system and in spending efficiency.

This environment led the federal government to seek changes in the tax design in the country that would allow increasing tax collection from its permanent sources and partially correcting the deficiencies of the tax regime, among which of note are: first, the high dependence on the price and production of oil—approximately 40% of budgetary revenue—which, in light of the decadence of production in the country, translates into a growing gap to be financed over time (see graph). Second, the reduced taxpayer base, which reflects in part special tax treatments and the complexity of complying. In Mexico, the number of "captive" taxpayers of individual income tax represent one sixth of the average number of registered taxpayers in OECD countries. Third, informality is favored, since the burden of tax payments on a reduced taxpayer base implies the transference of resources from the formal sector of the economy to the informal, through the use of public goods and services that are financed by taxes. This tends to generate the sub-provisioning of public services (both in quantity and quality) and reduces the growth potential of the economy.

Fourth, to correct the scarce tax neutrality, that is, to stop inducing "fictitious" economic advantages to activities under special treatment (for example: cero-rate and exempt VAT) in detriment of the rest

and, therefore, of aggregate productivity. Fifth, to promote a better distribution of income, inasmuch as the current system generates problems of inequality in the distribution of fiscal burdens and spending benefits. Sixth, to allow covering the permanent needs of public spending in the medium and long terms (for example: the provision of public goods).

In short, the current tax regime presents deficiencies in its collection capacity; it does not promote equality and it reduces the potential growth of the economy; it does not favor a better distribution of income; it does not provide certainty to the taxpayers in view of the continuous changes in tax regulations; and, it does not guarantee the efficient use of public resources.

The Revenues Budget for 2010: from an ambitious proposal in some aspects to a law that postpones the solution to the challenges that the fiscal policy is facing

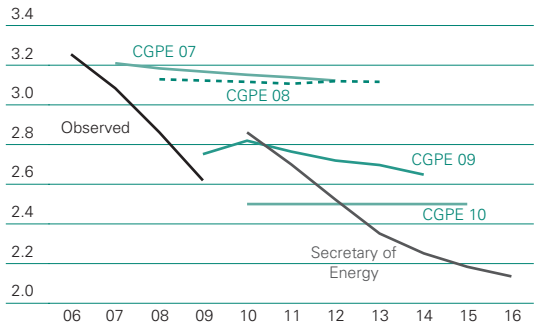
In its Budget and General Criteria Proposal of Economic Policy for 2010, the federal government announced a critical view regarding the conditions of public finances and argued the risk of "unsustainability" of the Mexican debt if structural tax reforms are not undertaken. Thus, the Finance Ministry (SHCP for its Spanish initials) estimated a drop in "structural" tax revenues (associated with the growth trend of the economy) of 12.5%, 7.4% and 1.8% for the coming three years, in relation with the approved level in 2009. This dynamics, together with the trend in spending levels and the contraction of economic activity, would imply an expansion of the government's net debt level of 2.1%, 1.9% and 1.6% of GDP in the coming years.

For this reason, the SHCP declared that, should this situation not be reverted through the application of measures for higher "structural" revenues and lower public spending, expansion of the debt in terms of GDP would increase. This would lead to rises in risk premiums for the country, higher interest rates and the deviation of programmable expenditures (for example: social and infrastructure) to non-programmable financial expenditures.

For 2010, the SHCP estimates that the gap between revenue and expenditures that must be financed, will be P$374 billion or 3.2% of GDP (see graph). Assuming that no use of resources will be made of stabilization funds or of any other non-recurrent funds, the total amount of net debt issues would be P$654 billion (5.5% of GDP) in order to cover the fiscal gap, the Pemex operation and other obligations (i.e.. Pidiregas, IPAB, the Debtors Program, etc.). This figure would represent close to double that of the debt issued in 2009.

According to the SHCP, close to 60% of the estimated fiscal gap for 2010 is attributable to a higher structural deficit—that is, that consistent with the trend in the growth course and lower oil production—, while the rest corresponds to the cyclical deficit—associated with transitory oscillations in the economy. Both definitions of the deficit generate different economic implications: whereas the cyclical balance is transitory, the structural ssumes

Oil Production
Official estimates, millions of barrels daily



Source: BBVA Bancomer with SHCP and Ministry of Energy data

Fiscal Expenditures Budget
% of GDP

	2008	2009
ISR (IncomeTax)	2.43	2.42
Corporations	1.53	1.52
Individuals	0.90	0.90
IETU	0.92	0.79
VAT	2.02	2.02
IEPS, ISAN, and ISTUV	1.91	1.18
Tax incentives	0.13	0.13
Total	**9.84**	**8.95**

Source: BBVA Bancomer with SHCP data

Tax Measures for 2010; Main Adjustments to the SHCP Proposal

Fiscal Pressure	Income-Expenditures Bill.	% GDP
Fiscal Gap (SHCP)[1]	**374.0**	**3.2%**
Cyclical Component	**155.0**	**1.3%**
Structural Component	**219.0**	**1.8%**

Coverage of gap	SHCP Prop. Bill.	% GDP	Dep. By Vote Bill.	% GDP
Cyclical Component				
Transitory Measures	**155.0**	**1.3%**	**183.9**	**1.6%**
Debt/ Additional Deficit	60.0	0.5%	88.9	0.75%
Stabilization Fund[2]	45.0	0.4%	45.0	0.4%
Non-recurrent revenues	50.0	0.4%	50.0	0.4%
Structural Component				
Permanent Measures	**219.0**	**1.8%**	**190.1**	**1.6%**
Expenditures Savings	74.2	0.6%	110.6	0.9%
New Taxes	155.3	1.3%	90.0	0.8%
Fiscal Efficiency[3]	20.4	0.2%	20.4	0.2%
Contributions and Adefas[3]	-30.9	-0.3%	-30.9	-0.3%

1. The tax gap considers the lower revenue received relative to the 09 LIF (Federal Revenue Law).
2.- Oil stabilization fund and other assets
3.- Coverage of the deficit is reconstructed as estimated by the SHCP in accordance with the Chamber of Deputies Ruling and assuming constant revenue and expense items other than taxes, deficits and savings (for example: participations).

Source: BBVA Bancomer with SHCP Budget Proposal for 2010 and Ruling to be voted on at 8 p.m., Mexico City.

Federal Revenue Law: SHCP vs. Ruling

Ruling by the Chamber of Senators
Billions of current pesos

	SHCP	Sen.	% Dif.
A.Federal Government Rev.	**2,036.7**	**1,997.2**	**-1.9**
A.1. Taxes	1,328.3	1,313.4	-1.1
ISR	651.1	640.8	-1.6
IETU	53.2	53.2	0.0
VAT	454.8	485.9	6.8
IEPS (Product. & Serv. Tax)	88.3	52.4	-40.6
ISAN, and Car Ownership	25.1	25.1	0.0
IDE /Cash Deposits Tax	13.1	13.1	0.0
Others	42.8	42.8	0.0
A.2 Pop. Combat Contrib.	**71.8**	**0.0**	
A.3 Other contributions	**0.1**	**0.1**	**0.0**
A.4 Public rights	**530.1**	**577.2**	**8.9**
Hydrocarbons	516.3	563.5	9.1
Others	13.8	13.8	0.0
A.5 Production and uses	**106.5**	**106.5**	**0.0**
B. Org. and Companies	**786.3**	**802.5**	**2.1**
B.1 Own Org, and Companies	**630.9**	**647.1**	**2.6**
Pemex	343.7	359.9	4.7
CFE (LyFC)	237.8	237.8	0.0
IMSS and ISSSTE	49.4	49.4	0.0
B.2 Social Sec. Contr.	**155.4**	**155.4**	**0.0**
C. Indebtedness and Financ.	**349.4**	**379.4**	**8.6**
Net Indebtedness	296.7	360.9	21.6
Other	52.7	18.5	-64.9
Total	**3,172.4**	**3,179.0**	**0.2**

Source: BBVA Bancomer w/ Chamber of Deputies and SHCP data.

Chronology of VAT Changes

	Inf.	TdC
1980 VAT starts (10% rate) replacing the tax on commercial revenues and the stamp tax	8.1	0.8
1981 Reduction of VAT exemptions	1.7	6.7
1983 Increase in the general rate from 10% to 15%; Special rate for border sales (6%) and rate for luxury goods (20%)	46.7	120.9
1991 Rate decreased from 15% to 10%	-3.7	7.3
1992 Substitution of special rates (6% and 20%) to 10% for border areas	-7.3	2.5
1995 Increase in the general rate from 10% to 15% but excluding border areas	27.8	90.2
2010 Rate increases from 15% to 16%		

Inf. Change in inflation compared to the previous year (pp, average)
TdC Exchange Rate, % y/y av. (+: depreciation)
Source: BBVA Bancomer

tax charges on future generations, and therefore implies an inter-temporary distribution of its discretionary level of income within an economy. Thus, if this structural deficit is not covered with permanent measures, the expansion of the debt would tend to grow and become unsustainable.

In order to finance this gap (3.2% of GDP), the Executive proposes covering the structural needs (1.8%) with permanent savings measures and spending efficiencies; and the cyclical needs with transitory measures such as a greater debt issue, the use of stabilization funds, and other non-recurrent revenue (1.3%).

In order to increase its permanent non-oil revenues, the SHCP has proposed rises in taxes on income, on consumption and on specific markets (IEPS for its Spanish initials) so as to broaden the taxpayer base; to obtain better progressiveness in its design; simplification in tax payments; and the direct assignment of revenues to ticketed expenses ("poverty"). Thus, the modifications proposed were:

(a) Special Tax on Production and Services (IEPS): in telecommunications, 4%; on tobacco with 80 cents per pack in 2010, which would rise to P$2 in 4 years; on beer with a rate increase from 25% to 28% during 2 years, that would drop gradually to 25% by 2014; alcoholic drinks with P$3 additional per liter; and games and drawings or raffles, the tax rate would increase from 20% to 30%.

(b) Income Tax (ISR/IETU): would be adjusted to the consolidation regime so as to limit it (5 years); and an increase in the maximum marginal rate for companies and individuals from 28% to 30%, which would be reduced 1pp per year in 2013 and 2014.

(c) Tax on Cash Deposits (IDE) with an increase from 2% to 3% and the tax exempt amount would be reduced from a monthly P$25,000 to P$15,000.

(d) A 2% Tax on Consumption called "Contribution to Combat Poverty" for which all consumption of goods and services would be taxed

(e) Public Prices: There would be a return to gradual adjustments in these prices (electricity, domestic gas and gasoline) to bring them in line with international reference prices (increase between 7% and 12% annually);

(f) Rights on hydrocarbons with a base oil price of 53.9 dpb.

These measures would imply an increase in tax revenue of P$155.3 billion (1.3% of GDP) that would be used to cover almost 70% of the "structural" deficit announced by the SHCP (see graph).

The Chamber of Deputies approved the collection proposals of the SHCP in Income Tax and Tax on Cash Deposits and in public prices. For hydrocarbon rights, the Lower Chamber opted to increase the oil price to US$59 per barrel, by which the income from oil extraction rights will be 9.1% higher than those requested by the Finance Ministry (a level that is feasible for 2010 as per our estimates). As regards the Special Production and Services Tax (IEPS), the Legislative Power lowered the increases in the tax rates in telecommunications (3% excluding Internet services) and beer (to 26.5%).

The greatest differences are observed in the tax on consumption when rejecting the 2% on a generalized base and, instead, approving a 1% increase in the general VAT rate, from 15% to 16% (from10% to 11% in the border areas), not affecting the zero VAT regimes (food and medicines) or VAT exempt activities. This decision implies that transfers of tax resources to activities with 0% VAT (food and medicines) will be higher, being that the companies will be able to credit, not 15%, but 16% of the VAT paid. With this, the tax subsidy (via the tax that can be credited) to food suppliers (0% VAT) could rise by P$5.8 billion in 2010 (from an estimated P$86.9 billion to P$92.7 billion).The tax subsidy to companies in the medicine branch would increase P$0.9 billion (from P$13.6 billion to P$14.5 billion).

The changes implemented by the Legislative Power would imply tax collection of 0.8%of GDP (vs. 1.3% requested by the SHCP) and a fiscal deficit of 0.75% (vs. 0.5%). To cover the fiscal gap estimated by the Finance Ministry (3.2% of GDP), the cutbacks in spending for 2010 should be more intensive (P$110.6 billion Instead of P$74.2 billion)[1]. The package approved implies that the net indebtedness of the public sector (P$360.9 billion) would grow up to 21.6% more than requested by the Executive. If we considered both this net indebtedness plus the deficit of companies directly managed by the government, the financial requirements would be in the order of P$379.4 billion, which represents an expansion of 43.1% compared to 2009 (see graph).

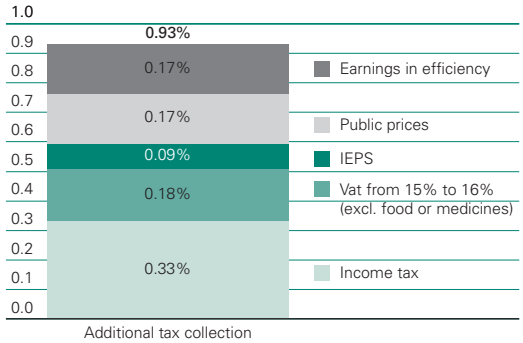
The resulting tax modifications for 2010 do not attend to the structural problems in public finances and leave for later the necessary structural reforms with regard to tax matters. First, the budgetary revenue continues to depend on oil flows since they represent close to 38% of the total revenues of the public sector. Second, the higher tax collection proposal is based—to a large extent—on captive taxpayers, which reduces their available income and deviates its use from more productive activities. Third, the reform accentuates the differences in tax treatment, which damages tax equality and neutrality in the country. Fourth, it does not take into consideration the monopolistic structures in the country, which, in addition to extracting economic income from the consumer population (due to overpricing in markets), have a great capacity in their accounting engineering to minimize tax payments. Fifth, it does not produce a better distribution of Income among the population.

The impacts on inflation and growth in 2010: delimited in magnitude and duration

The Mexican economy has faced the changes in the VAT rates on several occasions, the effects of which have been varied and have coincided with significant nominal and real distortions of the economy (for example: peso devaluations in terms of the exchange rate): while in some episodes, they coincide with abrupt losses in the value of the peso (1983), in others of note are the episodes when GDP contracted and there were bank crises (1995). This simultaneous combination of supply and demand shocks in the same year of reforms makes it difficult to isolate the impact of one economic fiscal shock on the

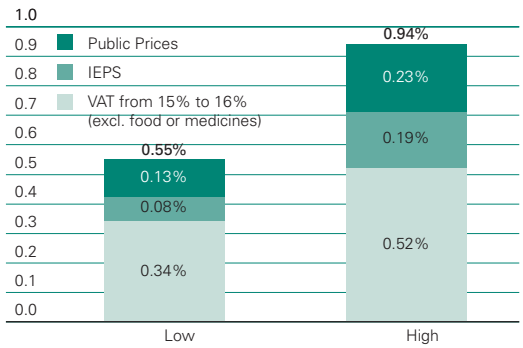
1 As this publication was closing, the Expenditures Budget of the Federation had not yet been approved.

Probable Additional Tax Collection after Tax Reform
% of GDP, 2010



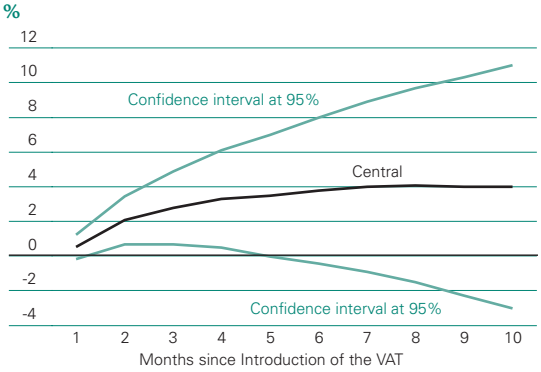
Source: BBVA Bancomer

Range of Inflationary Impact of the Tax Reform
High and low, average 2010, pp



Source: BBVA Bancomer

Accumulated Impact on the Price Level of Consumption from VAT Increase in 1995



Source: Werner A., Aportela F. (2002)

2010 Budget; Tax Increases

Impact on GDP, pp

Source: BBVA Bancomer

economy (see graph 11). Despite this, there is evidence that, in the past increase to the VAT (1995), the 5pp rise in the general rate had an effect close to 4pp of higher inflation in the cumulative for the year; that is, for each VAT point, inflation rose by 0.8 pp (see graph)[2].

On this occasion, the impacts of the tax effects on the determination of prices in the economy could be more delimiting to the extent that the current rise in taxes on consumption (of 1pp in the VAT) has not coincided with rises in substantial increases in foreign-exchange costs, although it has with regard to a depressed economic growth level. Notwithstanding this, there is evidence that the increases in the costs of the offerers—be they fiscal or of any other nature—tend to be transmitted quickly to the final consumers, although they do take time to be diluted. The same does not happen with drops in the costs (tax reductions or lower foreign exchange costs) since these take time to be transferred to the consumer. The above could be explained by not too competitive structures in the domestic markets, which would imply that the incidence of higher tax changes tends to be assumed by the consumer.

Price increases due to special taxes, rises in public prices (so as to bring them in line with their international levels) and the rise in taxes on consumption could imply a contribution to inflation close to 0.9 pp in the inflation trend of 2010 (estimated at 3.8%). By this, the annual average inflation of 2010 would be of 4.7%, in any case below that of 2009.

In particular, the impact on inflation from the VAT increase on prices to the consumer could be lower than in 1995, thanks to the financial stability obtained by Mexico currently, which has implied a relative containment of fluctuations in the exchange rate.

In terms of economic activity, taxes in 2010 will imply a decrease in the available income of individuals and in the net profitability of companies as a result of paying greater increases in income tax, and a reduction in the purchasing power following potential price increases. Both effects could translate into a transitory reduction in private consumption and in gross fixed investment in the economy, which would imply a negative contribution to GDP growth.

In order to quantify, from an aggregate perspective, the impact that the tax reform in 2010 could imply on inflation and growth, we used an econometric model of the Mexican economy that is subject to a negative shock of available income through the impact of the rise in inflation due to the new fiscal process. As can be observed in the attached graph, it seems reasonable to think that, in any case, regardless of the uncertainty, the downward impact on growth is limited in magnitude and delimited in time. The impact of the initial shock on inflation, in addition, would run out in 2011, which supports the thesis of a temporary and not a permanent impact, by which we can assume that the monetary pause would be maintained by the central bank throughout 2010.

2 "El Efecto Inflacionario de la Reforma al Impuesto al Valor Agregado de 1995" ("The Inflationary Effect of the Reform of the Value Added Tax (VAT) of 1995") by A. Werner and F. Aportela in Research Document No. 2002-01, Banco de México. January 2002.

Sustainability of the Public Debt in Mexico Depends on Structural Reforms

In Mexico, the policy of macroeconomic stabilization implemented in recent years that, among other measures, included the Budget and Treasury Responsibility Law that imposes the goal of zero public deficit, led to a reduction of the public debt as a percentage of GDP, less exposure to foreign debt, longer placement maturities, and lower real interest rates. With these results, the issue of the sustainability of public finances ceased to be a question of public debate. However, the recent decline in public revenue has put the issue back on the table and, contrary to the reality that developed economies are facing, this question is of greater importance in the case of Mexico given the greater uncertainty regarding its financing with the more negative outlook on oil production.

In this context, in this inset we discuss the degree of sustainability of the debt under different economic scenarios for the 2010-2035 period. The methodology used is that employed by Julio A. Santaella in "La viabilidad de la política fiscal" ("The viability of fiscal policy"), which repeats the proposal advanced by Talvi and Végh (2000). The approach to determining the sustainability of the public debt consists in the use of an intertemporal budgetary restriction for the public sector, which projects the evolution of the total net debt and an indicator on its sustainability. The calculation of the evolution of the debt is made through the following equation:

$$b_t = \frac{(1 + r)}{(1 + g)} b_{t-1} - St^*$$

In which b_t is the balance of the debt in period t as a percentage of GDP, r is the real interest rate, g is the GDP growth rate, b_{t-1} is the initial debt balance or the debt balance in the previous period and St* is the permanent primary surplus, which in this case we define as the average evolution of the primary surplus that we expect during the period. Parameters r, g, and St* will be assumed to be constant for the entire period.

The indicator of the debt's sustainability is elaborated through the following equation:

$$H_t^* = \frac{(r - g)}{(1 + g)} b_{t-1} - St^*$$

In which the term $\frac{(r - g)}{(1 + g)} b_{t-1}$ is the primary surplus in conditions of fiscal viability and St* it is the primary surplus to be spent ex ante. The fiscal viability indicator is interpreted as follows:

If $H_t^* \leq 0$ the fiscal policy is sustainable ex ante, since the permanent primary balance is greater than or equal to the interest payment on the debt, which implies that at least it will remain constant as a percentage of GDP. If $H_t^* \geq 0$ the fiscal policy is unsustainable ex ante, and if it is maintained as such, the debt balances will increase. Thus, the debt sustainability indicator tells us how much the primary balance can increase or decrease in order to keep the debt constant from one period to another.

Scenario 1, "Outlook for Reform"

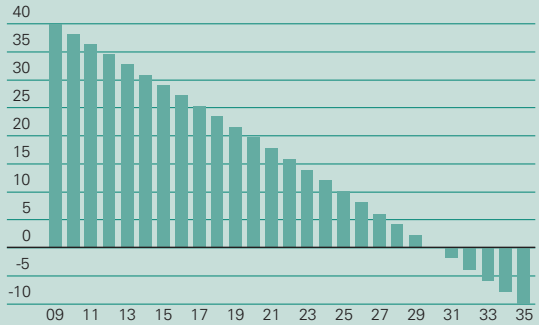
For the construction of all the scenarios the starting point is the assumption of a net debt balance equivalent to 40% of GDP at the close of 2009[1]. In this scenario we assume a real rate of 4%, which is very close to the average in 2000-2008, potential economic growth of 3.5%, close to one percentage point above our current estimates that do not consider the implementation of an intense process of economic reforms. We believe that this potential growth is feasible in a context of the approval of reforms that would make the economy more flexible and boost its capacity for growth. In addition, we are considering a permanent primary surplus of 2% of GDP, which is close to the average of the past 10 years, and consistent with the government's management of fiscal policy. The results are presented in the following graphs.

In this scenario, the debt is clearly sustainable and there is even a margin to reduce the primary balance by around 2%. This tells us that if the necessary structural reforms are implemented within a reasonable period of time, the debt should not represent a negative burden. On the contrary, there would be a margin to implement counter-cyclical policies (room for indebtedness). In fact,

1 Historical balances of public sector financial requirements through the second quarter of 2009—which represent a net stock of public sector obligations—include the public debt and the resources used to finance the social and private sector that operate at the behest of the government such as the Institute for the Protection of Bank Savings (IPAB) and the Trust to Support the Rescue of Concessioned Highways (FARAC), in addition to adjustments to the budgetary registries, the Deferred Impact Projects in the Expenditure Registry (PIDIREGAS), debtor support programs, and financial requirements of the development banks and development funds. It does not include contingent liabilities, such as those of the Mexican Social Security Institute (IMSS) (future payments for retirement and pensions), which would raise the level of the debt to more than 100% of GDP. But it does include the resources earmarked for the IMSS and the State Employees Social Security and Services Institute Housing Fund (FOVISSSTE) technical reserves, which are considered expenditures in financial investment.

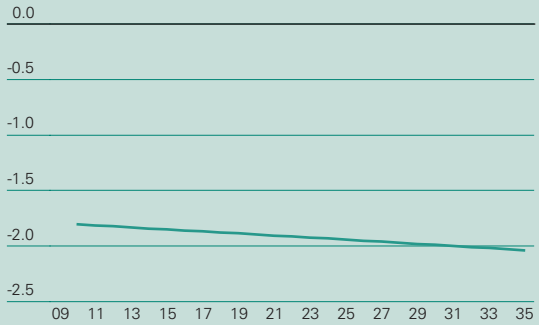
in this scenario the public debt is sustainable even if its initial level were greater. The key is that this scenario implicitly assumes that uncertainty on the capacity to finance public finances will diminish.

bt Scenario 1



Source: BBVA Bancomer

Ht* Scenario 1



Source: BBVA Bancomer

Scenario 2, "Inertial"

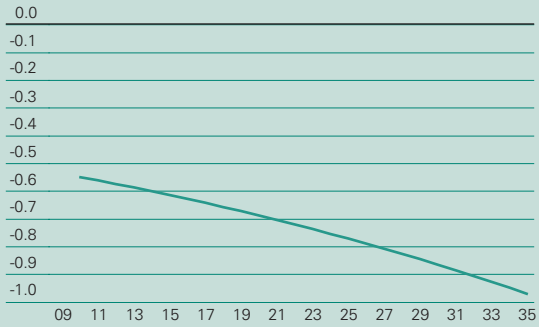
A context is proposed marked by the absence of economic reforms that would increase the potential growth of the economy. We contemplate a real interest rate of 5% in this scenario. This real rate assumes a negative differentiation of the country and higher risk premium due to public financing being dependent on oil revenue. The potential growth of the economy is assumed to be 2.5%, with a permanent primary balance close to 1.5% of GDP, which would be consistent with a gradual drop in non-tax revenue and the permanency of spending levels.

The results suggest a downtrend in the debt, although not as rapidly as in scenario 1. The margin for sustainability in public finances continues; in fact, in the short term, debt levels are quite sustainable, and there could be room to temporarily increase the debt. Nevertheless, the maneuvering margin for the primary balance decreases drastically, which leaves having balanced public finances too much exposed to extraordinary developments, such as a greater than expected decline in oil revenue. In the long term, and in face of the weakness in economic growth that could be chronic (due to the absence of reforms), this scenario could contemplate its gradual transformation toward a context of structural weakness that would question the quality of the debt issued by the federal government.

bt Scenario 2

Source: BBVA Bancomer

Ht* Scenario 2

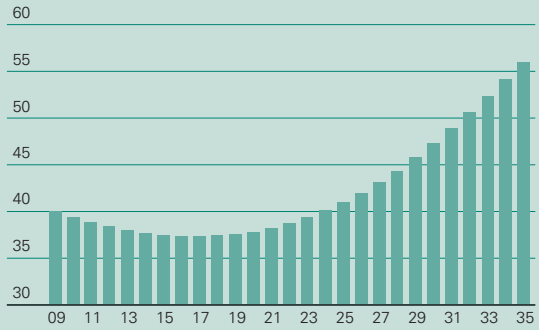


Source: BBVA Bancomer

Scenario 3, "Structural Risk "

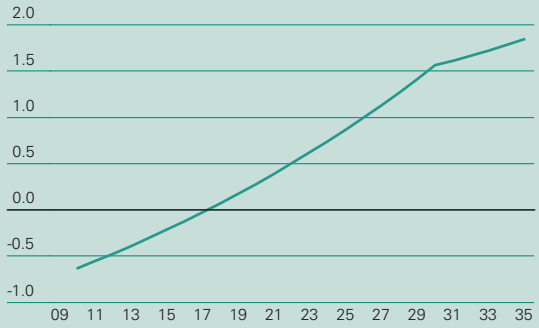
With the aim of also considering the possibility of facing an environment marked by chronic weakness in financing sources, a scenario has been simulated that considers an even higher real interest rate. This would be in response to the high risk premiums that the debt could face in a scenario of doubts on its sustainability coupled with a gradual decrease in the primary surplus. It is assumed that the primary surplus would tend to decline to zero (decreasing by the equivalent of 0.1% of GDP every year between 2010 and 2030) given the need to maintain the ratio of spending levels to the product stable. This scenario could occur with economic growth similar to that of Scenario 2 ("Inertial") so that in the final analysis, only the determining factors in the budgetary restriction would be subject to stress.

bt Scenario 3



Source: BBVA Bancomer

Ht* Scenario 3



Source: BBVA Bancomer

As can be seen, a rapid weakening of public finances occurs. The debt would be sustainable only for a period of time and would subsequently begin accelerated growth. This, in turn, should force the primary surplus to increase over almost the entire period only in order to be able to maintain the debt constant. This would be possible if strong reductions in spending are implemented, which, in turn, would have effects on economic growth.

Conclusion

The Mexican debt public is, under reasonable assumptions of growth, real rates and the primary balance, financially sustainable. However, if the implementation of structural reforms is deferred–reforms that would lead the economy along the road of greater growth and toward a new fiscal pact, sustainability would become less probable given the impact of these factors and of the inherent greater financing costs[2].

2 This will be a source of constant uncertainty for the markets, especially in periods of low oil prices. As Mendoza and Oviedo point out (2009), economic uncertainty naturally limits debt issuances and increases the probability of insolvency to the extent that this uncertainty significantly boosts the likelihood of default.

As can be seen in the chart, a primary balance of 1% of GDP year to year is required to ensure the sustainability of the debt with relatively low growth levels of for the country's economy. With the current design of fiscal policy—annual balanced budget and public revenue levels that are comparatively low and dependent on oil income—public spending would be the variable for closing the fiscal equation, subject therefore to a level and some fluctuations that would hinder the stabilizing and redistribution role that fiscal policy should play.

Debt Sustainability under Different Scenarios

Assumptions: g=2.5% and Bt-1=40%

	St*				
r	2.0%	1.5%	1.0%	0.5%	0.0%
4.0%	S	S	S	I	I
4.5%	S	S	S	I	I
5.0%	S	S	S	I	I
6.0%	S	S	I	I	I
7.0%	S	I	I	I	I

Note: S=sustainable, I=unsustainable
Source: BBVA Bancomer

At the same time, to the extent that the implementation of structural reforms spurs the country's economic growth, the debt would not be a problem even if fiscal discipline were relaxed somewhat and given scenarios of high financial volatility. For this reason we can conclude that in further freeing up Mexico's productive capacity, this will protect the economy from possible financial shocks such as those experienced in 2008. The chart summarizes these results.

Debt Sustainability under Different Scenarios

Assumptions: g=2.5% and Bt-1=40%

	St*				
r	2.0%	1.5%	1.0%	0.5%	0.0%
4.0%	S	S	S	S	I
4.5%	S	S	S	S	I
5.0%	S	S	S	I	I
6.0%	S	S	S	I	I
7.0%	S	S	I	I	I

Note: S=sustainable, I=unsustainable
Source: BBVA Bancomer

Bibliography:

Santaella, J (2001). *Gaceta de Economía*. ITAM, Mexico City

Mendoza, E. and Oviedo, P (2009). *Economía Mexicana Nueva Época*, vol. XVIII, no. 2, Mexico City

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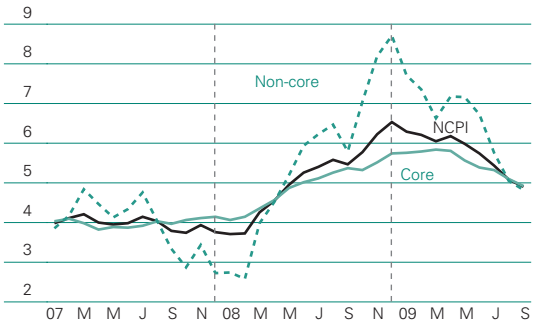
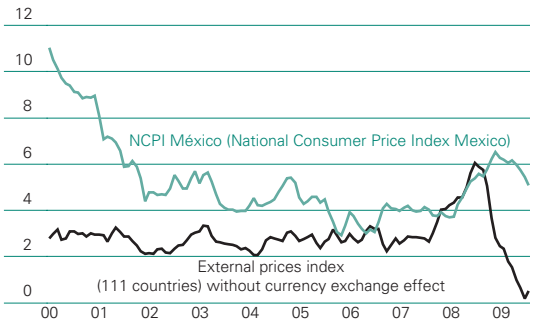
Inflationary Expectations and Interest Rates: Banco de Mexico Considers a Performance Margin

Inflation
Annual %



Source: BBVA Bancomer with Banco de Mexico data

Inflationary Evolution in Mexico vs. The Rest of the World
Annual %



Source: BBVA Bancomer with Banco de Mexico data

The tax increases approved for 2010 will increase inflation compared to previous expectations. Although the extent and duration will be limited, so that in 2010 average inflation will be lower than in 2009, the annual profile and risk that inflationary expectations will rise, will keep the central bank on guard. The margin that the central bank had considered in the management of its monetary policy leads us to believe that the monetary pause in 2010 will go beyond what was factored in by the markets.

Inflation will be spurred by higher taxes in a rigid environment in the domestic markets of goods, services and factors

The evolution of inflation in Mexico has been marked by supply shocks since the beginning of 2008—international price hikes in energy products and some agricultural products—which were intensified at the last quarter of the year following the abrupt depreciation of the peso. In this environment, inflation in Mexico reached its highest level since 2001 (an annual rate of 6.53% at the close of 2001).

While 2008 was characterized by upward pressures, the inflation dynamic of 2009 was determined by a strong contraction in aggregate demand and by the gradual normalization of the financial markets. With this, together with the policy of frozen public prices and favorable evolution of the prices of agricultural products, year-over-year inflation entered a slow declining process that could extend through the rest of the year and close the year at slightly under 4% (see Graph).

Despite this, the inflationary adjustment in Mexico, given the depressed global environment, was much lower than that seen in the prices of other economies: while in Mexico, the reduction of annual inflation has been 1.6 pp since its maximum level in December of last year (4.89% through September 2009), the reduction in weighted prices at which Mexico trades, was 5.6 pp versus its maximum (July 2008), to stand at an annual 0.5%. The slow correction downward of consumer prices in Mexico can be attributed to inflexible local market structures which can be associated with low levels of economic competition.

In 2010 the environment that marks the determination of prices in the country will change substantially. In the first place, the economy will be in a phase of moderate expansion, which will tend to curb the downward inflationary rate that we saw throughout 2009. In the second place, imported inflation could be maintained within contained ranges, to the extent that the period of relative stability in the exchange rate is extended and international prices do not present strong variations in view of an episode of slow recovery.

In the third place, the main source of disruption will come from the greater tax costs in 2010. Based on the experience of 1995 (the rise

in the VAT (value added tax from 10% to 15%) and the tightening of the local markets, we believe that the average annual inflation for all of 2009 could rise 0.75 pp, which would imply an increase in prices much lower than that of previous episodes of tax increases and a rise in public prices. This increase would generate a point of inflection on the descending course of inflation, which could be seen since the first quarter of 2010.

In terms of year-over-year variation, it is probable that the greatest pressures on an inflationary rise could be registered at the close of 2010, prompted by the unfreezing of fuel prices managed by the government (i.e., gasoline, electric power and domestic gas). For example, to converge domestic gasoline prices with their international counterparts, the increase at the close of the year could approach an annual 10%.

It is important to bear in mind that the tax increase is a one-time effect,. which will be corrected—in terms of the inflation level—as of 2011 and with this approach its long-term trend. Moreover, we believe that greater inflationary pressures could occur in case a tax reform is not approved, because if the weak income levels prevail, it is feasible that the Mexican economy will face greater financial risks and consequently pressures on exchange rate costs.

Considering the above factors, it is probable that inflation will stand at an average of 4.7% in 2010 (vs. 5.4% in 2009) and close at an annual rate close to 5.2%.

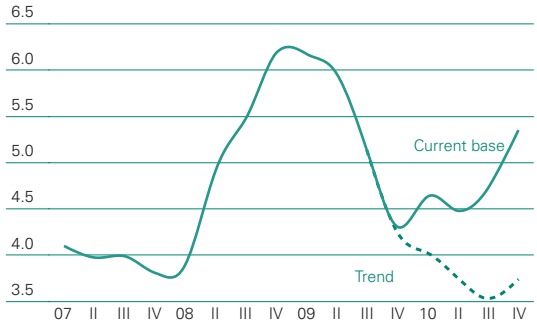
The rally in the financial markets continues, supported by the economic recovery, an abundance of liquidity and a lower aversion to risk

Despite the fact that the economic recovery observed to date has been very moderate in terms of historical standards, the rally initiated on the international markets in March has been maintained by discounting a scenario "at V" for the global economy. The determining factors have been the return to an appetite for risk and the abundance of liquidity. This has occurred in an environment of historically low interest rates in the developed markets, with expectations that they will continue low during a relatively prolonged period of time.

This greater appetite for risk has favored the return of capital flows to the emerging markets in a context of greater carry trade opportunities, with a significant increase in the yields derived from the sale of currencies that pay relatively low rates to purchase currencies that pay higher rates of return.

Under this environment, based on the MSCI Emerging Index, the stock exchanges of the emerging markets have been revalued almost 70% since the beginning of March to date. Also, this global context has led to an appreciation of the currencies of the emerging markets against the dollar, recovering a great part of the ground lost during the most intense period of the financial crisis (September 2008 -March 2009).

NCPI (National Consumer Price Index)
Annual %, average



Source: BBVA Bancomer

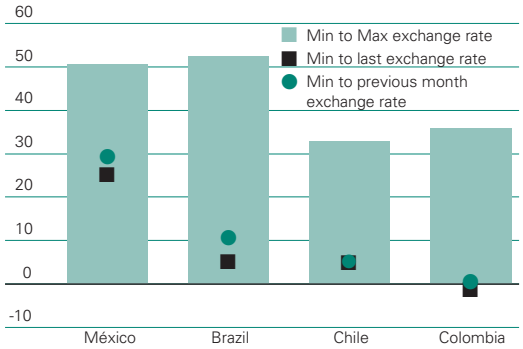
VIX and Emerging MSCI
Index January 01-2008=100, MSCI in local currency

Source: BBVA Bancomer

Liquidity Indicador in M Bonds
%

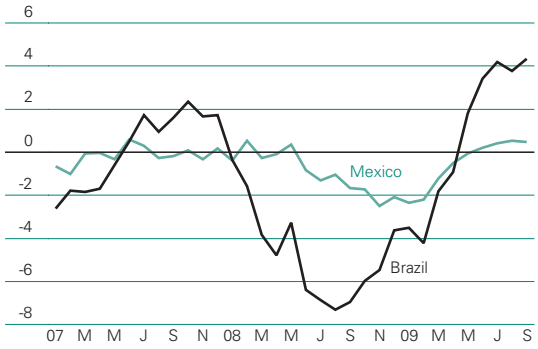
Note: Turn-over indicator: securities traded / securities outstanding
Source: BBVA Bancomer with Banco de Mexico data

Depreciation of the Exchange Rate
Sept. 01/08 to Oct. 21/09 period



Source: BBVA Bancomer with EPFR data

Net investment in stock exchange
Accrued 9 months, billions of dollars



Source: BBVA Bancomer with EPFR data

Foreign Investment in Domestic Bonds
Accrued 9 months, billions of dollars

Source: BBVA Bancomer with Banco de Mexico data

Another element of support for the emerging financial markets has been the contingent availability of abundant and cheap liquidity in dollars to ensure financing the gross needs of external liquidity of these economies—deficit in the balance of payments, maturity of corporate debt—through financial facilities granted such as the Flexible Credit Line (FCL) from the International Monetary Fund (IMF)[1] and the mechanisms of temporary currency exchange, the swap lines of the United States Federal Reserve Board (the Fed) [2].

In general, this rally in the financial markets has occurred, in our opinion, at a much faster pace than that consistent with the moderate dynamic observed in the global economic recovery. The context of a high appetite for risk and an abudance of liquidity, implies that the rally could be maintained in the short term, although probably with greater volatility, depending on the timely indicators of the real sector. Nevertheless, going forward, a weaker recovery than that considered by the markets could raise the aversion to risk.

Considering that the markets have risen strongly, and to curb the high entry flows, which could be of a speculative nature, some emerging markets have begun to adopt measures to moderate the intensity of those flows. This is the case of the 2% tax on portfolio investment recently adopted in Brazil (however, this measure has proven to have a very limited effect following its implementation) [3].

The negative differentiation toward various domestic financial markets compared with emerging economies with similar fundamentals is maintained, in particular with regard to the price of the peso versus the dollar.

Throughout the year, foreign capitals have begun to return to Mexico, albeit with a lower intensity compared with other emerging economies, in particular in the stock market. For example, based on data from the EPFRA Global (Global Fund Flows & Allocation Data Base), from January to September of this year, the net investment in securities funds (equities) in Mexico has been less than 2% of total investment in these funds in the emerging markets. In turn, Brazil this investment has represented more than 26% of the total[4].

In the case of debt funds, the net investment in the same period has been very similar in both countries (along the order of US$300 million, around 40% more than the total net flows in debt funds in the emerging markets). In fact, foreigners have begun to invest in the domestic bond markets and in this period, with Banco de Mexico data, net investment has surpassed US$870 million, which represents almost 9% of bond holdings among the net public.

1 Granted to Mexico (US$47 billion) and Poland (US$20.6 billion).
2 Extended for US$30 billIIon each to South Korea, Mexico, Brazil and Singapore.
3 Although it seems unlikely that other countries will adopt similar measures, it is also not impossible, much less so if the financial rally continues to grow at a greater intensity than that consistent with the global economic recovery.
4 It is important to also consider that structural factors such as the size and liquidity of the market are determining factors for the entry of capital flows to a country. In this case, Brazil has a capitalization that is more than double that of Mexico and triple that of companies listed on the stock exchange.

Given this negative differentiation toward Mexico, despite the recent wave of appreciations of foreign currencies against the dollar, the peso is among the currencies with the worst performance so far this year. In the last twelve months, countries in the region, such as Brazil, Chile and Colombia have spearheaded the trend, with nominal appreciations along the order of 30%, 27% and 21%, respectively. In turn, the appreciation dynamics of the Mexican peso has been far behind, only 2% in the same period. The peso has only marginally recovered part of the ground lost against the dollar since the crisis began to date, while the currencies of other emerging countries in the region are actually quoting at levels close to those of a year ago, and even better, such as the case of Colombia.

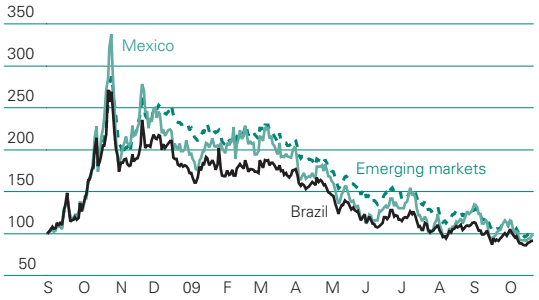
In turn, the dynamic of the EMBIs+ and 5-year CD spreads have reflected the greater appetite for risk, although, as with the exchange rate, a negative differentiation has been observed. In particular, the country risk level for Mexico, measured by the EMBI+ spread has shown an important downward adjustment but with much more pronounced and volatile fluctuations compared with the average for the emerging markets. Although the 5-year CDs, as a measure of non-payment risk, have suffered a significant downward correction since March of this year, they are at consistently higher levels than those of the emerging countries in the region, including those with a lower rating, such as the case of Brazil.

The monetary pause will be maintained, The perspectives for the exchange rate will depend on whether the appetite for risk is maintained and the negative differentiation diminishes if the advances occur in those reforms aimed at guaranteeing the sustainability of public finances, and the competitiveness and productivity of the overall economy

In view of the inflationary shock that could be derived from the tax package that is finally approved, and given the doubts regarding the strength of the economic recovery, the Banco de México has expanded its maneuvering margin with regard to monetary policy. In this way, the balance of risks of the central bank considers not only the effects on inflation that might result from the tax package, but also the evolution of the economy and the dynamic of the GDP gap, which is estimated to continue to be considerably negative during 2010.

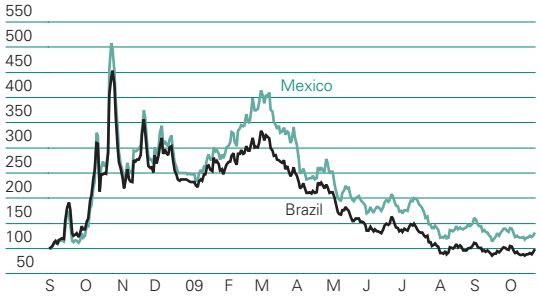
As regards the market's implicit expectations on the IRS (interest rape swap) curve, these suggest a rise in the funding rate, with the first increase expected between June and July 2010 and a 5.14% rate at the close of 2010. Also, the expectations of analysts also consider a rise in the funding rate to 5.7% on average, at the close of next year. At the BBVA Economic Research Department, we believe that the monetary pause, with a reference rate of 4.5% is feasible throughout 2010 as a consequence of two factors fundamentally. The first is that the negative GDP gap will be corrected very slowly going forward. The second is that the effect of the tax policy on inflation will generate a step upward in the price index that will not be long-lasting on the inflation rate, which should not affect medium-

EMBI +
Index Sept. 01/08 = 100



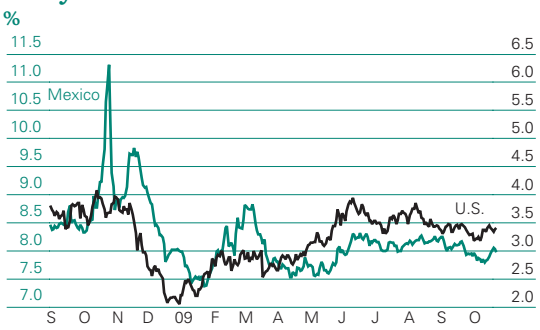
Source. BBVA Bancomer with Bloomberg data

Five-year CDs
Index Sept. 01/08 = 100



Source: BBVA Bancomer with Bloomberg data

Ten-year Interest Rates



Source: BBVA Bancomer with Bloomberg data

and long-term inflationary expectations. The risk, in case there is a more intense economic recovery, or an upward impact on inflationary expectations, is that the central bank will raise the reference interest rate as a preventive measure.

As regards long-term rates, these continue to show a downward tightness and the few adjustments observed have been for a very short term and in terms of fluctuations of the liquidity levels in the domestic debt market. In particular, the M10 interest rate continues to oscillate at around 8.0% despite the monetary easing and the gradual return of foreign capital to the domestic bonds market.

We foresee that, if the current excess liquidity and lower risk aversion is maintained, capital flows to Mexico should increase, although gradually, attracted above all by the broad spreads in interest rates and the search for greater yields. Because of this, we estimate an eventual drop in the long part of the curve to close the year at levels below 8.0% for this 2009.

Given the above, we believe that the duration of the monetary pause as well as the intensity of the adjustment in the long-term rates will depend to a great extent on the inflationary impact of the tax package for 2010 that is finally approved, as well as the progress that is made in the question of structural reforms. Also, inflationary expectations will play a significant role in the structure of short- and long-term rates. With regard to the rating agencies, they will continue to be expectant to analyze the budgetary measures that are finally approved for 2010.

Despite the favorable global environment, the peso has shown a significant resistance to converge with levels considered to be of equilibrium. Although at the beginning of the second half of the year, a certain adjustment began to be seen, it was marginal and overall the peso is posting a 25% greater depreciation than a year ago. With regard to its theoretical long-term equilibrium level, the Mexican currency's 13.4 pesos per dollar average through September of this year, implies an undervaluation level of more than 11%. If the current global environment in the markets is maintained, as well as the negative differentiation toward domestic financial assets, we expect the peso to fluctuate at levels close to 13.00 pesos per dollar at the end of this year and at around 12.70 ppd at the close of 2010.

Non-Linearity of Monetary Policy, A Focus on Risk Management

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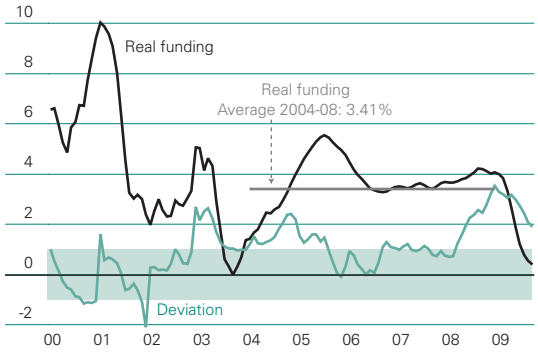
The importance of flexibility and preventive action of monetary policy

The anchoring of long-term inflation expectations in Mexico, which in the last three years have fluctuated within a narrow range at around 3.4%, has been a palliative when inflationary risks have risen in this time span. This anchoring is not due to the lower inflation level achieved in recent years, but to the credibility that the central bank has gained since it adopted the inflation target program. In this sense, there is a risk of complacency in view of the anchoring of inflation expectations. The best environment for the inflationary trend will be maintained if the economic agents maintain the credibility of the central bank. For this, it is useful that monetary policy act preventively if the shocks in the risk balance (inflationary or deflationary) are significant, and even with a downward probability, they could have an especially adverse effect, that is, a significant rise in long-term inflation expectations. In these circumstances it would be advisable for the central bank to take preventive actions in monetary policy.

Even when a central bank does not have a dual objective (inflation and growth), and its only goal is inflation, it should balance the risks of inflation and economic growth, above all to the extent that the latter affects the expected growth of prices. To achieve this—and make the best decision in terms of monetary policy—it is essential to consider the macroeconomic risks that prevent the equilibrium of the risk balance and/or could potentially do it. The most common case is avoiding that supply shocks in inflation have permanent effect, anticipating a contagion of long-term inflation expectations. A supply shock could generate greater uncertainty regarding the future evolution of inflation, which could produce an adverse effect on expectations. Such a situation could generate greater uncertainty, leading probably to an additional deterioration of inflationary expectations.

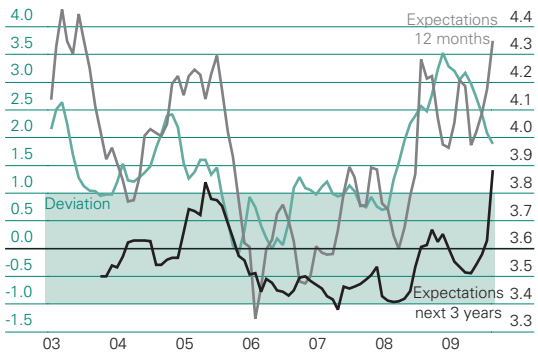
Because of this, it is absolutely necessary that monetary policy have flexibility and that it act in a preventive manner. A traditional Taylor rule in which monetary policy responds to the inflation gap (real inflation in terms of the inflation target) and the output gap, and to which is added the gap in interest rates to reflect the typical softness in monetary policy adjustments, which provides an approximation of how a central bank could respond to relatively normal circumstances. However, this approach could be less appropriate when some risk in the balance is unusually high. That is, the dynamic of the elements of the risk balance could be non-linear. For example, at some moment (i.e., early 2009) the balance of risks could be clearly inclined toward those of lower growth, or at some other time, this balance toward those of greater inflation (that is, long-term inflationary expectations showing an upward trend). If the balance shows a strong inclination toward some component of risk, the "optimum" monetary policy as a response to this non-linear dynamic of the variables within the balance of risks would also be non-linear. In other words, comprared with a normal situation in which the disequilibriums of the risk balance are

Real Funding and Deviation of Inflation from the Central Bank Target
%, expost, pm3m and pp



Note: Banco de Mexico inflation target: 10.0% in 2000, 6.5% in 2001, 4.5% in 2002, 3.0% +/- 1 pp since 2003
Source: BBVA Bancomer with Banco de Mexico data

12-Month Inflationary Expectations and Inflation Deviation from the Central Bank Target
% and pp



Note: Banco de Mexico inflation targets: 10.0% in 2000, 6.5% in 2001, 4.5% in 2002, 3.0% +/- 1 pp since 2003
Source: BBVA Bancomer with Banco de Mexico and Infosel data

not so great, monetary policy could imply a more rapid adjustment of the main instrument (i.e. interest rates). That is, although a tradiitonal Taylor rule suggests the appropriate evolution of monetary policy duirng normal periods, in the case of strong deviations in some variable of the balance (inflation or growth), it could be especially important to adopt a more flexible approach in monetary policy.

In this sense, if at a given moment, the deviations (non-linearities) in the variables of the balance are sufficiently strong so as to increase the probability of a particularly negative result, the central bank should act in a more flexible manner, focusing on risk management. The evolution of monetary policy in these cases would be explained in a better way by a non-linear Taylor rule[1].

Non-linear action by Banco de Mexico and with a focus on risk management in facing strong disequilibriums in the risk balance.

To maintain the credibility gained throughout the years, the central bank places special attention to transitory deviations of inflation with regard to the target and on whether the evolution of this deviation tends to be divergent or convergent with the target. The central bank responds to this factor in terms of its impact (current and potential) on inflationary expectations, especially long-term expectations. Since it adopted the inflation target plan in 2000, Banco de Mexico has responded to these deviations by adjusting its monetary policy (see Graph). It should be noted that the central bank's gains in credibility are evident in the response that has been considered necessary to revert the deviation of inflation from the target. During 2000, when it had barely established its first inflation target, the central bank responded in a significant manner to the deviation of inflation from the target. Toward the end of 2002 and during 2004-2005, it also responded in an important manner, although with less relative force. Finally, during the end of 2007 and 2008, it adjusted its real rate in view of the greater deviation that had been observed with regard to the inflation target, but the greater credibility (reflected in the stability of long-term inflation expectations) allowed it to have a not so firm response compared with the previous experiences.

Moreover, as shown in the graph, previously the deviations from the inflation target had a more important effect on medium-term inflationary expectations (those of the next three years). This is particularly noteworthy if we compare the effect on these that the deviation in inflation had with regard to the 2005 target, in terms of 2008. Partly due to this, in addition to the cyclical position of the economy, the response of the central bank—that is, the increase in the real rate—was less intense in 2008.

It is important to emphasize that the expectations of greater importance are long-term expectations. Because of this, their evolution is the most determining factor in monetary policy actions. Banco de Mexico responded more strongly during 2005 to the

1 See inset "An Alternative Approximation of the Estimate of the Monetary Policy Rule in Mexico". "

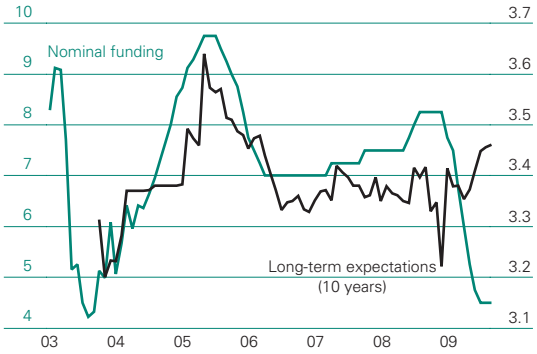
deviation of inflation from the target because its effect on long-term inflation expectations was greater and therefore, it was imperative to revert this effect (see Graphs).

A more recent event suggests that the central bank has acted in a non-linear manner and with a focus on risk management in facing strong disequilibriums in the risk balance. During 2Q08 and 3Q08, inflation deviated strongly from the target and the trend was divergent, as shown in the previous graphs. Moreover, short-term inflation expectations showed an important rally, while medium-term expectations showed an upward trend after having fluctuated within a narrow range between 3.4% and 3.5% during slightly more than two years. Banco de Mexico must surely have considered then that the deviation was sufficiently great to have increased the probability of a particularly adverse scenario: a rise in long-term inflation expectations. These remained anchored, probably in part due to the preventive increases by the central bank. In light of the non-linearities in the evolution of inflation, the central bank adopted a non-linear monetary policy and, acting in a flexible manner, decided to increase, preventively —(that is, with a focus on risk management—during the second quarter (+25bp) and the third (+50bp, two increases of +25bp each). As shown in the graph, the central bank acted with communication to prevent an increase in long-term inflation expectations, by raising the estimated course of inflation it postponed the consequence of the target, but it also raised the interest rate.

The central bank's monetary policy actions of recent years suggest that a non-linear estimation could be useful in anticipating the evolution of monetary policy in view of events diverging from a normal situation, and could lead to an intensification of risks, deviating the balance significantly toward one side (higher inflation) or another (lower growth).

Long-term Inflation Expectations (10 years) and Nominal Funding

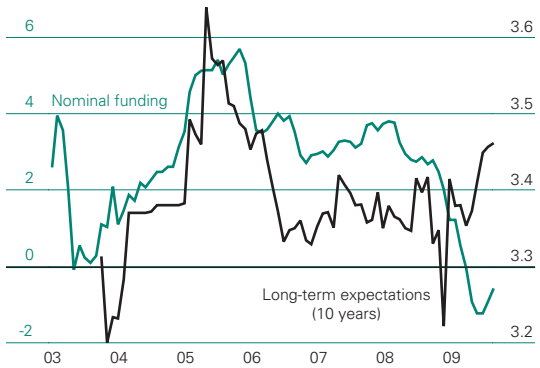
%



Source: BBVA Bancomer with Banco de Mexico and Infosel data

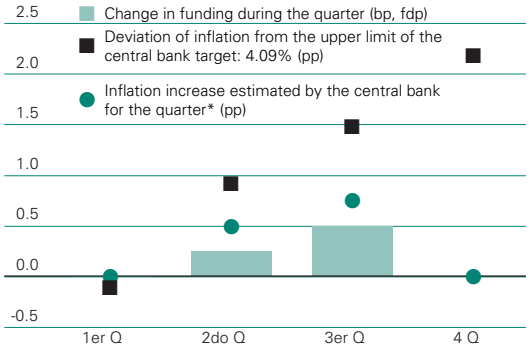
Long-term Inflation Expectations (10 years) and Real Funding

%, and %, expost, pm3m



Source: BBVA Bancomer with Banco de Mexico and Infosel data

Banco de México Monetary Policy During 2008



* New estimate disclosed in the last month of the previous quarter and compared with projected inflation in the quarterly report of previous inflation

Source: BBVA Bancomer with Banco de Mexico data

An Alternative Approach to Estimating the Monetary Policy Rule in Mexico

The literature on monetary policy rules has generated a vast array of empirical studies dealing with the implementation of monetary policy through the Taylor Rules[1]. In general, this approach favorably estimates the average behavior of short-term interest-rates, policy instruments of the central banks. Under a monetary policy with inflation targets or, if applicable, dual targets (inflation and economic growth), this empirical tool generally tends to opportunely delineate the course of monetary policy[2]. The case of Mexico has also been explored in different documents[3].

Nevertheless, the applicability of Taylor Rule estimates[4] to evaluate the monetary policy approach over a certain period of time, especially in extreme situations and in part due to the generality of its specification, tends to be less than optimum, and does not closely follow the monetary strategy implemented at such times. The central banks' balance of economic risks contemplates a much more complex range of action alternatives such as the likelihood of facing an extreme event, or when the occurrence of this development, although not very probable, could have severe effects on the behavior of prices and the economy. In addition, policy decisions face a factor known as the Brainard Principle, which sets forth that in a context of high uncertainty as to the effects that different shocks might have on inflation and economic growth, the central banks impose restrictions and operate more gradually while the economic scenario is clarified. This produces non-linear behaviors that clearly are not reflected by traditional Taylor Rules.

In Mexico, as explained in the previous section, the Banco de Mexico's strategy has consisted in applying a non-linear monetary policy with a focus on risk management when inflation deviates considerably from its target. Although a very specific Taylor Rule does reveal the average behavior of bank funding rates, it does not allow these characteristics of the central bank's response function to be evident.

An alternative is to estimate a monetary policy rule that considers the central bank's non-linear behavior (a hybrid rule). This strategy could quantify, in an alternative manner to the linear Taylor Rules, the latent uncertainty that monetary authorities face when implementing their monetary policy. For example, in a context of uncertainty on economic growth, this behavior could perhaps explain Banco de Mexico's tolerance of not very pronounced increases in inflation or, if applicable, the monetary authorities' more aggressive response as inflation deviates from its target, and once other risks have diminished.

Short-, medium- and long-term inflation expectations are more sensitive when the deviations between actual inflation and its target are greater. Thus, it could be understood that the central bank's behavior would be significantly different as growth in prices veers farther away from the established inflation target. In other words, in practice, the central bank could have asymmetric preferences with regard to movements in its target variables[5].

We have estimated two non-linear monetary reaction functions: hybrid Taylor Rules. The first non-linear monetary rule is a simple quadratic function. The second is a non-linear function whose solution to its initial values will determine the functional form of the Taylor Rule (Gauss-Newton estimate).

$$i_t = c + \beta_1 (\varpi_1 - \hat{\varpi}) + \beta_2 (\varpi_t - \hat{\varpi})^2 + \beta_3 (i_{t-1}) + \beta_4 (y_t - \hat{y}) + e_t \quad (1)$$

$$i_t = c + \beta_1 (\varpi_1 - \hat{\varpi}) + \beta_2 (\varpi_t - \hat{\varpi})^{\alpha} + \beta_3 (i_{t-1}) + \beta_4 (y_t - \hat{y}) + e_t \quad (2)$$

in which i is the bank funding rate, ϖ is observed or actual inflation, $\hat{\varpi}$ is target inflation, y is observed GDP (logarithm) and $\hat{y}$ is potential GDP.

The chart shows the results of the estimates (monthly and quarterly data for the 1996-2009 sample)[6]. Parameter β_4 has been excluded, given that it is not significant in any of the specifications, and it tends to present very small and contrary values. To the extent that a significant non-linear behavior is presented in deviations from the inflation target, and this reflects Banco de México's asymmetric preference, the slight weight of the output gap is understandable. This asymmetric preference

1 See Taylor., ed (1999) and Orphanides (2007)
2 See Bernanke et al. (1999), and Taylor (1999)
3 See Torres (2002), and Hernández (2005)
4 In general, the specification of a Taylor Rule takes the following form (also known as the central bank reaction function: $i_t = \alpha + \beta_1 (\varpi_t) + \beta_2 (y_t) + \beta_3 i_{t-1} + \varepsilon_t$, in which i is the short term interest rate, ϖ is the deviation from the inflation target and y is the output gap.
5 See Cukierman (2004)
6 The bank funding rate is, in fact, the deviation of bank funding in relation to its trend. The aim is to soften its behavior, especially in the first years of the sample.

could already be implicitly contemplating the dynamism of the output gap. For example, the resistance to raising the funding rate as long as inflation does not rise above some reference level could be associated with a context of moderate economic growth, or vice versa.

Non-linear Taylor Rule Estimates

	β_1	β_2	β_3	R^2
		Quarterly		
Est 1	-0.020	0.963	0.690	0.85
	(-.036)	(3.653)	(5.178)	
Est 2	0.006	1.085	0.620	0.73
	(2.385)	(1.761)	(8.050)	
		Monthly		
Est1	-0.102	0.859	0.810	0.95
	(-1.661)	(2.439)	(4.407)	
Est 2	-0.137	2.991	0.906	0.61
	(-0.528)	(1.609)	(9.931)	

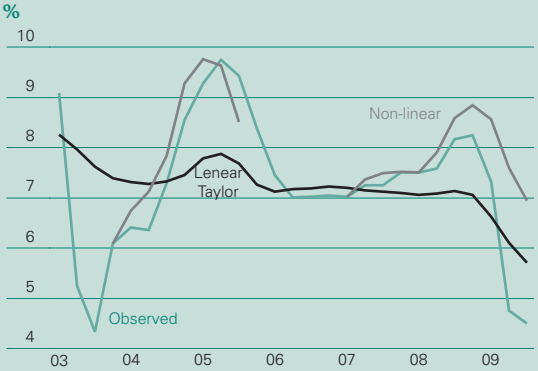
Note: t_statistics in parenthesis
Source: BBVA Bancomer

In all the cases, the β_1 value is very low, and in some specifications it is not significant. Meanwhile, the β_2 parameter is always statistically significant, and its range goes from 0.85 to 2.99. This suggests that given the functional form of the equations, the minimum value starting from which the funding rate begins to significantly react to inflation deviations is practically zero $| \beta_1 / (\alpha * \beta_2) |$. Based on this reference point, if inflation deviation from the target occurs, according to these hybrid Taylor Rules, the central bank will react, and do so more aggressively as the deviation from the target is greater.

The correct way of interpreting the changes in the funding rate is approximating these reaction functions to: $\Delta i_t = \hat{\beta}_1 + \alpha\hat{\beta}_2 (\varpi_t - \hat{\varpi})$. Thus, according to the average of the four models, and considering the effect of the progressivity of monetary policy encompassed by parameter β_3, when inflation strays 0.5% from its target, funding rates move 18bp. When the deviation reaches 1.0%, the change in the funding rate is 70bp, when the gap is 1.5%, monetary policy slips by 180bp, and finally when the benchmark rate veers by 2.0%, the funding rate changes by 296bp. The non-linear effect can be seen once inflation strays from its target by 0.5% to 1.0%. With a 0-0.5% gap, the funding rate rises 18bp, but from 0.5% to 1.0%, it increases 50bp, while from 1.0% to 1.5% the rising movement is 110bp, and from 1.5% to 2.0%, 116bp.

The graph illustrates the behavior of the funding rate observed, the rate throughout the sample estimated by a linear Taylor Rule, and the rate estimated by a non-linear Taylor Rule1 for two different periods, the first from 4Q03 to 4Q05, and the second from 1Q07 to 2Q09 (the inflation target was assumed to be 3.5%, mid-way in the variability range). We would not compare the entire sample, since the central banks modify their behavior according to the circumstances that they face, responding in a linear fashion on occasions and in a non-linear manner at other times. In the future, and with a sample richer in terms of economic and monetary cycles, the methodology of progressive transition regression could be used[7].

Funding Rate: Observed and Estimated



Source: BBVA Bancomer with Banco de México data

The estimates are dynamic, that is, they use the value projected in the previous period as the lagged value i_t. As can be seen, the linear Taylor Rule, with an accumulation of errors, illustrates the trend in funding rate fluctuations, but the magnitude of the changes gets lost when these are important. The non-linear estimate, on the contrary, projects the intensity with which the funding rate will be adjusted in response to pronounced inflation deviations, although it tends to overestimate the correction. In addition and although it anticipated the decline in the funding rate as of 1Q09, the projection was far from the monetary approach implemented by the central bank in response to the economic recession. This error occurs given that there are no periods with similar characteristics, in which it is possible to codify, as in the case of inflation deviation from the target, non-linear behaviors

7 See Petersen (2007)

of the monetary rule in response to severe adjustments in the output gap. As Cukierman and Muscatelli (2007) argue, the asymmetric preferences of the central banks' target functions change over time in terms of the main macroeconomic problem to be faced at the moment.

In conclusion

Banco de Mexico's strategy has been to avoid particularly adverse effects on inflation, albeit with a low probability. Thus, at certain times, the central bank has adopted a more flexible, non-linear monetary policy and with a focus on risk management. In this sense, it has acted preventively to avoid inflation veering from its target from having an effect on long-term expectations, as it has had on short-term expectations.

This suggests that, during certain periods, the central bank maintains a non-linear behavior as regards inflation deviating from the target. Our estimates suggest that this behavior can be expressed through non-linear Taylor estimates, an instrument to approximate sensibility to unwanted risk scenarios. This non-linear dynamism is the result of the central banks having asymmetric and changing preferences regarding the movements of their target variables. The degree of asymmetry is determined by the economic circumstances of the moment. For example, the implementation of monetary policy is different when the central banks feel that the probability of facing an extreme event increases, or when the occurrence of this development, although with low probability, could have severe effects on the behavior of prices and on economic performance. In addition, on occasions, the final effects that different shocks could have on inflation and economic growth are not fully known, an uncertainty that imposes a greater degree of progressivity in monetary policy, but once the impact of these shocks is more clearly revealed, the response is more severe.

Bibliographical References

Bernanke, Ben S., et al. (1999). "*Inflation Targeting: Lessons from International Experience*". Princeton University Press.

Cukierman, A., and Muscatelli, A. (2007). "*Non Linear Taylor Rules and Asymmetric Preferences in Central Banking - Evidence from the UK and the US*". CEPR. DP6428

Cukierman, A. (2004). "*Non Linearities in Taylor Rules - Causes, Consequences, and Evidence*". Banco Central de Uruguay.

Hernández, Ociel (2006). "*Transmisión de choques macroeconómicos: modelo de pequeña escala con expectativas racionales para la economía mexicana*" ("*Transmisión of macroeconomic shocks: small-scale model with rational expectations for the Mexican economy*")

Hernández, O. and Amador, J. (2008). "*La tasa natural en México: un parámetro importante para la estrategia de política monetaria*" ("*The natural rate in Mexico: an important parameter for monetary policy strategy*").

Mishkin, Frederic S (2007). "*Inflation Dynamics*".

Mishkin, Frederic (2008). "*Monetary Policy Flexibility, Risk Management, and Financial Disruptions*".

Orphanides, Athanasios. "*Taylor Rules*". FEDS. 2007-18

Petersen, K. (2007). "*Does the Federal Reserve Follow a Non-Linear Taylor Rule?*". University of Connecticut. WP 2007-37

Taylor, John B., ed (1999a). Monetary Policy Rules. Chicago: University of Chicago Press.

Taylor, John B. (1999b). "*Using Monetary Policy Rules in Emerging Markets*". Draft.

Taylor, John B (2000). "*Using Monetary Policy Rules in Emerging Market Economies*". Revised.

Torres, García Alberto (2002). "*Un análisis de tasas de interés en México a través de la metodología de reglas monetarias*". Banxico Documentos de Investigación. 2002-11. ("*An analysis of interest rates in Mexico through the methodology of monetary rules*". Banco de Mexico Research Documents. 2002-11.)

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United States Indicators and Forecasts

	2008	2009	2010	I'09	II'09	III'09	IV'09	I'10	II'10	III'10	IV'10
Economic Activity											
GDP (US$ billions)	14,441	**14,293**	**14,743**	14,178	14,151	14,302	**14,540**	**14,641**	**14,680**	**14,706**	**14,944**
Nominal growth (%)	2.6	**-1.0**	**3.1**	-1.4	-2.4	-1.7	**1.3**	**3.3**	**3.7**	**2.8**	**2.8**
Real growth (%)	0.4	**-2.5**	**1.5**	-3.3	-3.8	-2.3	**-0.4**	**1.6**	**2.0**	**1.4**	**1.2**
GDP deflactor	2.1	**1.5**	**1.6**	1.9	1.5	0.7	**1.8**	**1.7**	**1.7**	**1.3**	**1.6**
Personal consumption (real % change)	-0.2	**-0.8**	**0.3**	-1.5	-1.7	0.0	**0.3**	**0.2**	**0.5**	**-0.1**	**0.6**
Government consumption (real % change)	3.1	**2.0**	**4.4**	1.7	2.5	1.8	**2.0**	**4.2**	**4.0**	**4.5**	**5.1**
Gross fixed investment (real % change)	-5.1	**-18.3**	**-0.9**	-18.8	-21.0	-18.8	**-14.5**	**-4.1**	**-0.6**	**-0.3**	**1.6**
Construction[1]	-22.9	**-20.3**	**1.7**	-23.9	-25.6	-18.1	**-12.6**	**-1.9**	**5.4**	**1.0**	**2.5**
Industrial production (real annual % change)	-2.2	**-10.1**	**-8.1**	-11.6	-12.9	-9.7	**-6.3**	**-8.1**	**-8.1**	**-8.1**	**-8.1**
External Sector (constant US$ billions)											
External balance	-494	**-351**	**-382**	-387	-330	-348	**-338**	**-350**	**-369**	**-396**	**-413**
Total exports	1,629	**1,435**	**1,385**	1,435	1,420	1,469	**1,416**	**1,391**	**1,377**	**1,379**	**1,393**
Total imports	2,124	**1,786**	**1,767**	1,821	1,750	1,817	**1,754**	**1,740**	**1,746**	**1,775**	**1,806**
Current account balance (% of GDP)	-4.9	**-2.6**	**-2.0**	-2.9	-2.8	-2.8	**-2.1**	**-1.6**	**-2.0**	**-2.4**	**-2.0**
Prices (annual % change)											
Final annual inflation	0.1	**0.9**	**1.7**	-0.4	-1.4	-1.3	**0.9**	**1.1**	**0.8**	**0.7**	**1.7**
Average annual inflation	3.8	**-0.7**	**1.1**	0.0	-1.2	-1.6	**0.2**	**1.0**	**1.1**	**1.0**	**1.4**
Other Indicators											
Primary fiscal balance[2] (% of GDP)	-3.2	**-9.9**	**-9.5**	—	—	—	**-9.9**	**—**	**—**	**—**	**-9.5**

1 mmd Miles de millones de dólares
2 Fiscal Balance (% of GDP)
Note: Balances Fiscales (% PIB)
Nota: pronóstico aparece con **negritas**

Mexico Indicators and Forecasts

	2006	2007	2008	2009	2010	I'09	II'09	III'09	IV'09	I'10	II'10	III'10	IV'10
GDP (seasonally-adjusted series)													
Real annual % change	5.1	3.3	1.4	**-7.2**	**3.1**	-8.4	-9.7	**-7.1**	**-3.5**	**2.5**	**4.5**	**2.9**	**2.4**
Per inhabitant (US dollars)	9,075	9,687	10,292	**8,110**	**8,880**	7,439	7,893	**8,501**	**8,606**	**8,497**	**8,583**	**9,102**	**9,337**
US$ billions	952	1,025	1,098	**872**	**963**	800	849	**914**	**926**	**921**	**930**	**987**	**1,012**
Inflation (average, %)													
Headline	3.6	3.8	5.1	**5.4**	**4.7**	6.2	6.0	5.1	**4.3**	**4.6**	**4.4**	**4.7**	**5.2**
Core[1]	3.5	3.8	4.9	**5.3**	**4.6**	5.8	5.6	5.1	**4.5**	**4.4**	**4.5**	**4.7**	**5.0**
Financial Markets (eop, %)													
Interest rates													
Bank funding	7.0	7.5	8.3	**4.5**	**4.5**	6.8	4.8	4.5	**4.5**	**4.5**	**4.5**	**4.5**	**4.5**
28-day Cetes	7.2	7.4	8.0	**4.5**	**4.6**	7.0	5.0	4.5	**4.5**	**4.5**	**4.5**	**4.5**	**4.6**
28-day TIIE	7.5	7.9	8.7	**4.9**	**4.9**	7.7	5.3	4.9	**4.9**	**4.9**	**4.9**	**4.9**	**4.9**
10-year Bond (average)	8.4	7.8	8.4	**8.0**	**7.7**	8.0	7.9	8.1	**7.9**	**7.9**	**7.7**	**7.5**	**7.6**
Exchange rate (average)													
Pesos per dollar	10.9	10.9	11.1	**13.5**	**13.0**	14.4	13.3	13.3	**13.1**	**13.2**	**13.2**	**13.0**	**12.7**
Public Finances*													
FRPS (% of GDP)	0.1	-1.1	-2.1	**-3.0**	**-3.7**	—	—	—	**-3.0**	**—**	**—**	**—**	**-3.7**
External Sector[2]													
Trade balance (US$ billions)	-6.1	-10.1	-17.3	**-8.4**	**-14.6**	-2.0	0.8	-3.1	**-4.1**	**-2.6**	**-1.5**	**-4.9**	**-5.7**
Current account (US$ billions)	-4.4	-8.3	-15.8	**-9.1**	**-15.1**	-3.5	0.5	-0.4	**-5.7**	**-5.4**	**-1.2**	**1.4**	**-9.9**
Current account (% of GDP)	-0.5	-0.8	-1.4	**-1.0**	**-1.5**	-1.6	0.3	**-0.2**	**-2.6**	**-2.2**	**-0.5**	**0.6**	**-4.0**
Oil (Mexican mix, dpb, eop)	53.1	61.7	84.4	**54.6**	**59.8**	39.4	60.1	64.1	**54.6**	**57.2**	**60.5**	**60.1**	**61.4**
Employment													
Formal Private (annual % change)	3.2	14.0	2.0	**-3.2**	**1.7**	-2.3	-3.8	-4.2	**-2.5**	**-0.1**	**1.9**	**2.5**	**2.4**
Open Unemployment Rate (% active pop.)	28.1	3.7	4.0	**5.5**	**5.3**	4.8	5.7	5.9	**5.8**	**5.6**	**5.4**	**5.2**	**5.0**
Aggregate Demand[4] (ann. % chge., seasonally-adjusted)													
Total	6.9	4.2	2.2	**-11.5**	**2.7**	-12.1	-14.2	**-12.6**	**-7.0**	**0.7**	**4.3**	**2.8**	**3.2**
Domestic demand	6.2	4.3	2.1	**-7.6**	**2.4**	-6.8	-9.3	**-8.9**	**-5.2**	**0.8**	**3.1**	**2.7**	**3.0**
Consumption	5.1	3.6	1.5	**-6.5**	**3.1**	-7.2	-7.9	**-7.1**	**-3.7**	**2.4**	**3.4**	**3.5**	**3.3**
Private	5.7	3.9	1.6	**-7.7**	**3.2**	-8.8	-9.3	**-8.4**	**-4.4**	**1.9**	**3.4**	**3.7**	**3.8**
Public	1.7	2.1	0.6	**1.7**	**2.7**	3.7	1.0	**1.0**	**1.1**	**5.0**	**3.5**	**1.9**	**0.2**
Investment	10.4	6.7	4.2	**-11.2**	**-0.3**	-5.2	-14.0	**-14.9**	**-10.4**	**-4.6**	**1.9**	**-0.4**	**2.0**
Private	13.0	5.7	1.9	**-18.7**	**-2.8**	-13.8	-23.6	**-21.8**	**-15.1**	**-8.9**	**-0.1**	**-3.0**	**1.5**
Public	-1.6	10.8	13.2	**14.8**	**5.7**	29.5	23.7	**8.1**	**2.3**	**6.8**	**6.9**	**5.8**	**3.2**
External demand	11.0	5.6	1.5	**-20.8**	**2.2**	-20.4	-24.3	**-22.9**	**-14.8**	**-2.7**	**5.0**	**3.2**	**3.5**
Imports	12.7	6.9	4.6	**-24.0**	**1.5**	-22.6	-27.1	**-27.9**	**-17.7**	**-5.6**	**3.5**	**2.5**	**6.0**
GDP by sectors (ann. % chge., seasonally-adjusted)													
Primary	6.0	2.1	3.2	**3.0**	**3.8**	2.3	0.7	**4.9**	**4.4**	**12.0**	**0.4**	**2.1**	**1.9**
Secondary	5.8	2.5	-0.6	**-8.5**	**3.4**	-11.1	-11.6	**-7.6**	**-5.0**	**2.5**	**4.9**	**3.7**	**2.6**
Mining	1.4	-0.6	-2.3	**-0.5**	**0.8**	-2.1	0.7	**0.0**	**-1.5**	**-0.6**	**0.5**	**0.4**	**2.8**
Electricity	12.1	3.7	2.3	**-0.3**	**3.8**	-3.2	-1.4	**1.7**	**1.6**	**1.9**	**5.7**	**5.1**	**2.1**
Construction	7.6	4.4	-0.6	**-6.8**	**4.1**	-9.4	-9.2	**-5.6**	**-4.9**	**1.9**	**4.2**	**4.9**	**5.5**
Manufactures	5.9	2.6	-0.4	**-12.0**	**3.9**	-14.8	-16.3	**-11.2**	**-6.5**	**3.8**	**6.6**	**4.1**	**1.5**
Tertiary	5.2	4.0	2.1	**-7.0**	**3.0**	-7.8	-10.1	**-7.4**	**-3.2**	**2.5**	**5.0**	**2.4**	**2.2**
Retail, restaurants and hotels	6.5	4.6	2.9	**-15.2**	**4.1**	-17.0	-20.6	**-15.6**	**-7.2**	**4.3**	**9.1**	**1.6**	**2.1**
Transportation, mail and warehouse	5.6	3.7	0.9	**-9.4**	**2.4**	-10.2	-13.4	**-9.6**	**-4.1**	**0.0**	**6.9**	**2.0**	**0.9**
Masive media information	10.6	10.0	8.0	**2.2**	**8.7**	4.2	2.1	**0.6**	**3.7**	**8.5**	**9.3**	**8.8**	**8.2**
Financial and insurance	16.7	11.2	-1.2	**-4.1**	**3.5**	-4.4	-7.0	**-3.1**	**-0.8**	**2.8**	**4.1**	**3.9**	**3.0**
Real-estate and rent	4.1	3.0	3.2	**-5.4**	**3.9**	-10.2	-6.8	**-4.2**	**-1.5**	**4.6**	**4.4**	**3.4**	**3.5**
Prof., cientific and technical servs.	3.0	3.1	2.3	**-4.1**	**1.1**	-2.2	-4.5	**-5.3**	**-3.7**	**0.6**	**2.2**	**1.1**	**1.0**
Company and corporate management	19.7	-2.9	4.3	**-8.0**	**-0.1**	4.3	-3.6	**-14.4**	**-15.1**	**-9.0**	**-4.5**	**5.7**	**7.3**
Business support services	3.7	3.1	1.5	**-4.4**	**1.1**	-1.5	-7.0	**-4.9**	**-3.7**	**0.1**	**2.1**	**1.3**	**1.2**
Education	0.1	2.1	0.9	**-5.6**	**0.2**	0.0	-16.9	**-4.1**	**-2.2**	**-1.5**	**1.2**	**0.7**	**0.5**
Health and social security	7.8	-0.5	1.1	**-1.2**	**0.3**	-1.4	3.6	**-3.6**	**-3.6**	**-1.4**	**0.3**	**1.3**	**0.9**
Cultural and sport	2.2	3.5	1.7	**-3.5**	**0.3**	-3.4	-3.5	**-3.7**	**-3.1**	**-1.4**	**0.9**	**0.8**	**0.4**
Temporary stay	1.6	2.5	0.9	**-6.7**	**5.9**	-7.1	-16.3	**-3.4**	**1.7**	**7.0**	**12.8**	**3.4**	**1.2**
Other services exc. government	3.3	3.9	1.8	**-3.4**	**0.3**	-1.9	-4.8	**-3.6**	**-3.2**	**-0.9**	**0.8**	**0.6**	**0.6**
Government activities	-0.3	1.2	0.0	**1.9**	**0.0**	3.0	5.9	**-1.9**	**-1.1**	**0.1**	**-2.5**	**1.4**	**1.1**

eop end of period
dpb dollars per barrel
FRPS Financial Requirements of the Public Sector
na not available
Note: **Bold** figures are forecast

1 Core index that does not include education
2 Accumulated, last 12 months
3 Banco de México data
4 Base 1993=100; GDP by sectors base 2003=100. The observed data of the primary, secondary and tertiary sectors are seasonally-adjusted by INEGI, the rest are own seasonally-adjusted
* As of 2009 the Fiscal Balance definition changes, therefore data is not comparable

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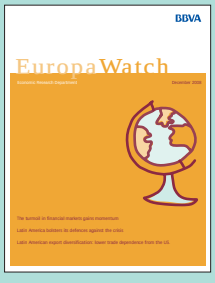
Other publications



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