Economic Watch

Mexico

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Economic Analysis

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Economic fundamentals anchor Mexico CDS spread in an uncertain global environment

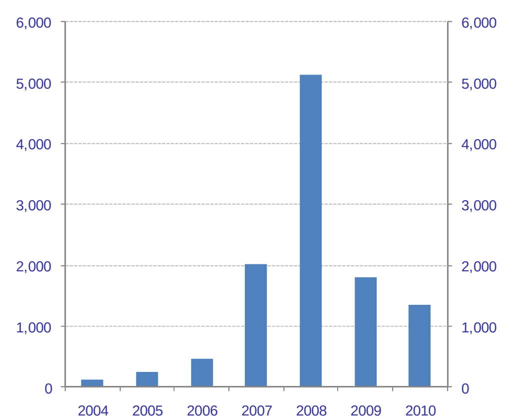
- **Financial volatility is a relevant factor of CDS' short term variations**
- **However, economic fundamentals – low external debt, high reserves and positive foreign demand - anchor the level of Mexico's sovereign risk**

We analyze the determinants of Mexico's sovereign risk, measured by Credit Default Swap Spread (CDS), and try to find a feasible breakdown between the economic fundamentals, usually related to public policies and economic growth; and exogenous factors, usually related to global issues, distinct from the evolution of the analyzed economy. This breakdown is particularly relevant given the increased trading of market risk and its potential effects on financial stability.[1] In addition, the sovereign risk is associated with a country's financing costs.

In order to analyze the sovereign risk we have estimated the determinants of Mexico's 5 year Credit Default Swap spread (CDS). We choose the CDS as a measure of sovereign risk because, at present, these credit derivative contracts are the main instrument to trade credit risk, therefore it is possible to rely on them to gauge investor's expectations of the solvency of a particular country. At the end of 2010 the size of the global market of CDS was around USD 1.5 trillion, after a steep decline following Lehman bankruptcy. Given the size of this market and the connection between financial institutions, as buyers and sellers of CDS, the default of a sovereign asset may become a systemic event.

Graph 1

CDS market value (USD billion)



Source: BIS and BBVA Research

Graph 2

Mexico 5Y CDS spread (bp)

Source: Bloomberg and BVA Research

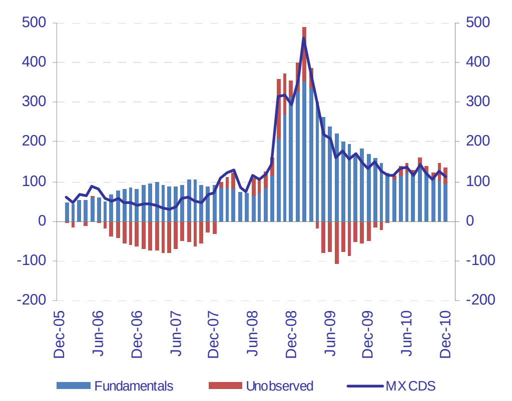
[1] This arises, in part, because these securities are traded in Over-The-Counter (OTC) markets, which are not regulated.

The starting point of our analysis is the relationship between a country's assets and liabilities and its probability of default. That is, the sovereign risk of a country should depend on its level of liabilities, the amount available to pay and the economic and financial conditions that could alter its solvency. In Mexico, the CDS level is explained mainly by the outstanding debt, the foreign asset reserves in the central bank and the US manufacturing index, as a measure of economic activity. According to Table 1 the level of debt, and growth in manufacturing in its main trade partner, explain around 70% of the CDS evolution. Other significant determinants are reserves, the exchange rate[2] and the Issuer Default Rating downgrade by Fitch in 2009.[3] These factors together explain around 80% of the CDS. These results are confirmed by a decomposition of the CDS level between a fundamental component[4] and unobserved factor (assumed as external or exogenous) in the period 2005-2010. As shown in graph 3, the fundamental component determines the bulk of the CDS level, while the exogenous factor plays a limited role. These findings are similar to the results of Remolona et al. (2007) who find that economic fundamentals determine the "expected loss" component of the sovereign risk. It is worth noting that "expected loss" from default is defined as the product of the probability of default and the loss-given-default.

However, in the short run the story is different. According to graph 4, the CDS spread changes respond more intensively to exogenous factors than to fundamentals. That is, in the short run exogenous factors drive the movements of sovereign risk. This is consistent with the conclusion of Bellas et al. (2010) that state that, in the short run, volatility and financial stress ("financial fragility") are more important determinants of sovereign risk in emerging markets than fundamental indicators, while the latter determine the steady-state level of the sovereign risk. In addition, these findings are in line with the idea of a "credit spread puzzle" exposed in Amato et al. (2003), which states that risk premium and not expected losses account for the larger part or average sovereign spreads.

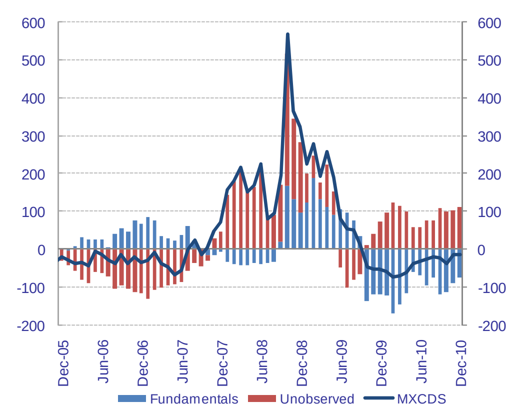
In sum, domestic fundamentals account for the larger part of the CDS spread in the long run, but external factors (e.g. global financial stress) play a key role in the short term. Accordingly, in the current uncertain stage of the global economy, economic fundamentals would lead to a lower CDS spread than that observed. Therefore, fiscal and monetary policies oriented to consolidation and nominal stability set an anchor for the CDS level.

Graph 3
CDS spread decomposition (bp)



Source: Bloomberg and BVA Research

Graph 4
CDS spread 12m percentage change decomposition (%)



Source: Bloomberg and BVA Research

[2] The exchange rate variable could proxy both a economic fundamental or an exogenous factor to the analyzed economy. We have chosen to consider it as an economic fundamental because the CDS contract insures the default of a bond denominated in US dollars, whereas most of Mexico's revenues are denominated in pesos.

[3] This dummy variable is intended to capture the effect of Fitch downgrade. According to the rating agency this downgrade is the result of a decline of oil production and a high dependence on oil of public revenue.

[4] Mainly domestic variables and understanding the exposure to US cycle as a fundamental factor

Appendix

A Credit Default Swap (CDS) is a contract that provides insurance against the risk of a default by a particular company or country. The buyer of the insurance obtains the right to sell bonds issued by the company (country) for their face value when a credit event occurs. The buyer of the CDS makes periodic payments to the seller until the end of the life of the CDS or until a credit event occurs. The total amount paid per year, as a percent of the notional principal, to buy protection is known as the CDS spread.

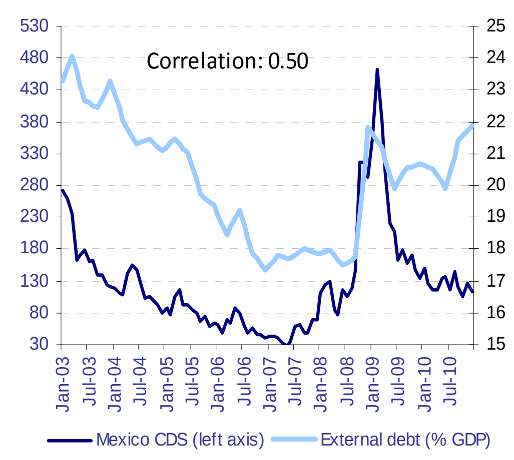
In order to separate the different sources of sovereign risk we first estimated an OLS regression in levels with the CDS spread as dependent variable and fundamental variables as determinants in monthly frequency for the period 2003-2010. The results in table 1 show that economic fundamentals are significant, have the correct sign and have a high explanatory power (R2, between 0.70 and 0.84). Graph 5 and 6 show the strong relationship between the CDS spread and economic fundamentals. It is worth noting that the results of specification (2) are consistent with the estimation of the determinants of a measure of expected loss from a CDS spread that appears in Remolona et al. (2007). In other words, economic fundamentals determine the expected loss of the default component of sovereign risk and, accordingly, determine the long run level of the CDS spread.

To capture the interaction between the different sources of sovereign risk, a state space model with the Mexican 5 yr CDS spread as dependent variable was estimated. The results confirm the last findings. The economic fundamentals determine the bulk of the CDS level, while the unobserved component represent a reduced proportion (graph 3). Notwithstanding, during the last financial crisis the unobserved component took a greater importance explaining the CDS level.

As a second exercise we estimated the same state-space model but with the 12 month percentage changes of the CDS spread as dependent variable.[5] The results shown in graph 4 support the idea that in the short run fundamentals lose explanatory power. This outcome is in line with the conclusion of Bellas et al (2010) that state that in the short run volatility and financial stress ("financial fragility") are more important determinants of sovereign risk in emerging markets than fundamental indicators.

Graph 5

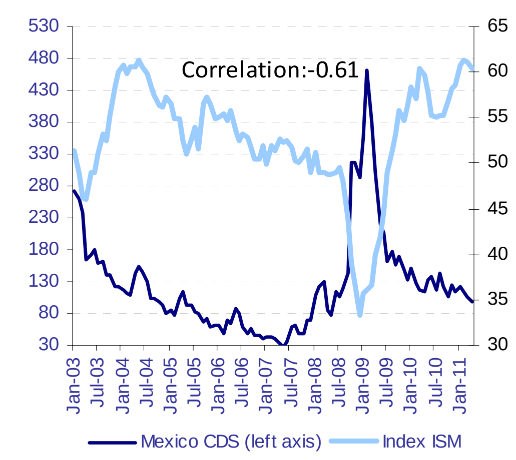
Mexico CDS and External Debt*



Source: BBVA Research, Bloomberg and BIS.. It includes private and public external debt..
*From January 2009 onwards, the debt increases in response to the recognition of the Pemex debt and the fiscal cost of the ISSSTE pension reform as explicit budget debt..

Graph 6

Mexico CDS and US manufacturing index



Source: BBVA Research and Bloomberg.

[5] In general, the independent variables are the same as in the OLS estimation.

The estimations are the following:

Table 1

Determinants of Mexico's 5Y CDS

Credit Default Swaps (CDS)	(1)	(2)	(3)	(4)
ISM manufacturing index	-8.87	-9.11	-8.98	-3.38
	(0.98)**	(0.70)**	(0.71)**	(1.18)**
External debt/GDP	29.23	18.94	20.94	8.08
	(2.65)**	(2.09)**	(2.18)**	(2.92)**
Reserves/PIB		-0.20	-14.04	-21.79
		(4.83)	(7.81)*	(9.60)*
MXN/USD		19.33	24.39	20.44
		(4.44)**	(4.68)**	(6.50)**
Dummy Fitch rating downgrade			35.13	35.05
			(13.38)**	(16.44)**
Lagged CDS				0.57
				(0.10)**
R^2	0.73	0.83	0.84	0.90
Observations	96	96	96	95

**Significant at 5%; *Significant at 10%. Monthly data: 2003-2010
Standard erros in parenthesis

Source: BBVA Research

References

Amato, J and E. Remolona (2003), "The credit spread puzzle". *BIS Quarterly Review*, December, pp 51-63

Bellas D., M. Papaioannou, and I. Petrova (2010). "Determinants of emerging market sovereign bond spreads: Fundamentals vs financial stress". IMF working paper, December.

Remolona E., M. Scatinga and E. Wu (2007). "Interpreting sovereign spreads". *BIS Quarterly Review*, March, pp 27-39.

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