

# Recent developments in the Mexican Peso market

March 2009

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1. The FX market before the financial turmoil
2. What we got right – what we missed
3. Structural change in the FX market
4. Final remarks

# Development of financial markets

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- ✓ Favorable global environment
- ✓ Structural policies and secondary building blocks

## Foundations

- Prudent fiscal and monetary policies
- Commitment to a market determined exchange rate
- Unrestricted capital mobility
- Adequate legal and regulatory structure
- Development of local yield curve
- Pension system reforms

# Positive impulse for MXN volume...

## Average Daily Volume for Selected Currencies

In billions of USD and percentage share of total volume\*

	2004		2007	
	Volume	% share	Volume	% share
Dollar (USA)	1,573	88.7%	2,659	86.3%
Euro (EU)	660	37.2%	1,140	37.0%
Yen (Japan)	360	20.3%	508	16.5%
Pound sterling (UK)	300	16.9%	462	15.0%
Swiss franc (Switzerland)	108	6.1%	210	6.8%
<b>Peso (Mexico)</b>	<b>20</b>	<b>1.1%</b>	<b>39</b>	<b>1.3%</b>
Rand (South Africa)	14	0.8%	28	0.9%
Zloty (Poland)	7	0.4%	25	0.8%
Rupee (India)	5	0.3%	22	0.7%
Real (Brazil)	4	0.2%	12	0.4%
Forint (Hungary)	4	0.2%	9	0.3%
Koruna (Czech Rep.)	4	0.2%	6	0.2%
Baht (Thailand)	4	0.2%	6	0.2%

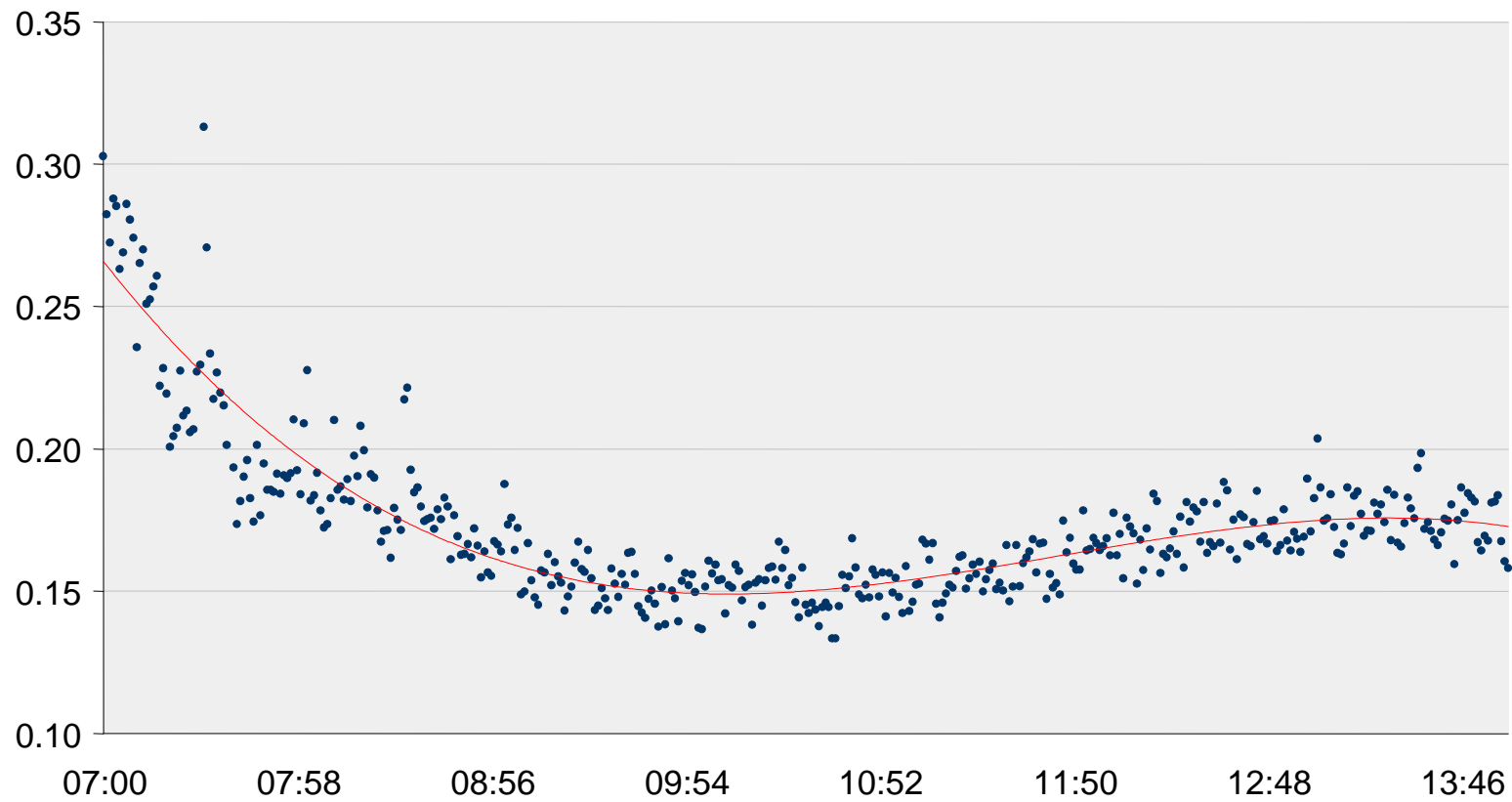
\* Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%.

Source: BIS. Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity.

# ...liquidity...

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**Average USD/MXN bid-ask spread**  
**Local time; Mexican peso cents (1H2008)**

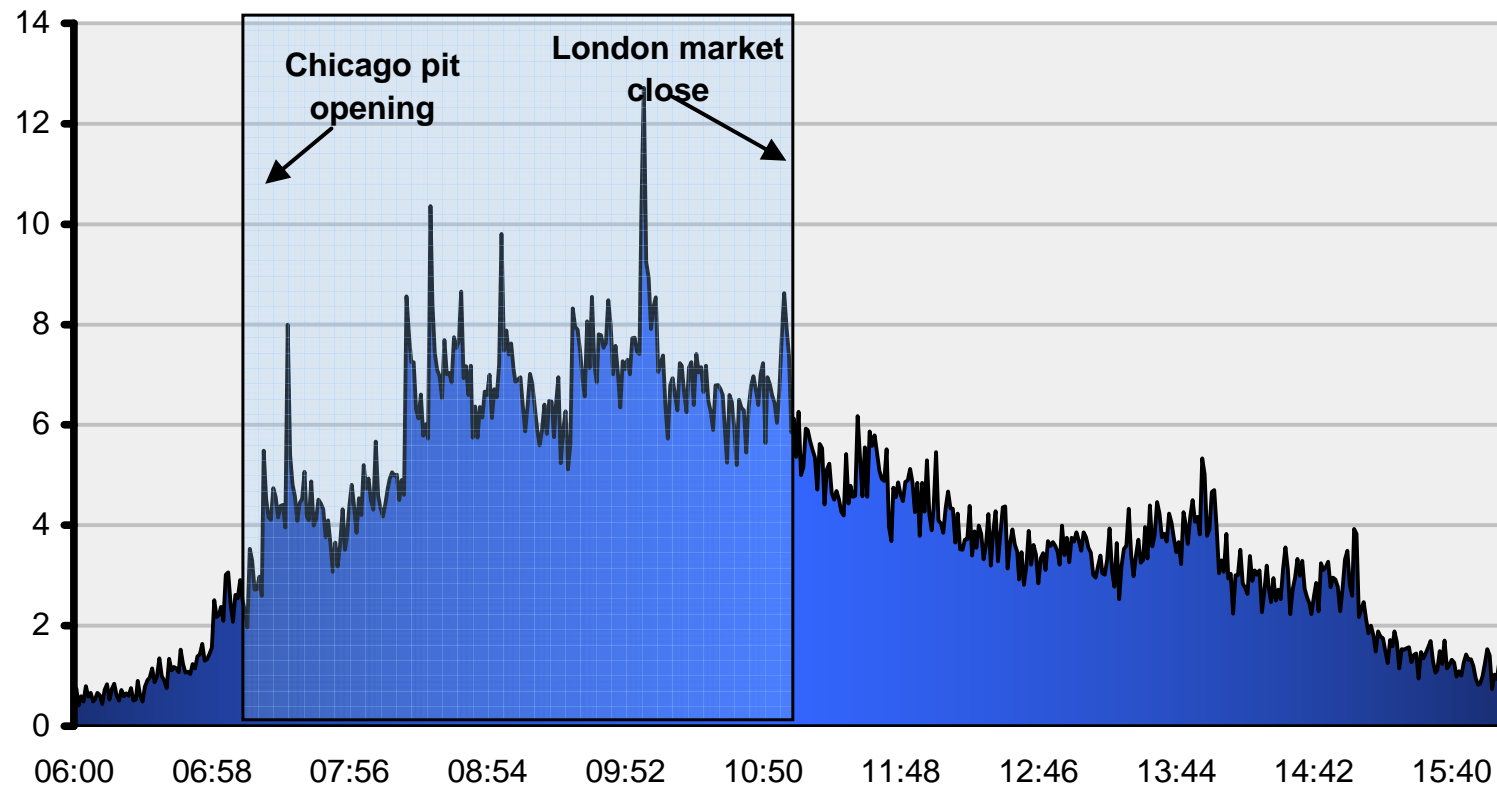


Source: Reuters.

# ...and trading hours.

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Trading timeframe in the USD/MXN foreign exchange market  
Average trades per minute (1H08)



Source: Reuters.

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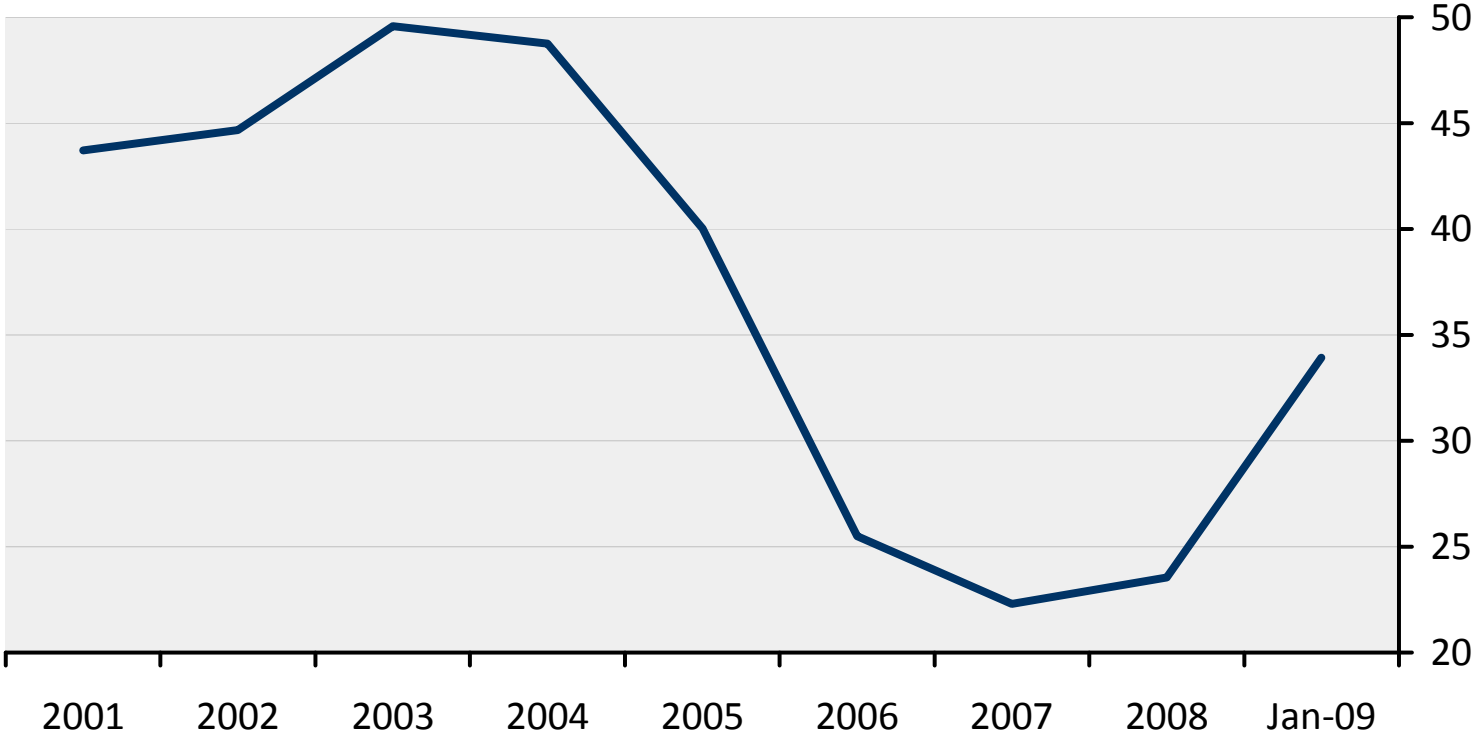
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# Financial development reduced vulnerabilities.

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**Ratio of central government external debt over domestic debt  
Percentage**





# Foreign currency leverage is low.

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**Gross external debt position by sector**  
**Millions of U.S. Dollars and % of GDP**

	1994		2002		2008*	
	Millions of dollars	% of GDP	Millions of dollars	% of GDP	Millions of dollars	% of GDP
<b>Public Sector</b>	<b>85,436</b>	<b>18%</b>	<b>78,818</b>	<b>11%</b>	<b>56,939</b>	<b>5%</b>
Short Term	6,354	1%	2,789	0%	1,275	0%
Long Term	79,082	17%	76,029	11%	55,664	5%
<b>Private Sector</b>	<b>45,137</b>	<b>10%</b>	<b>77,101</b>	<b>11%</b>	<b>76,468</b>	<b>7%</b>
Short Term			22,403	3%	24,734	2%
Long Term			54,698	8%	51,734	5%
<b>TOTAL</b>	<b>130,573</b>	<b>28%</b>	<b>155,919</b>	<b>22%</b>	<b>133,407</b>	<b>12%</b>

\* Data of public sector debt as of December 2008, data of private sector debt as of September 2008.

Source: Banco de México.

# Manageable current account deficit.

<b>Balance of payments forecast, 2009</b>		
<b>Million U.S. dollars</b>	<b>2008</b>	<b>2009</b>
<b>Current account</b>	<b>-15,527</b>	<b>-24,100</b>
Trade Balance	-16,838	-26,375
Oil trade balance	14,365	5,695
Non-oil trade balance	-31,203	-32,070
Non factor services	-7,006	-4,911
Factor services	-17,151	-15,250
Transfers	25,468	22,437
<b>Capital Account</b>	<b>20,961</b>	<b>27,469</b>
<b>Liabilities</b>	29,321	20,729
Indebtedness	7,986	6,229
Public Sector 1/	-3,928	9,829
Private Sector	-939	-3,600
PIDIREGAS	12,853	
Foreign Investment	21,335	14,500
<b>Assets</b>	-8,360	6,740
<b>Errors and omissions</b>	<b>2,016</b>	
<b>Change in international net reserves</b>	<b>7,450</b>	<b>3,369</b>

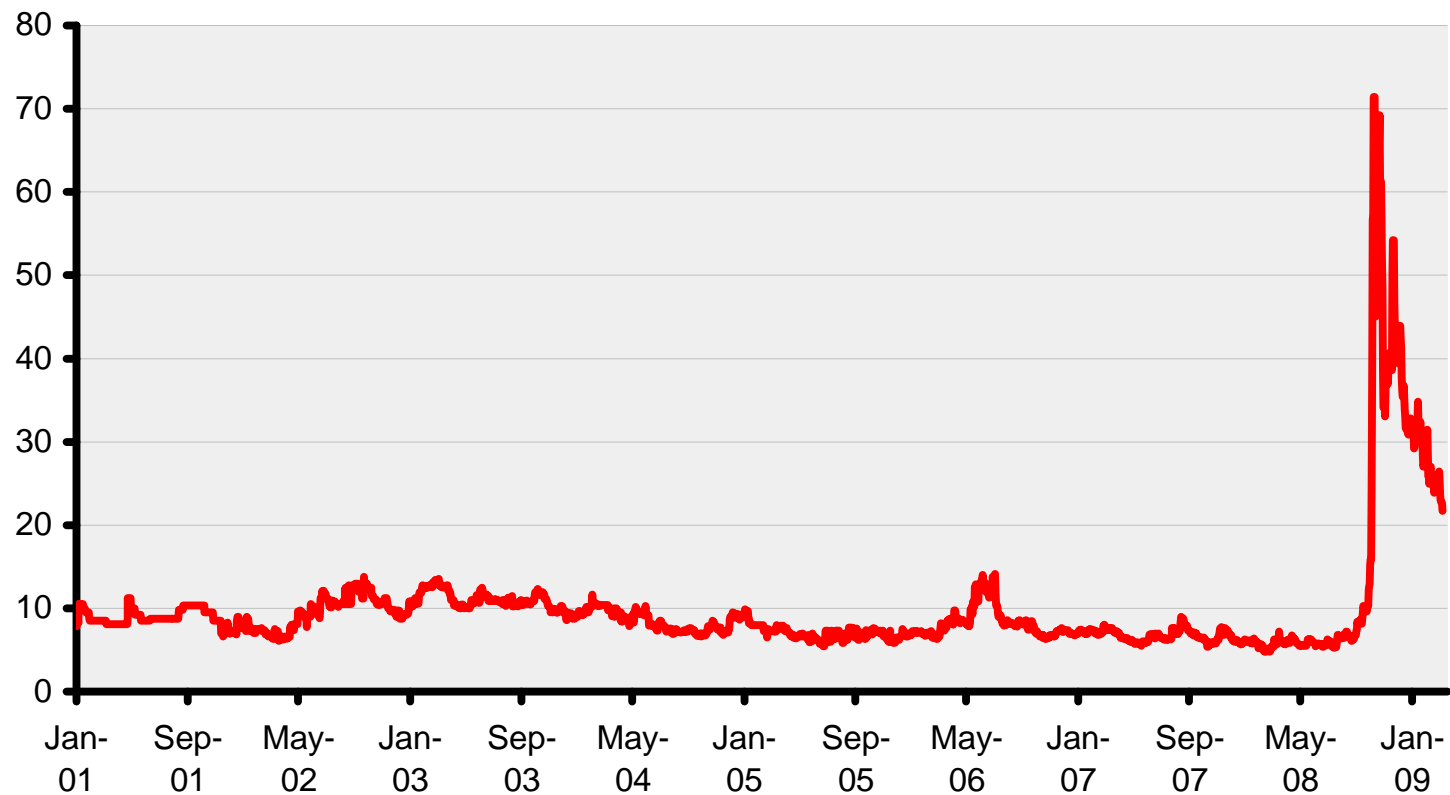
For 2009, PIDIREGAS are included in the Public Sector indebtedness

Source: Foreign Exchange Commission.

# These developments were reflected in the low volatility of the exchange rate.

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**Implied volatility of the OTC\* options (USD/MXN)  
Percentage**



Source: Bloomberg.

\*1 month.

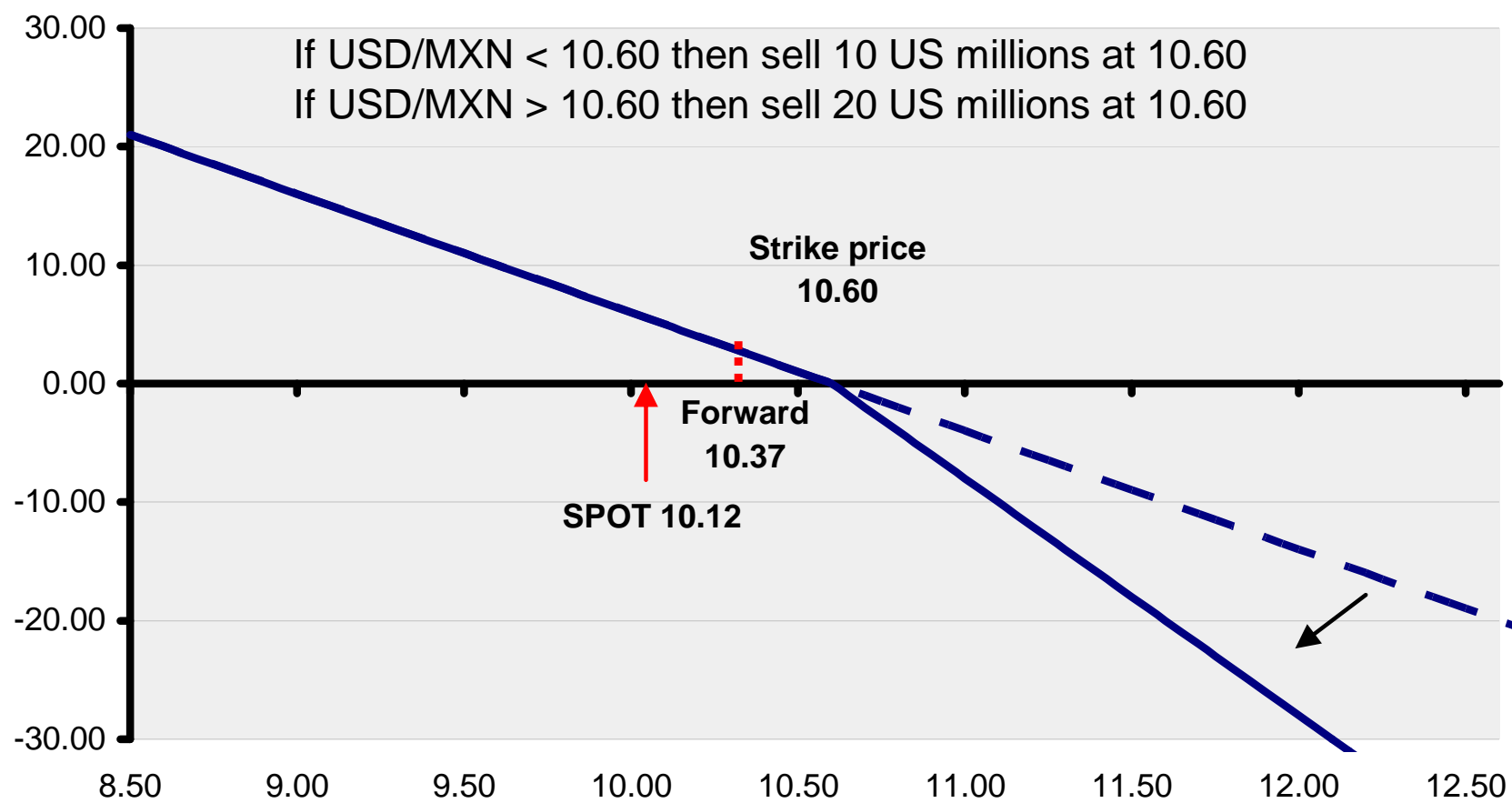
# Stability encouraged excessive risk taking by some players

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- ✓ Firms used derivatives without adequate risk assessment capabilities
- ✓ Banks overexposed clients and themselves
- ✓ Rating agencies overlooked important operations
- ✓ Authorities failed to identify the perverse incentives generated by the low volatility

## Pay-Off estimated from a USD/MXN target forward

Pesos



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# Factors behind the structural adjustment

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- ✓ Macro factors
  - ✓ Global risk aversion
  - ✓ Terms of trade shocks
  - ✓ Contraction in trade
  - ✓ Tightened credit conditions



No Decoupling

# Reduction in the number of participants

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**Average daily volume of local financial institutions with US investment banks**  
Percentage, millions of US dollars

	Spot volume share		Average daily volume in the spot market	
	2007	2009	2007	2009
<b>Investment banks</b>	<b>8.2%</b>	<b>1.8%</b>	<b>400</b>	<b>88</b>

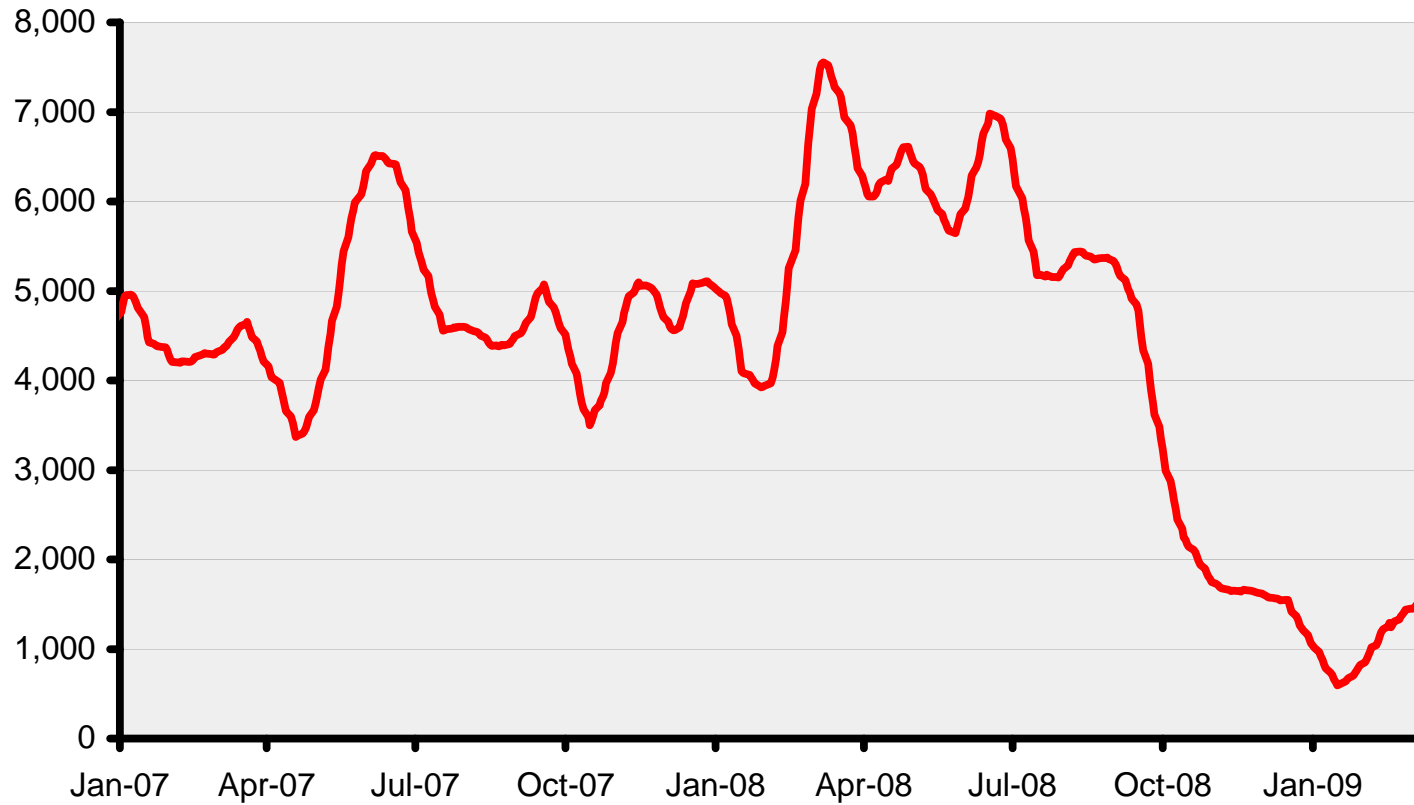
Source: Banco de Mexico



# Reduced leverage

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**Open interest of the USD/MXN contracts in the CME**  
Millions of US dollars (ma 10 days)

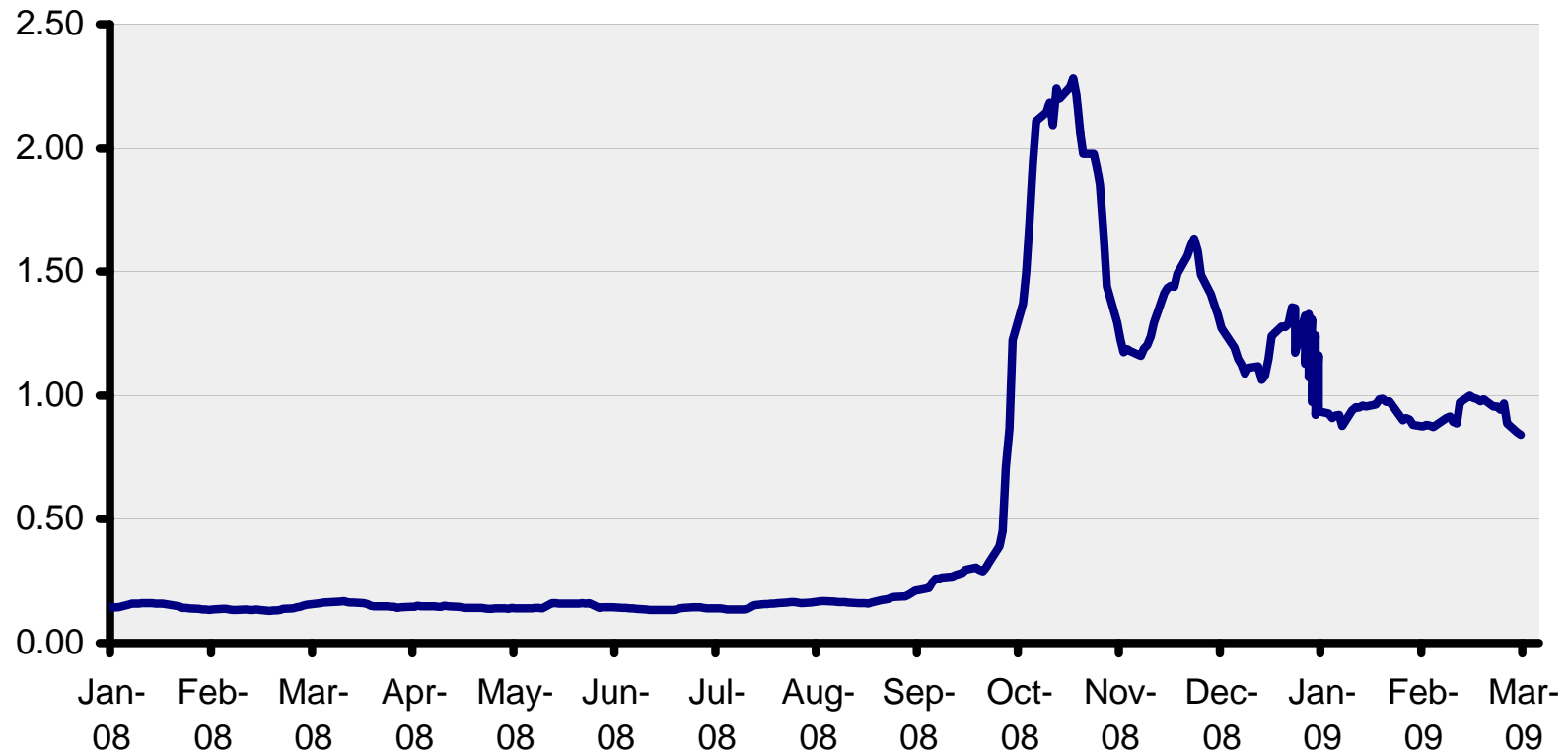


Source: Chicago Mercantile Exchange.

# Increased transaction costs

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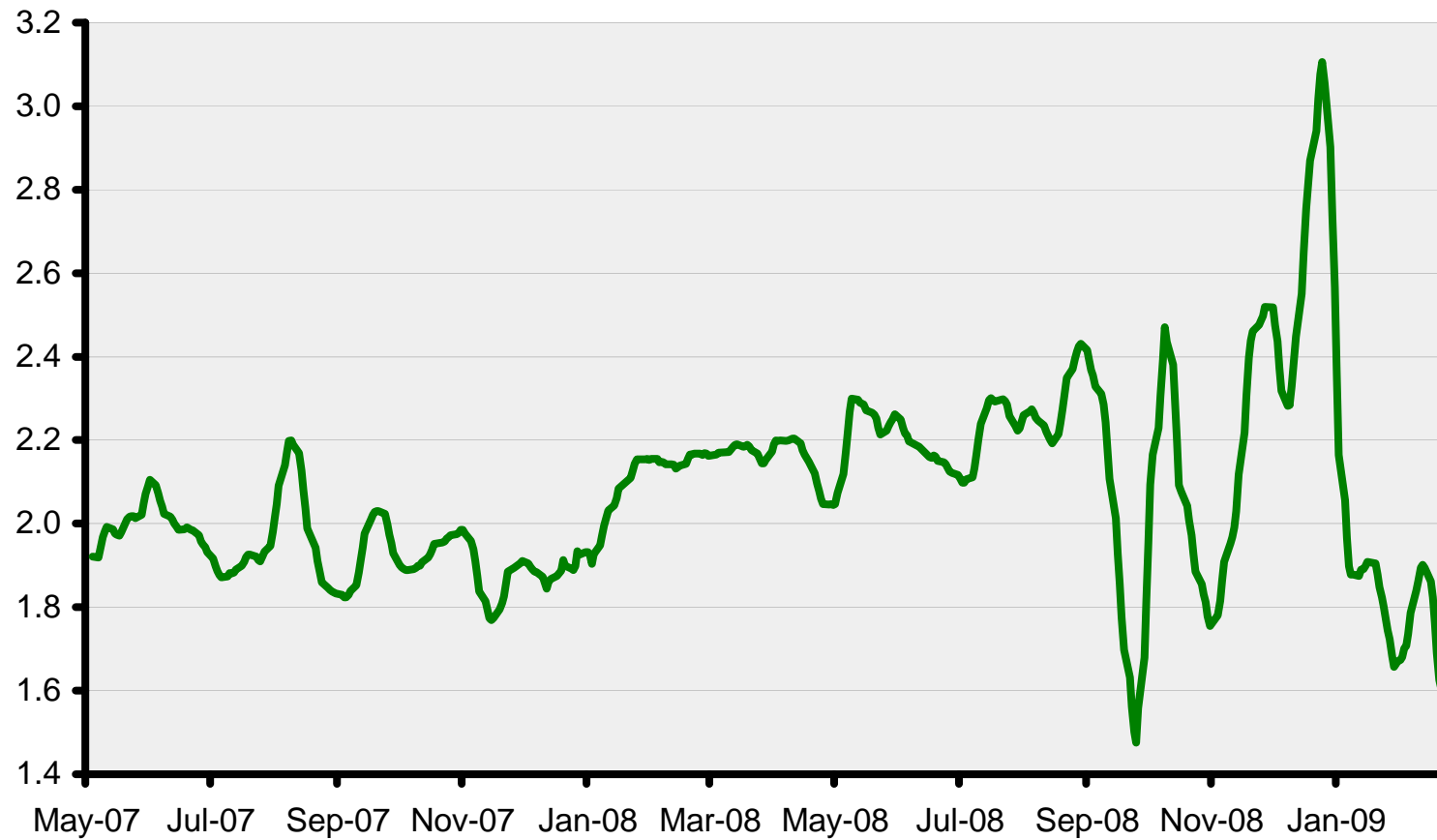
**Average USD/MXN bid-ask spread (ma 10 days)**  
**Mexican peso cents**



Source: Reuters.

# Thinner markets

**Ratio between volume and trades**  
**Millions of US dollars per trade**

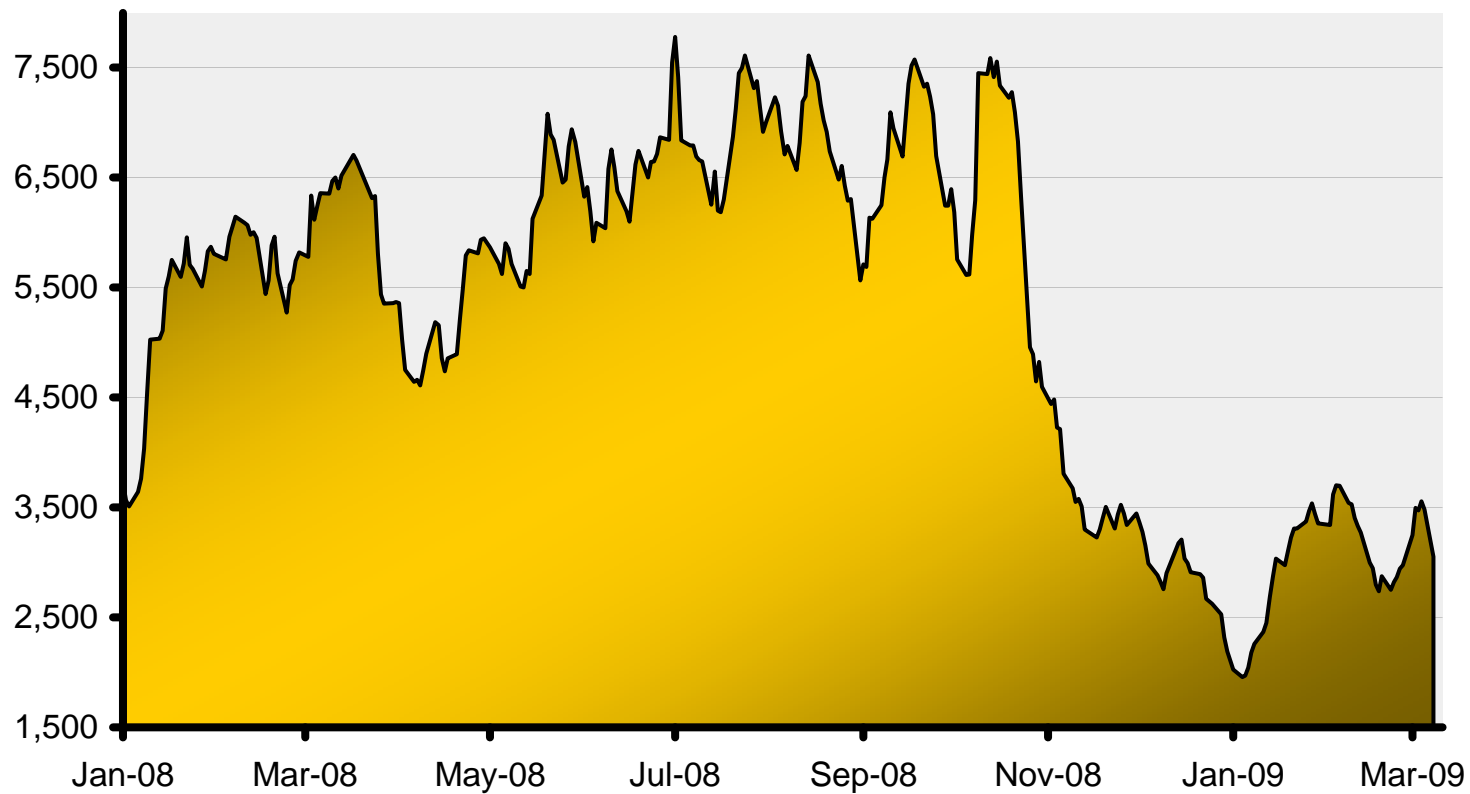


Source: Reuters.

# Severe fall in trading volumes

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**Daily spot volume in the local FX market**  
Millions of US dollars (ma 10 days)



Source: Banxico.

# Negative feedback process

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- ✓ The dynamics of the exchange rate were aggravated by the derivatives structures of a handful of local companies.
- ✓ The structural adjustment that was taking place in the FX market reduced the capacity to absorb extraordinary dollar demands coming from these firms.
- ✓ The first wave of official intervention was aimed at breaking this negative feedback process.

# Official intervention

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Extraordinary auctions: provide liquidity to tackle exceptional foreign exchange demands.

Daily auctions (minimum price): provides liquidity when the exchange rate moves significantly.

Direct sales: provide two way risk.

Daily auctions (no minimum price): predictable sale of surplus accumulation.

Amounts\* sold in the Mexican FX market

	Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09**	Total
<b>Extraordinary auctions</b>	11,000	-	-	-	-	-	11,000
<b>Daily auctions (400 US millions)</b>	2,096	1,285	797	988	1,092	400	6,658
<b>Direct sales</b>	-	-	-	-	1,835	-	1,835
<b>Daily auctions (100 US millions)</b>	-	-	-	-	-	500	500
<b>Total</b>	<b>13,096</b>	<b>1,285</b>	<b>797</b>	<b>988</b>	<b>2,927</b>	<b>900</b>	<b>19,993</b>

Source: Banxico.

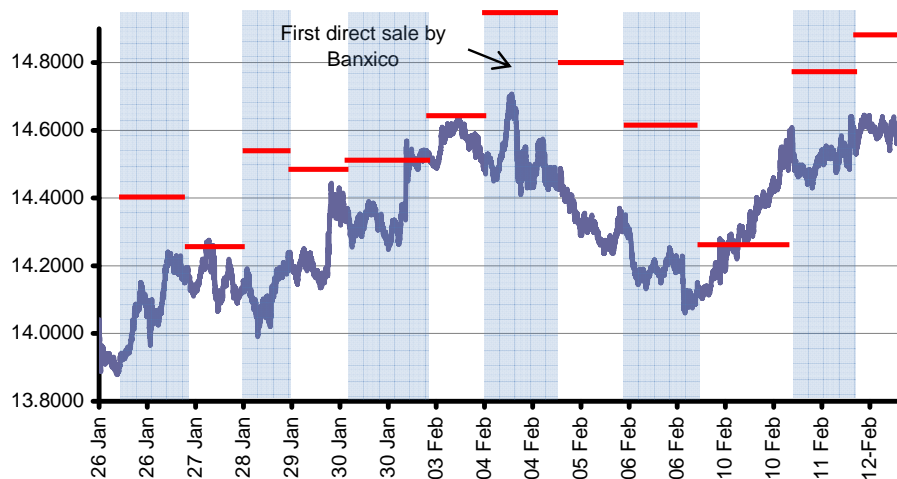
\*Millions of US dollars.

\*\*Amount changed from 400 US millions to 300 US millions by the Foreign Exchange Commission

# The move to discretionary policy

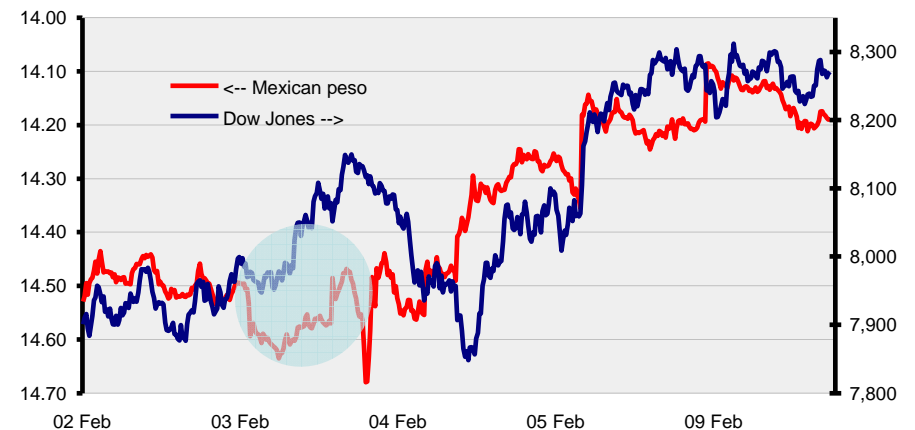
- ✓ Starting in February, the Peso faced a series of challenges:
  - ✓ Growing global uncertainty about the timing and strength of a recovery
  - ✓ More pessimistic estimates on the local economy
  - ✓ More tightened conditions for external financing
  - ✓ Opportunistic positioning that took advantage of daily auction

Intraday USD/MXN exchange rate and Banxico's daily auctions  
Pesos per dollars



Source: Reuters.

USD/MXN exchange rate and Dow Jones Index  
Pesos per dollars\*, units



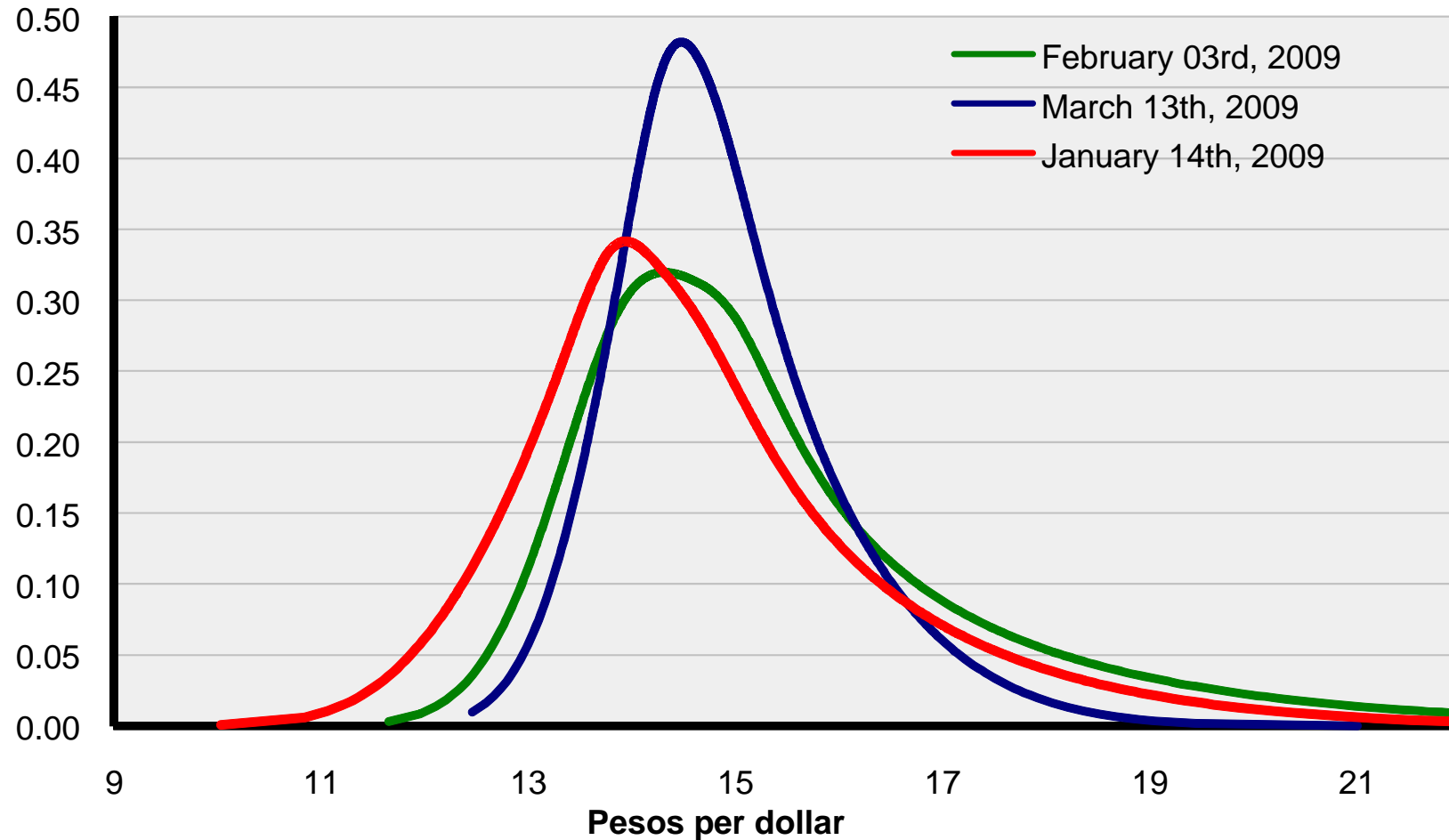
Source: Bloomberg.

\*Inverse order values.

# Equilibrium and two way risk

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## Implied probability density function in USD/MXN one month options



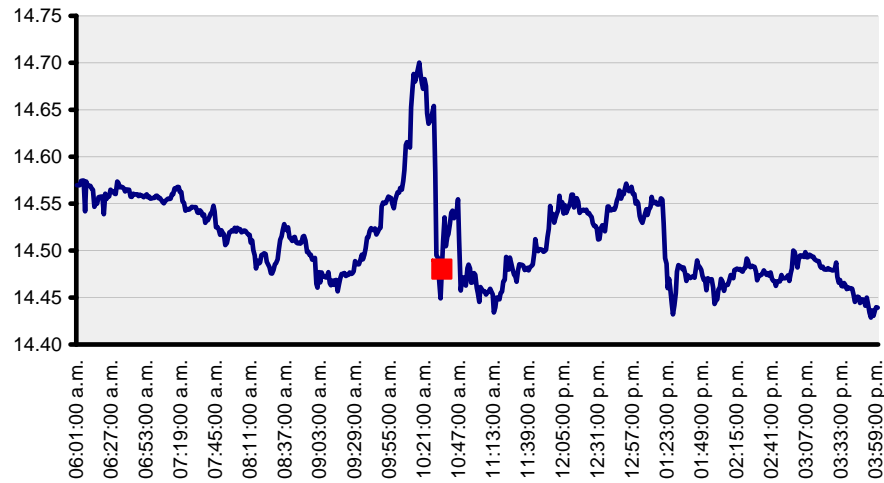
Source: Banco de México and Reuters.



# Encouraging results... in the beginning.

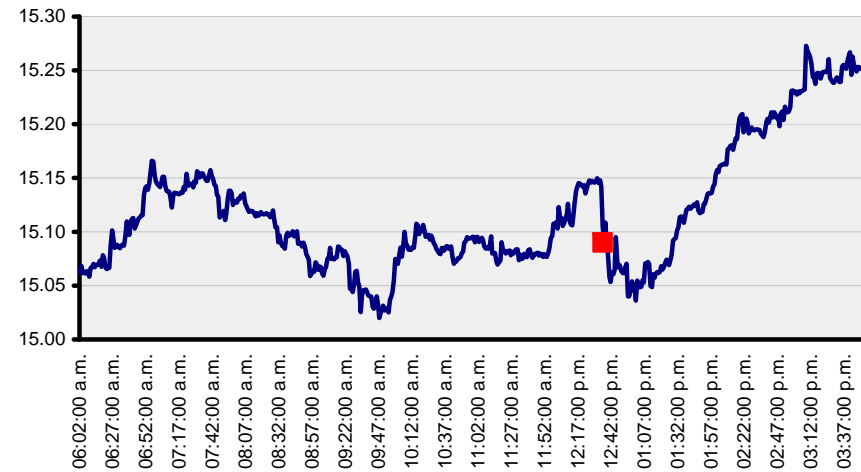
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USD/MXN exchange rate (February 4, 2009)  
Pesos per dollars



Source: Reuters.

USD/MXN exchange rate (February 27, 2009)  
Pesos per dollars

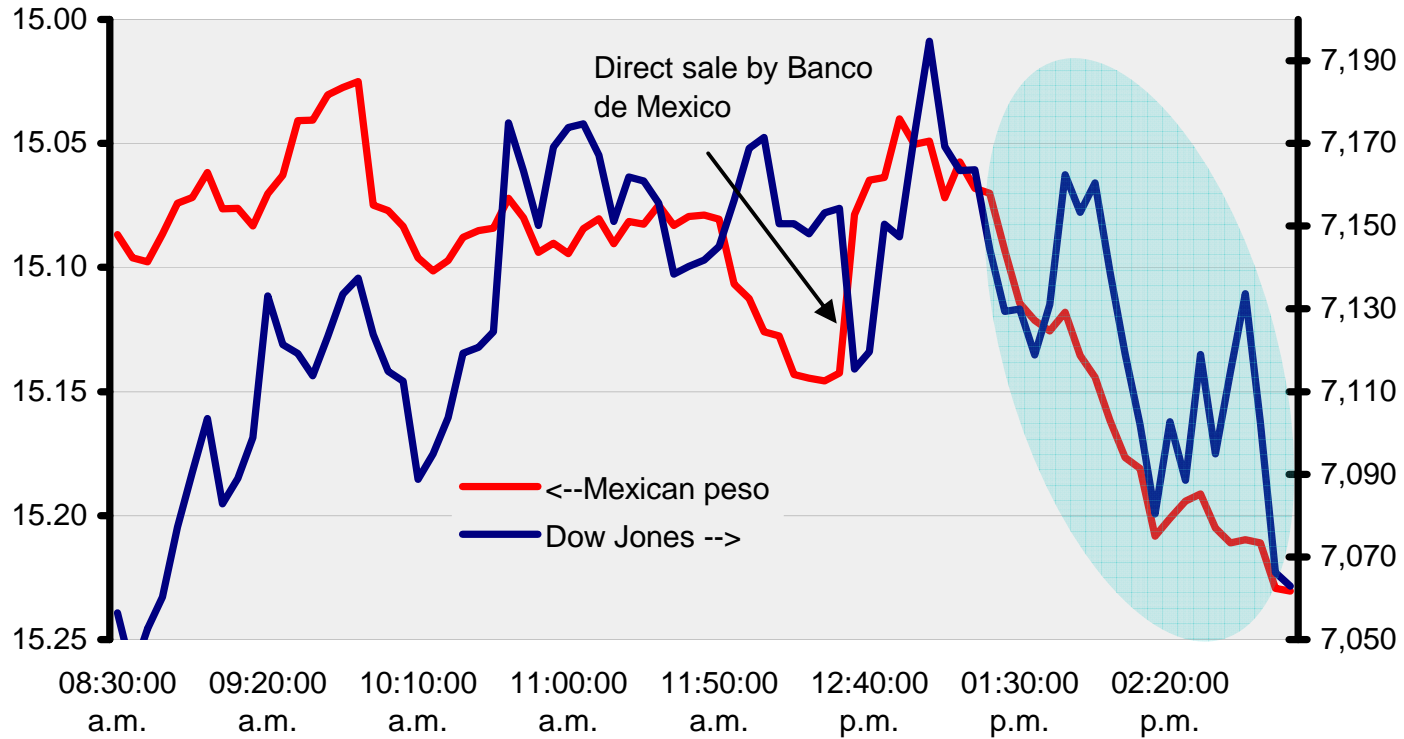


Source: Reuters.

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## USD/MXN exchange rate and Dow Jones Index (February 27, 2009)

Pesos per dollars\*, units



Source: Bloomberg.

\*values on inverse order.

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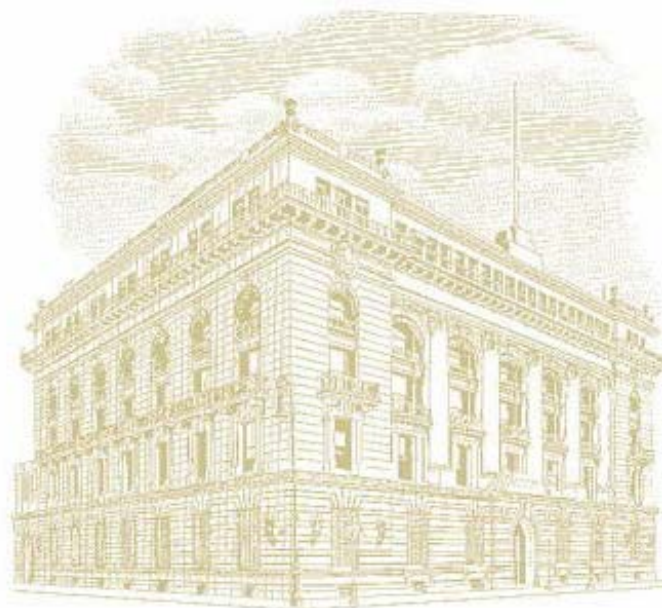
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# Final Remarks

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- ✓ Full commitment to floating exchange rate regime
  - ✓ In the short run intervention may still be needed...
  - ✓ ...but we favor the use of automatic mechanisms
- ✓ External position will not be compromised
  - ✓ Sufficiency of international reserves
- ✓ Reduction of vulnerabilities
  - ✓ Adequate risk management in banks and firms
  - ✓ Reduction of information asymmetries



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