

IMPACT OF GLOBAL FINANCIAL CRISIS ON MEXICO'S REMITTANCES

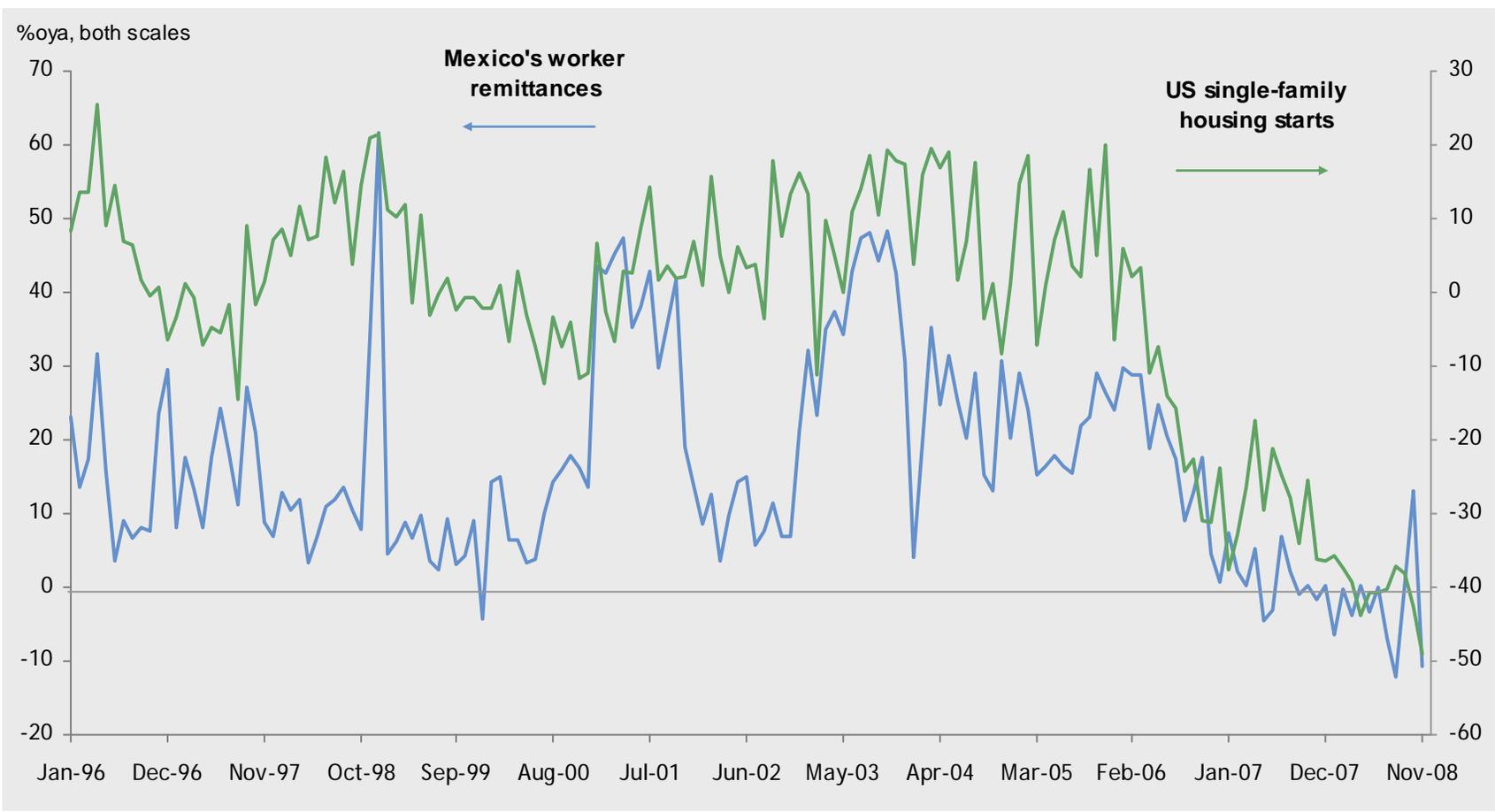
Alfredo Thorne, Managing Director, Emerging Market Research

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# At glance, Mexico's remittances have been hit by US housing decline

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Mexico's worker remittances and US housing starts

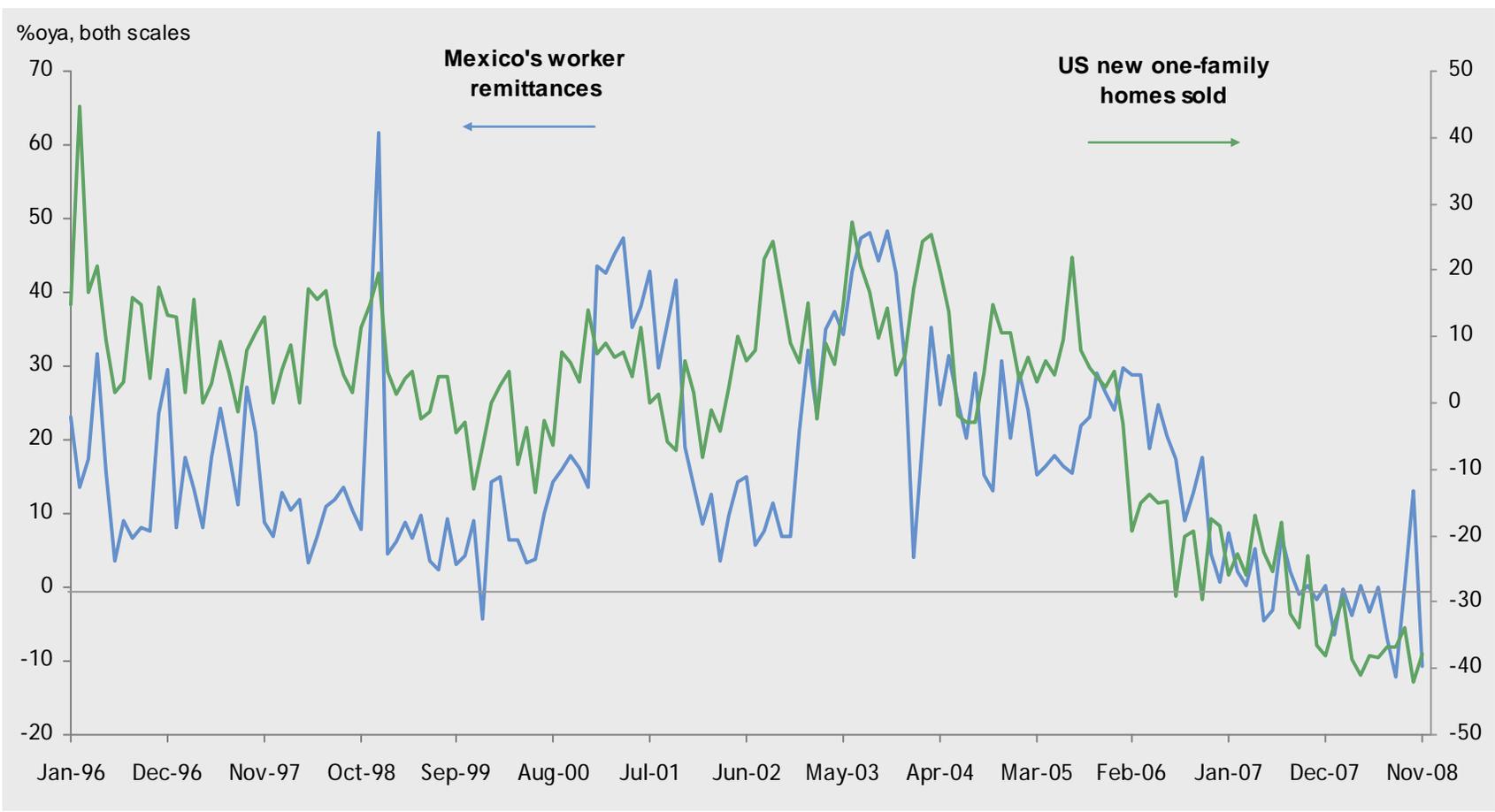


Source: Banxico and US Census Bureau

# The correlation has been tighter with house sales, however

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### Mexico's worker remittances and US new one-family homes sold

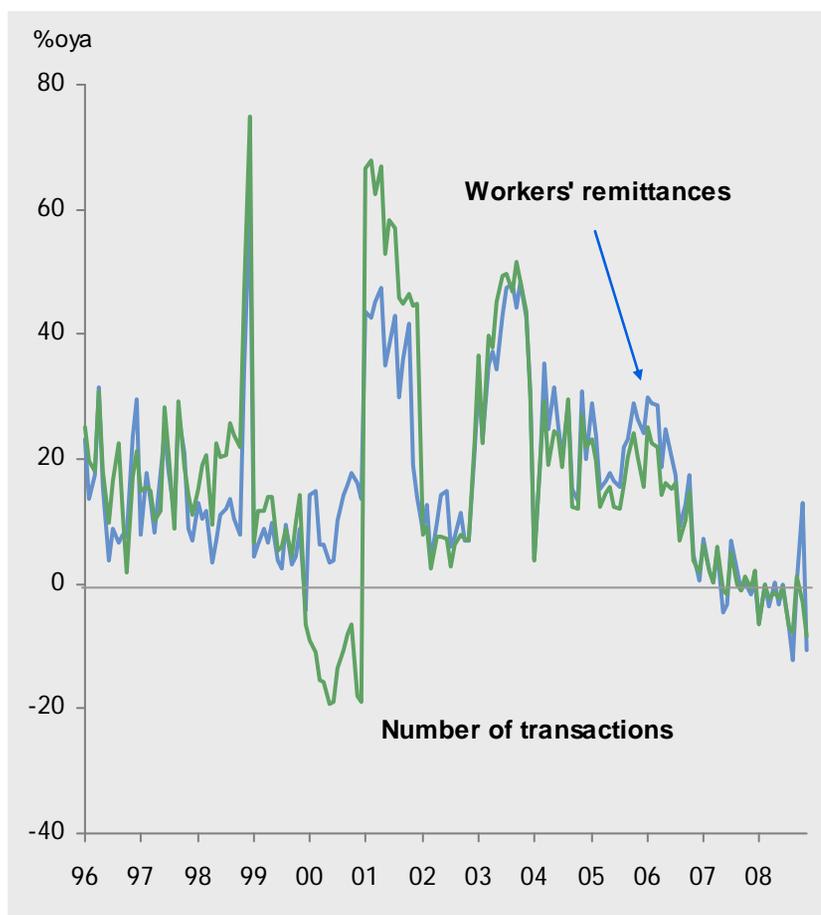


Source: Banxico and US Census Bureau

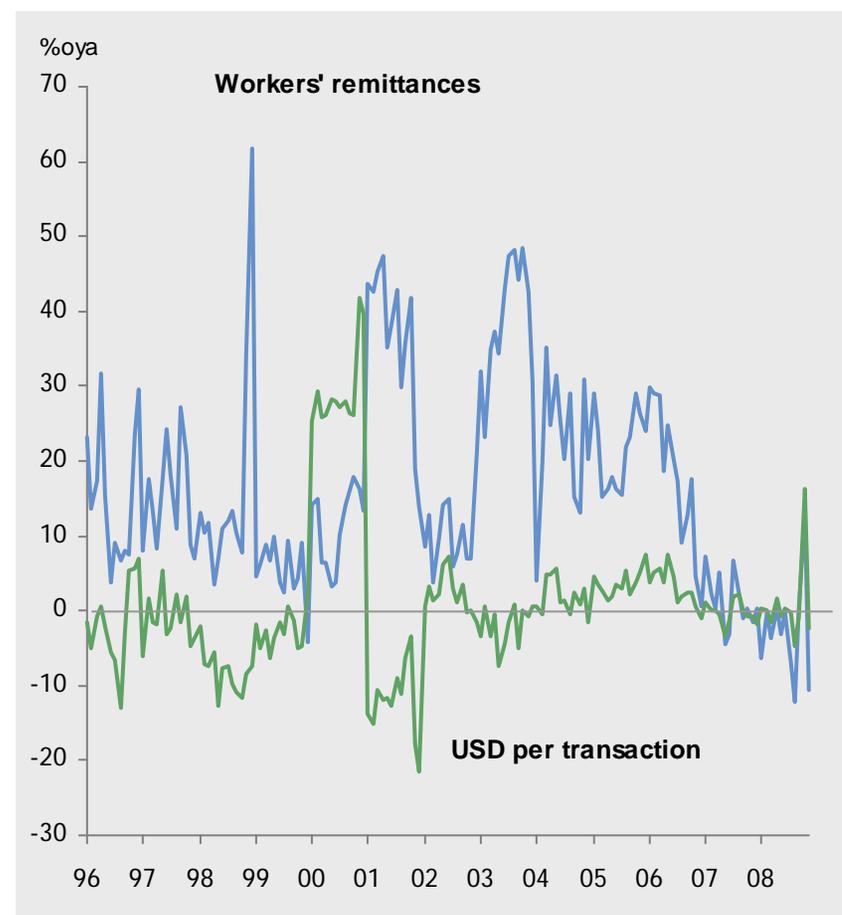
# But not all that glitters is gold!

The data is full of nuances and some of these correlations are spurious

Workers' remittances and number of transactions



Workers' remittances and value per transaction



# Most of the boom in remittances has been induced by financial innovations—sharp drop in cost of transfers

Workers' remittance indicators					
%oya, unless indicated	1996	2004	2006	2007	Jan-Nov 2008
Total remittances	15.0	22.6	17.1	1.0	-2.6
Remittances per transfer	-1.9	1.8	3.1	-0.3	0.7
Number of transactions	17.3	20.3	13.6	1.3	-3.5
Money orders (% of total)	36.0	11.2	5.7	3.6	2.5
Electronic transfers (% of total)	52.6	87.4	92.8	94.8	95.7
US hourly wage per worker	3.3	2.6	1.5	2.7	2.7
Mexico hourly wage per worker	3.5	0.9	4.9	5.7	8.4
US-Mexico hourly wage differential <sup>1</sup>	9.6	6.4	5.8	5.7	5.6
<i>Memo item:</i>					
Total remittances (USD bn, 12m sum)	4.2	16.7	23.7	24.0	23.2*

1. Ratio of US and Mexico USD wage per hour in manufacturing. \*Total remittances in 2008 using December data forecast.  
Source: Banxico and INEGI

# Labor markets have been the main link with the US economy

## Mexican immigrants' share in US labor force by sector

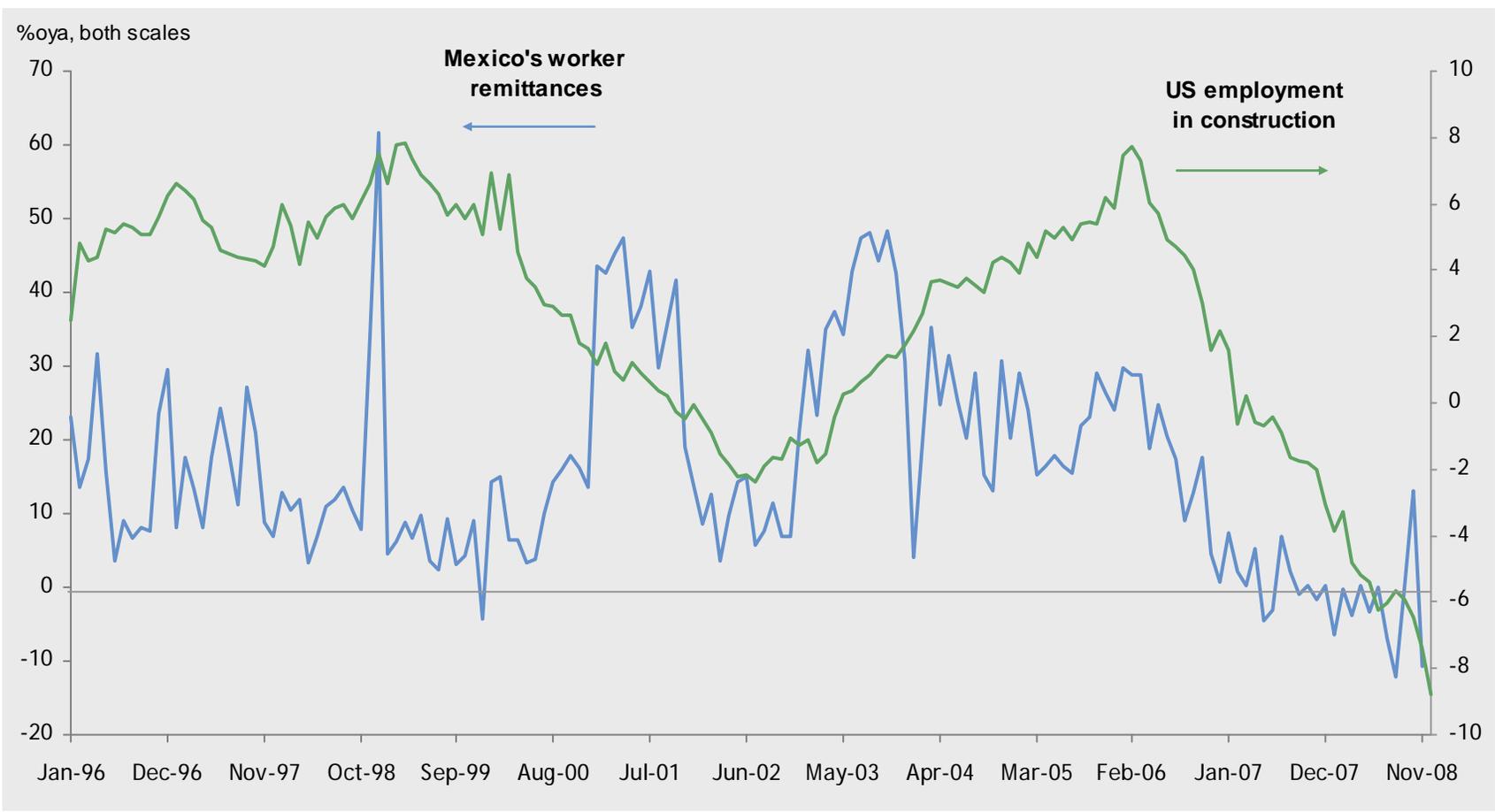
% of total labor force	Jul-Aug 2008
Agriculture	15.8
Industrial production	9.6
Construction	13.8
Manufacturing	7.3
Services	3.7
<i>Memo items: share of:</i>	
Total labor force	5.1
Total unemployment	5.5

Source: Banxico using US Current Population Survey

# Anew the correlation between remittances and US employment in construction sector has tightened

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Mexico's worker remittances and US employment in construction



Source: Banxico and US Census Bureau

# But it is counter-intuitive why US employers have dismissed Mexican workers ahead of the US ones

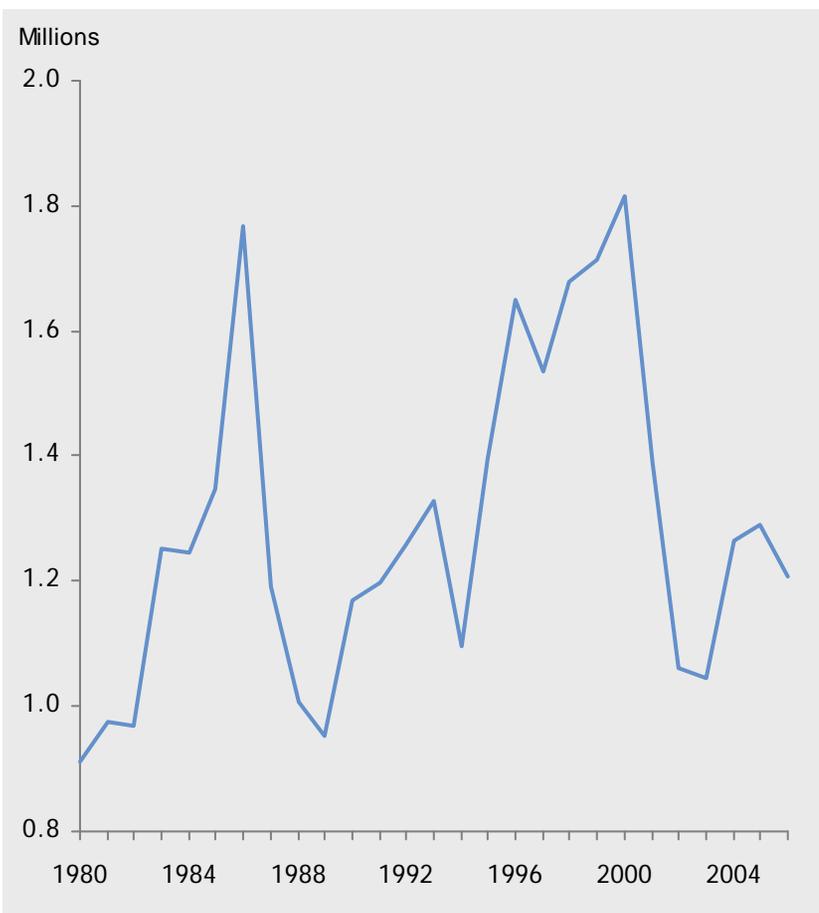
Employment in US construction industry					
Millions, nsa	1Q06	1Q07	1Q08	Annual change	
				1Q07	1Q08
All workers	11.09	11.61	10.91	0.51	-0.70
Non-Hispanic	8.43	8.64	8.18	0.21	-0.46
Hispanic	2.67	2.97	2.72	0.30	-0.25
Native born	0.62	0.71	0.69	0.09	-0.03
Foreign born	2.06	2.26	2.04	0.20	-0.22
Mexican born	1.43	1.64	1.49	0.21	-0.15
Arrival: 2000 or later	0.73	0.85	0.78	0.12	-0.07

Source: Pew Hispanic Center tabulation of Current Population Survey.

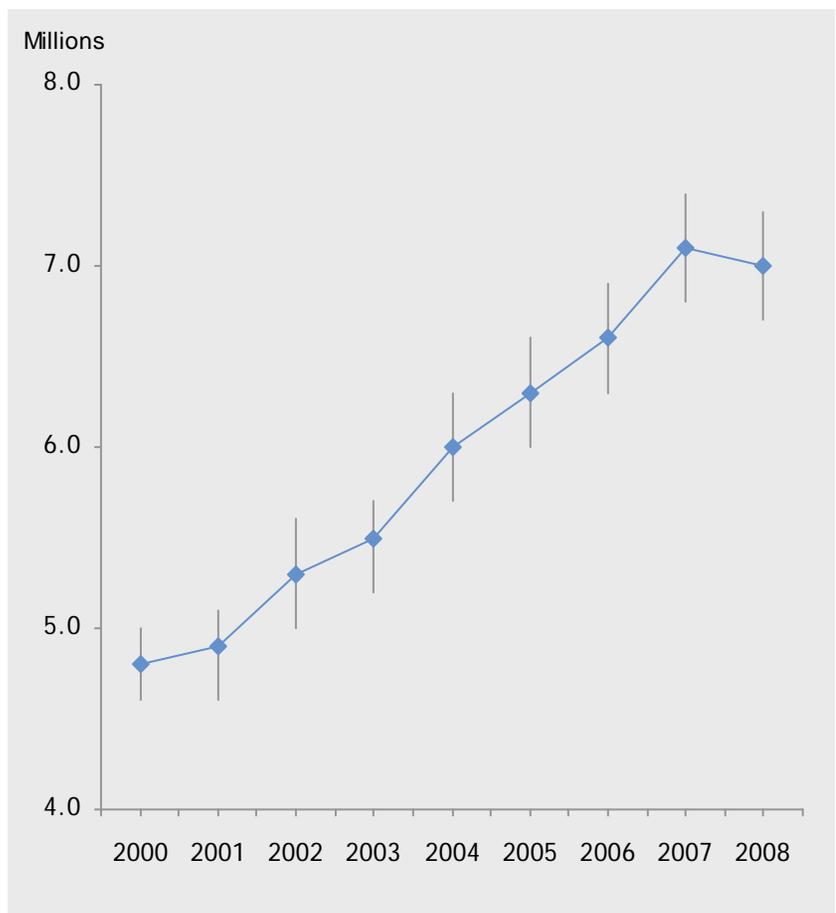
# There are two structural factors that have contributed to the fall in remittances. First, US immigration policy

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### Annual apprehensions at US-Mexico border



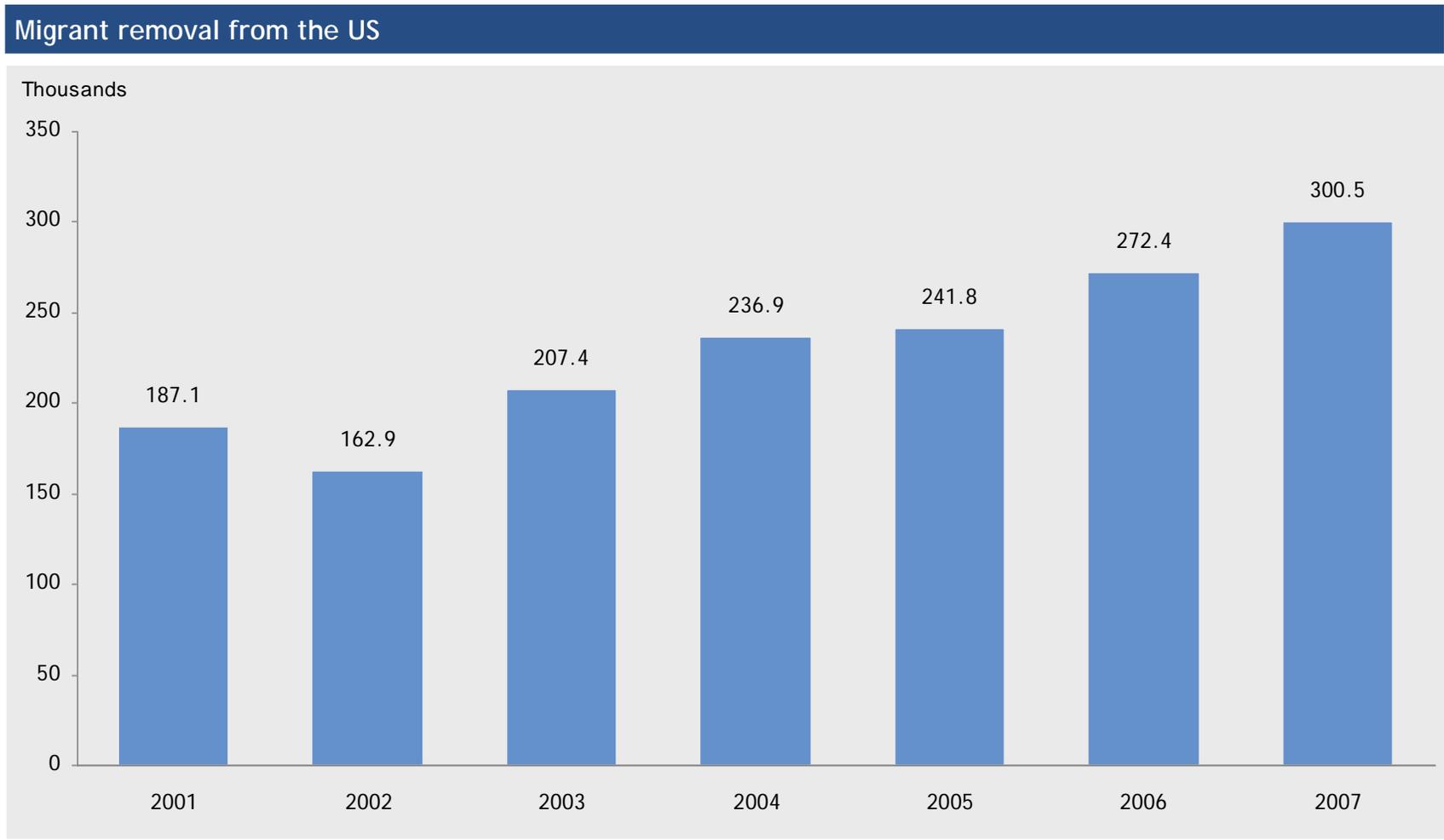
### Estimates of US unauthorized immigrants from Mexico



Source: Pew Hispanic Center

# In fact, there has been a discrimination against illegal Mexico workers

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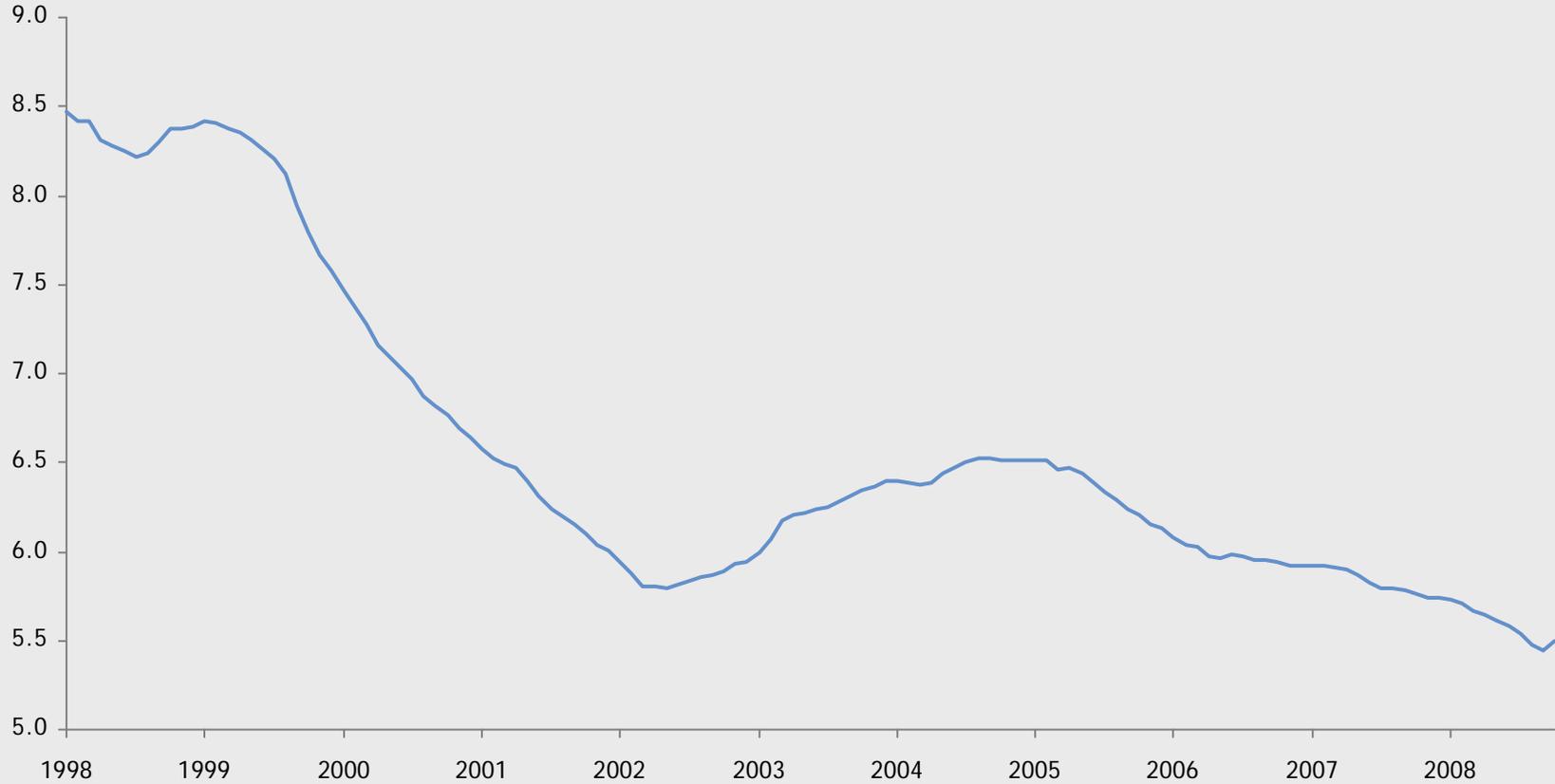
Note: A removal is "the compulsory and confirmed movement of an inadmissible or deportable alien out of the US based on an order or removal".  
Source: Pew Hispanic Center.

# Second, US-MX changes in labor markets. Workers compensation for Mexico workers has fallen...

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## US-Mexico wage per hour differential in manufacturing

Ratios of US and Mexico USD wage per hour, 12mma



Source : INEGI

...and productivity differentials have narrowed. This may have made less attractive for workers to migrate

US-Mexico ULC differential in manufacturing

Ratio of US and Mexico USD unit labor cost indices, 12mma



Source: INEGI

US-Mexico productivity differential in manufacturing

Ratio of US and Mexico unit labor cost indices, 12mma

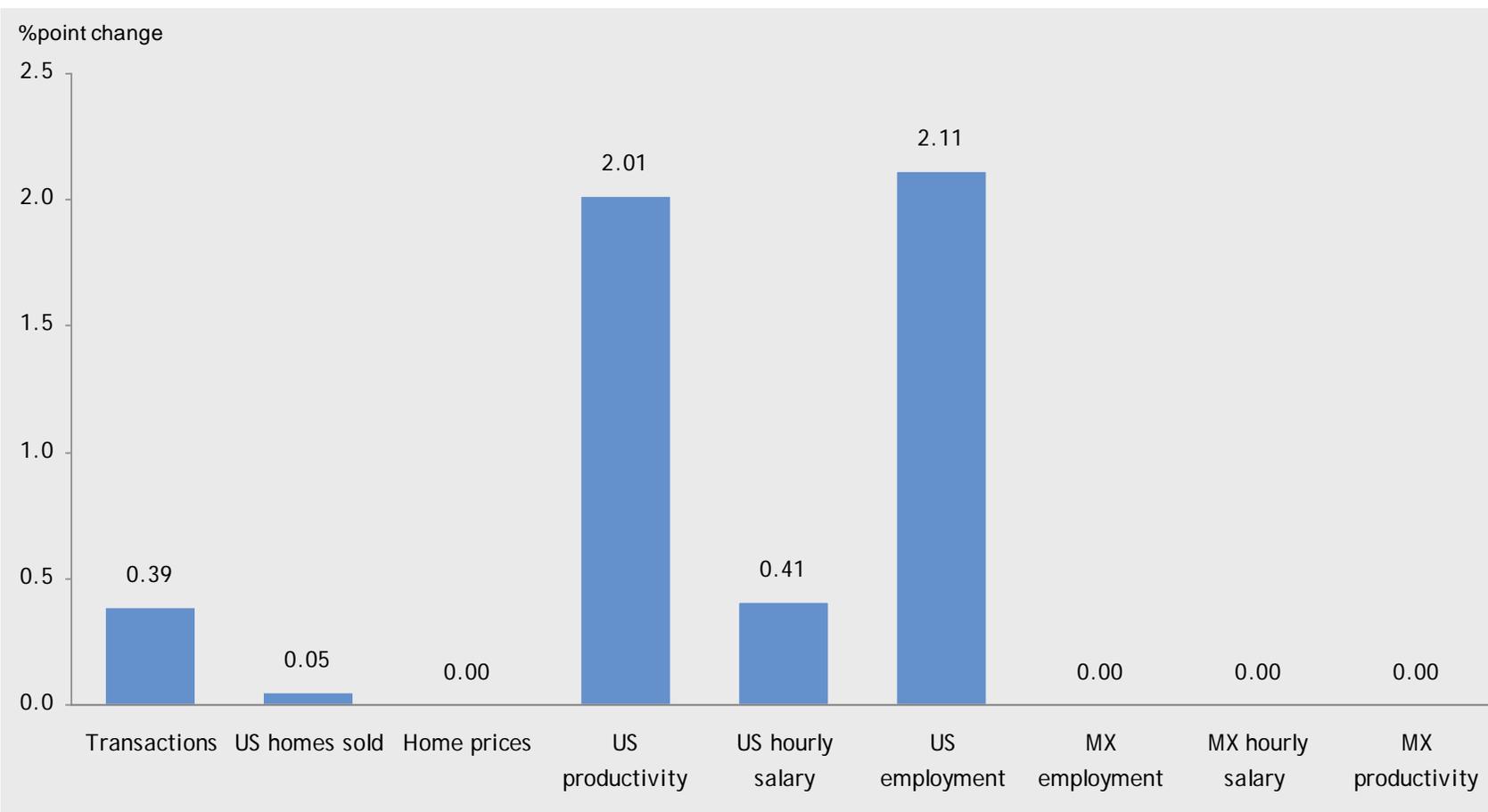


Source: INEGI

# Adding all this into a VAR model

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Remittances' sensitivity to US house and labor market variables



Note: These are the long-term coefficients of the regression and indicate the effect of a 1% change in each variable on the rate of growth of remittances. Coefficient shown with zero value were not statistically significant.

Source: JPMorgan

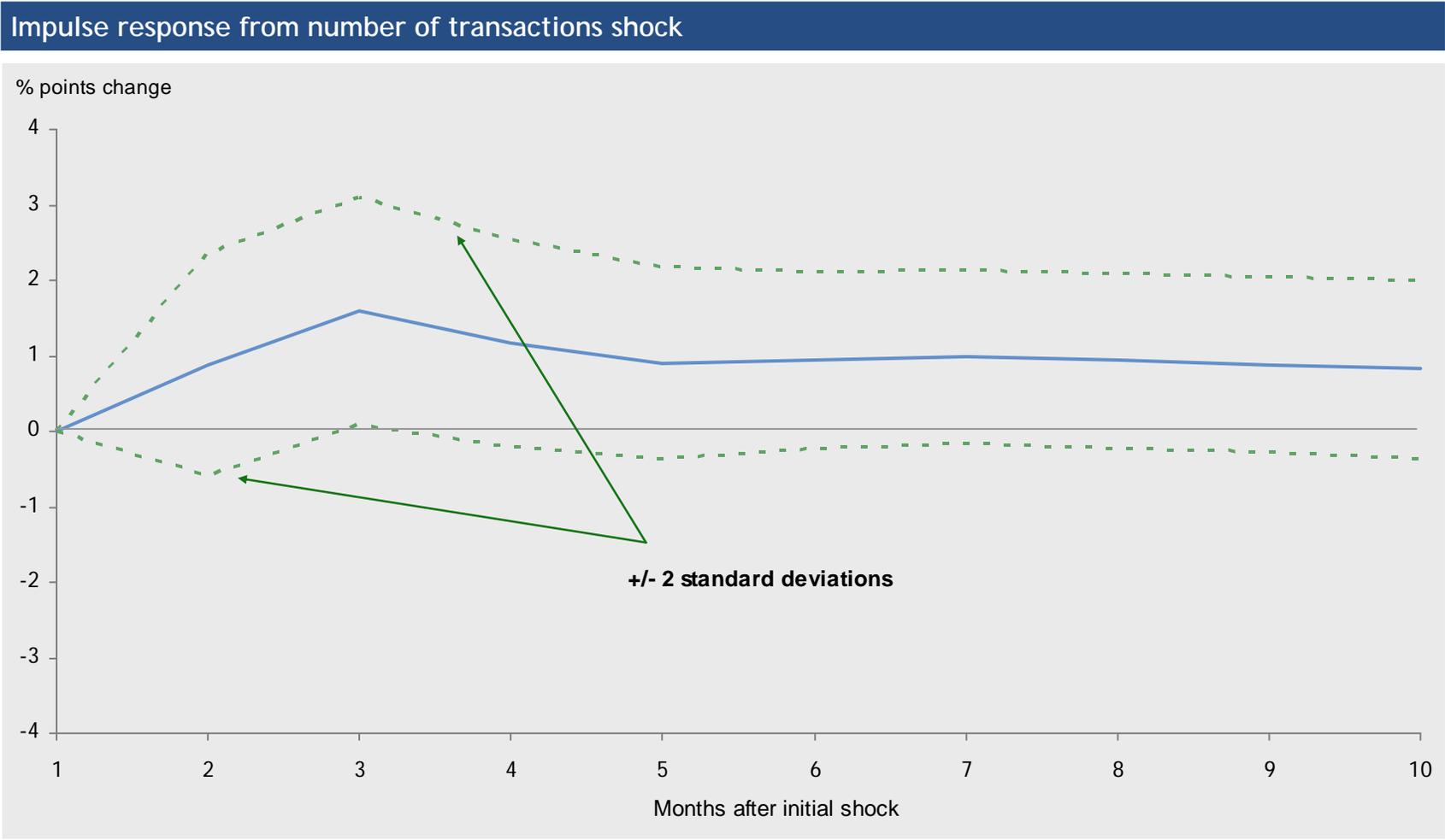
# Variance decomposition

Variance decomposition										
	Months after the initial shock									
%, unless indicated	1	2	3	4	5	6	7	8	9	10
Workers' remittances	100	91	87	82	79	76	73	69	66	62
Existing single-family homes sold	0	3	3	3	3	4	5	6	8	10
Transaction of worker's remittances	0	1	4	5	6	6	6	7	7	7
US salary per hour	0	0	1	1	2	3	4	4	5	5
US productivity	0	0	0	0	0	1	1	1	2	2
Mexico salary per hour	0	1	1	1	1	2	2	2	2	2
Mexico productivity	0	1	1	2	3	3	3	3	3	3
US employment in construction	0	2	3	3	3	3	3	4	4	4
Mexico employment in construction	0	0	0	0	0	0	0	0	0	0
Price of existing homes sold	0	0	0	1	2	2	3	4	5	6
Total variance	100	100	100	100	100	100	100	100	100	100

Source: JPMorgan

# Impulse responses. Financial innovation has been a critical determinant.

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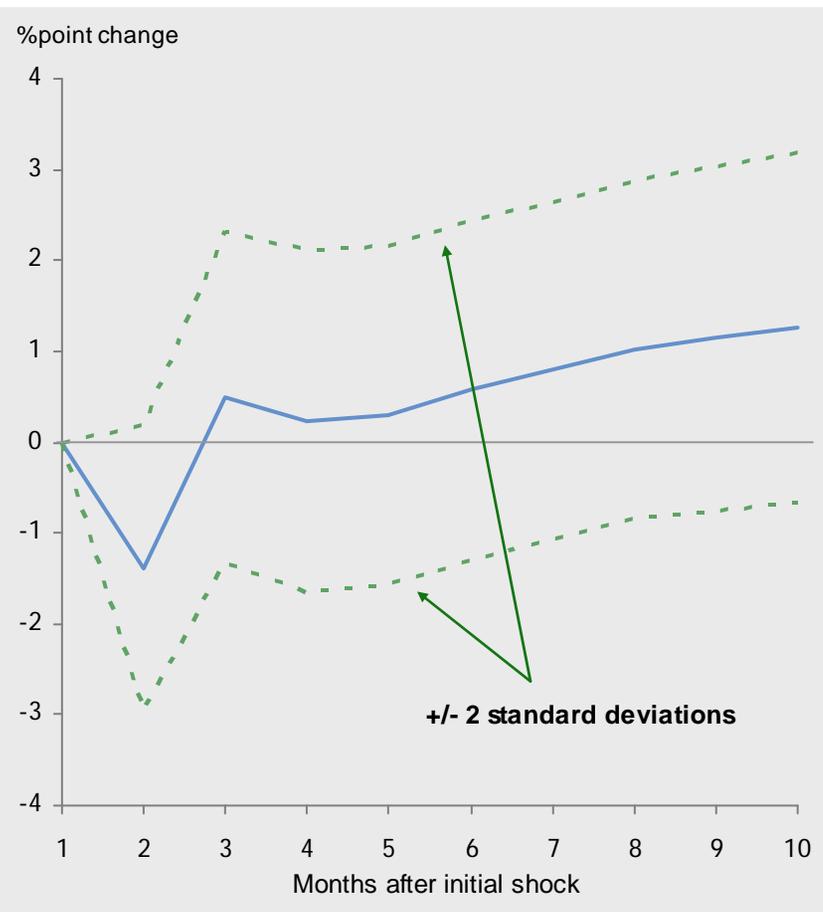


Source: JPMorgan

# Housing market has influenced remittances through demand and labor markets

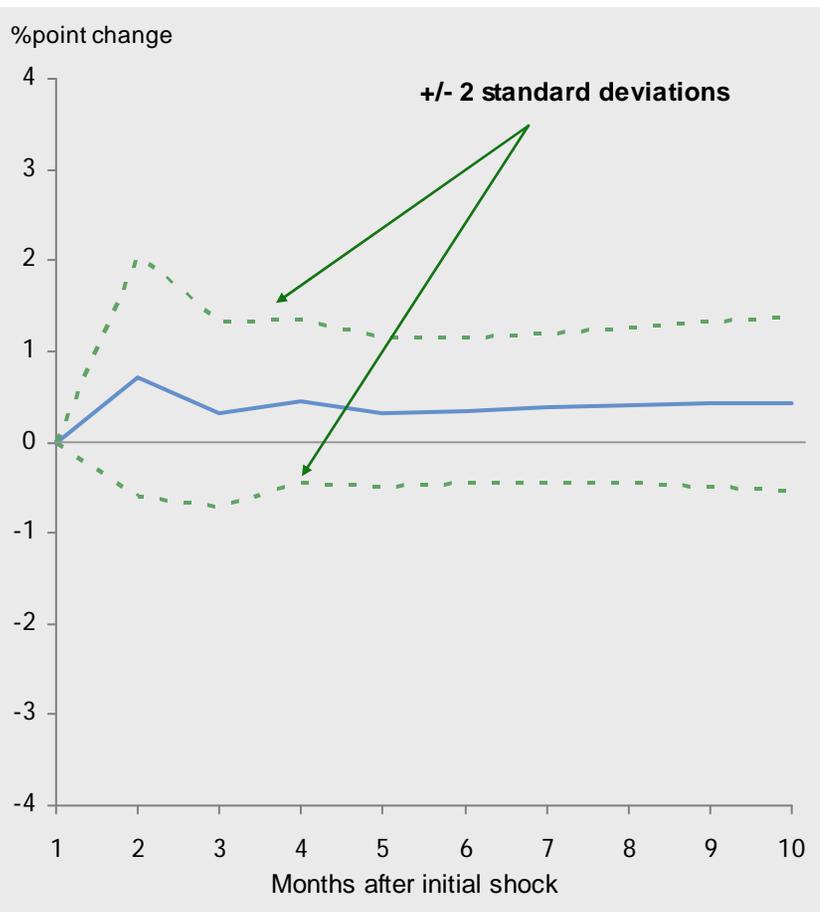
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### Impulse response from existing single family-homes sold shock



Source: JPMorgan

### Impulse response from US employment in construction shock

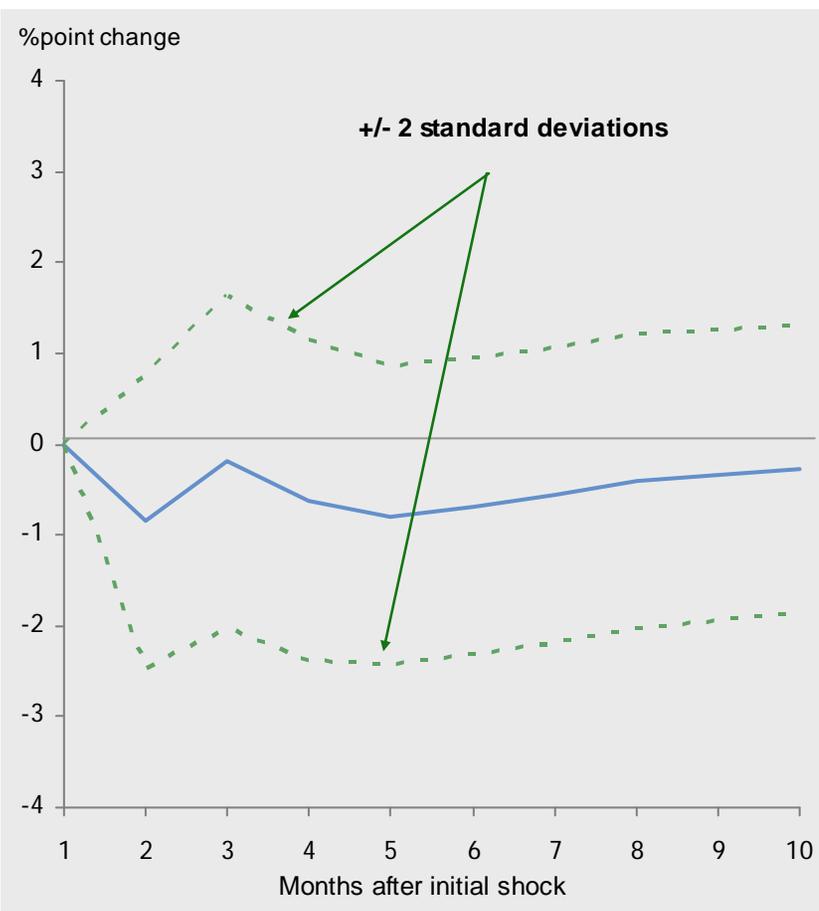


Source: JPMorgan

# But long term—labor markets are the key determinant.

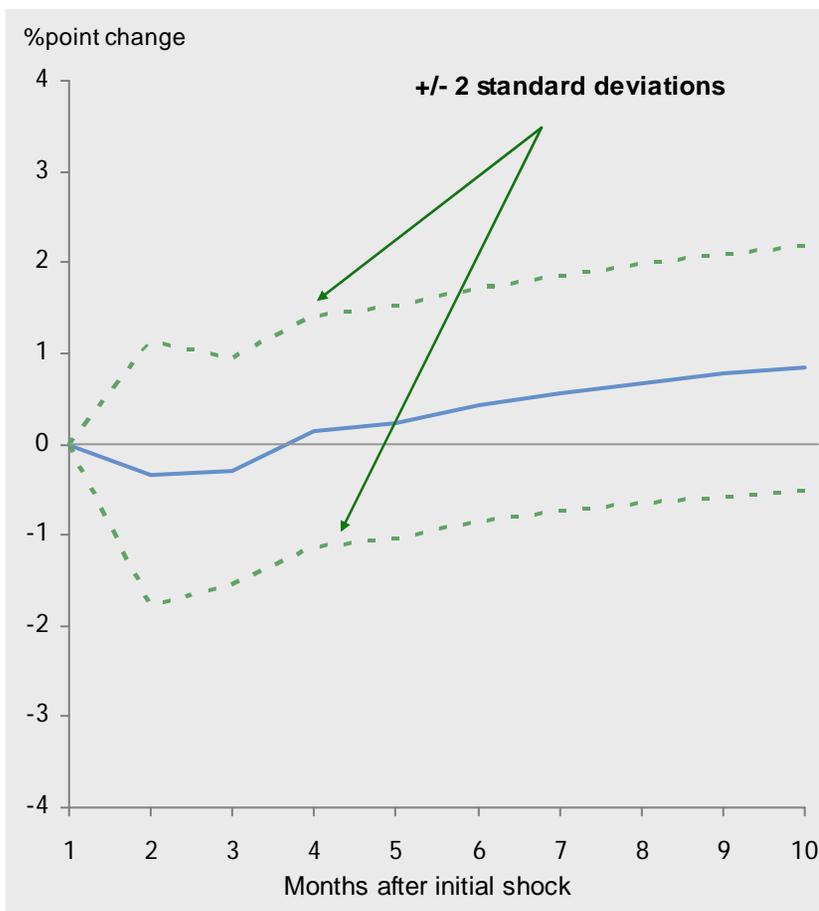
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**Impulse response from Mexico productivity shock**



Source: JPMorgan

**Impulse response from US productivity shock**

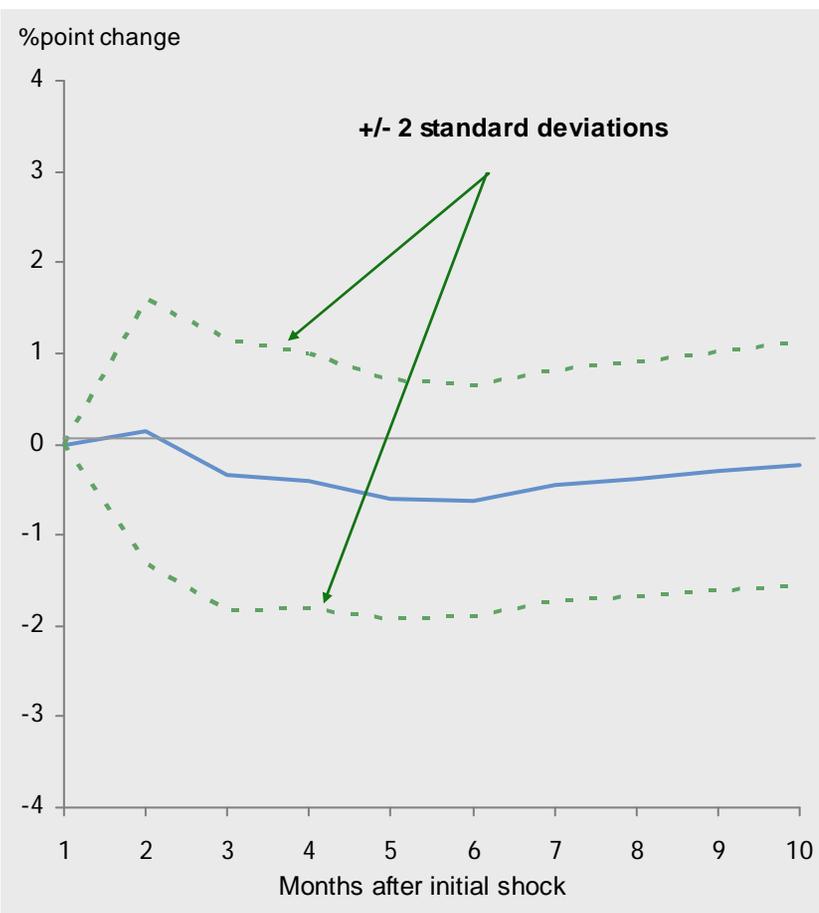


Source: JPMorgan

# Both productivity and wage differentials

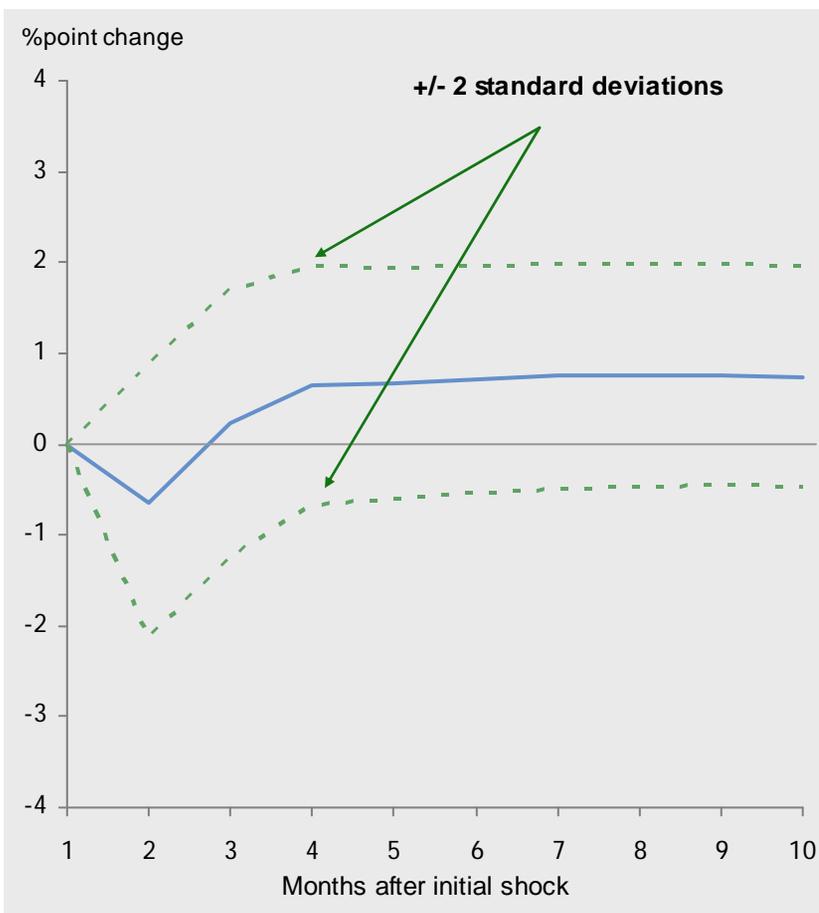
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Impulse response from Mexico salary per hour shock



Source: JPMorgan

Impulse response from US salary per hour shock

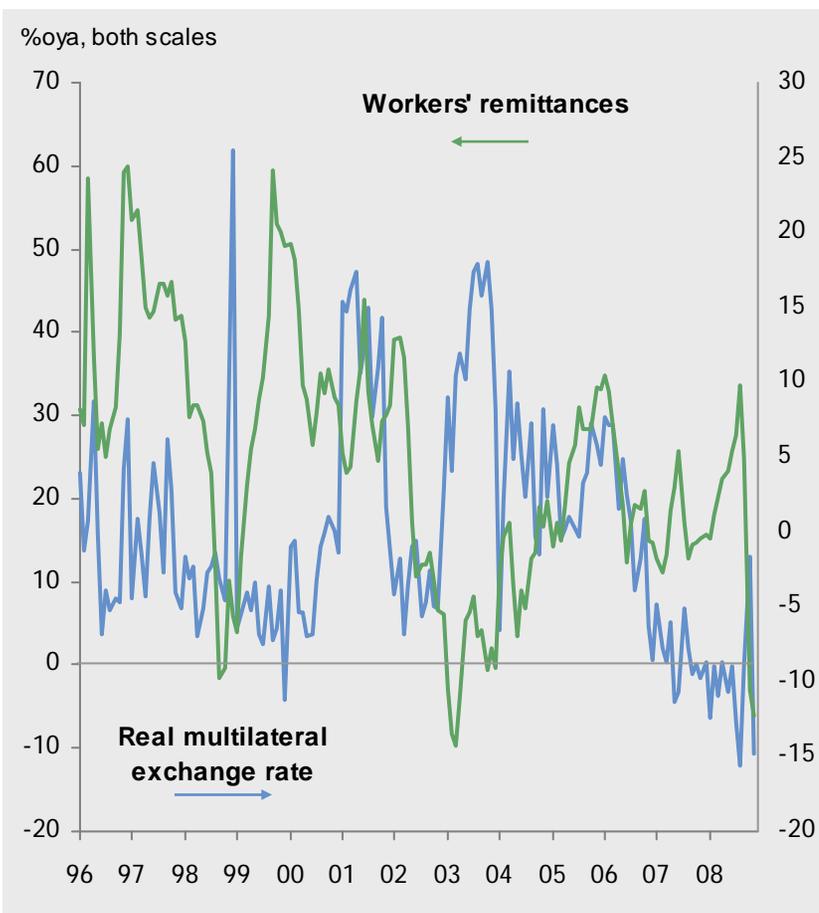


Source: JPMorgan

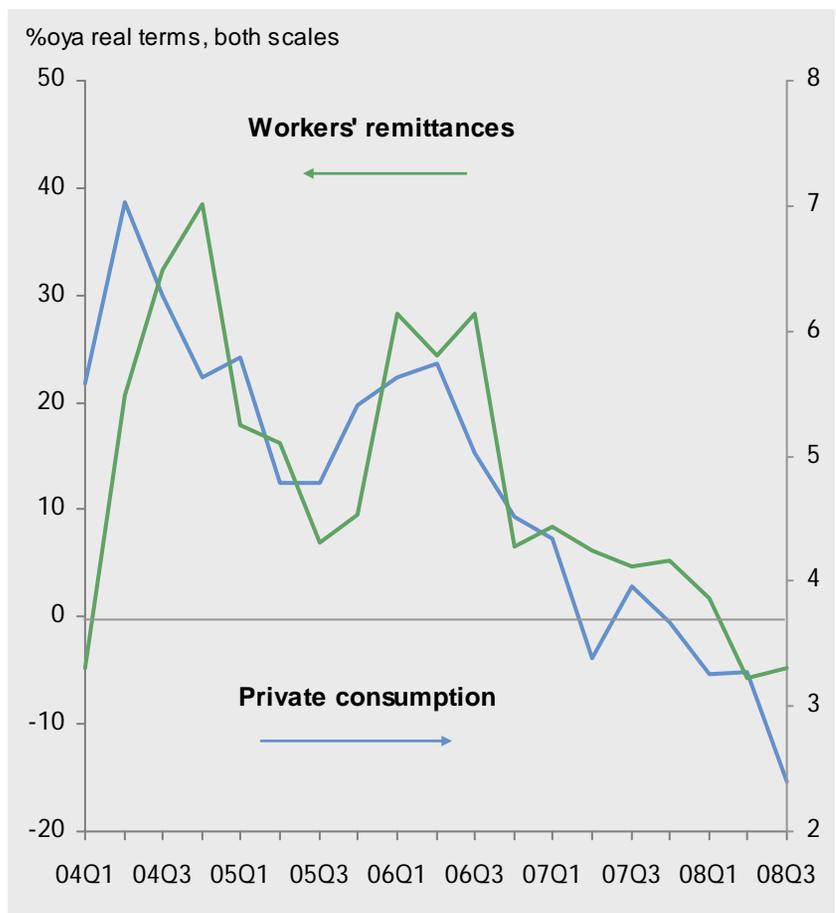
# Contrary to what has been argued, the effect of remittances on the currency and private consumption has been limited

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Mexico's worker remittances and real exchange rate



Workers' remittances and private consumption



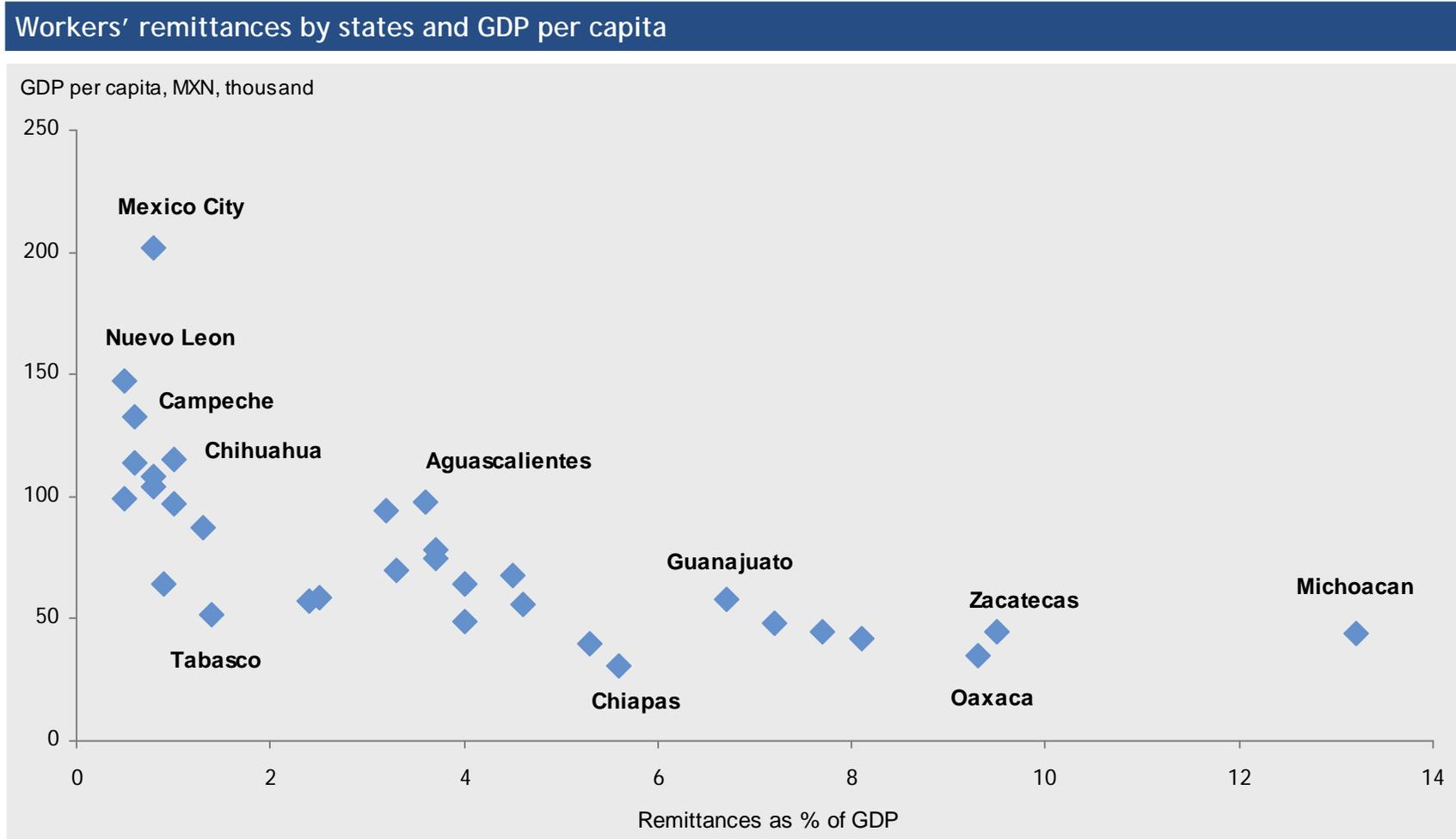
## Effect on private consumption

### Effect of exchange rate and remittances on private consumption

		%oya change in remittances (USD)			
		0%	5%	10%	15%
Nominal MXN depreciation (%oya)	0%	0.0	-0.15	-0.30	-0.45
	10%	0.30	0.15	0.0	-0.15
	20%	0.60	0.45	0.30	0.15
	30%	0.91	0.76	0.60	0.15

Source: JPMorgan

# The main impact has been regional--Migrants have been low income workers and the drop in remittances has impoverished even more low income families



Source: INEGI