

# Unpleasant arithmetic

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**April, 2009**

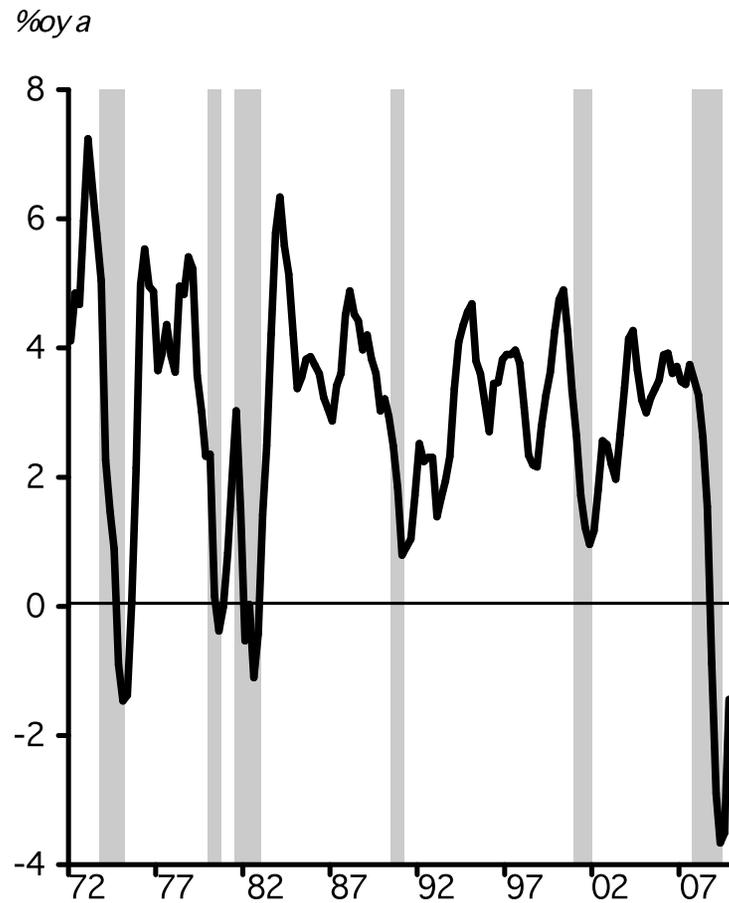
J.P.Morgan

# Main Points

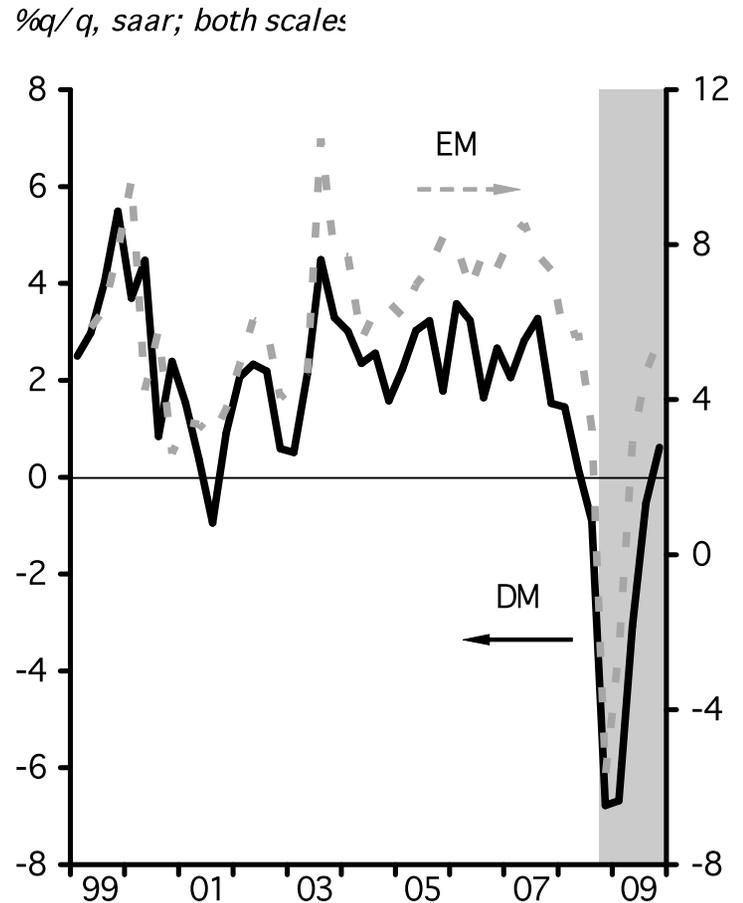
- **Global shocks produce a deep synchronized downturn**
  - Credit and inflation shocks are global. Asia, Europe and Americas are all in recession
  - Consumers started the downturn, but business adjustment is gathering steam
  - Global GDP contracts at 3% pace in 1H09
- **The recipe for a 2H09 US-led recovery**
  - The Fed contains the funding crisis and promotes lower mortgage rates. Credit markets function
  - Cushions come from policy ease and lower energy prices
  - Confidence stabilizes, producing a rebound in durable spending from record low levels
  - Global GDP rises at a 1% pace in 2H09. Stage set for above-trend growth next year
- **Unpleasant arithmetic**
  - A three decade trend of falling unemployment is over and will have profound effects on the political economy
  - Global slack to push core inflation toward zero. Central banks to battle against deflationary psychology
  - The combination of high unemployment, structural budget deficits and weak capital formation will push US potential growth towards 2%

# It's deep and synchronized

## Global GDP

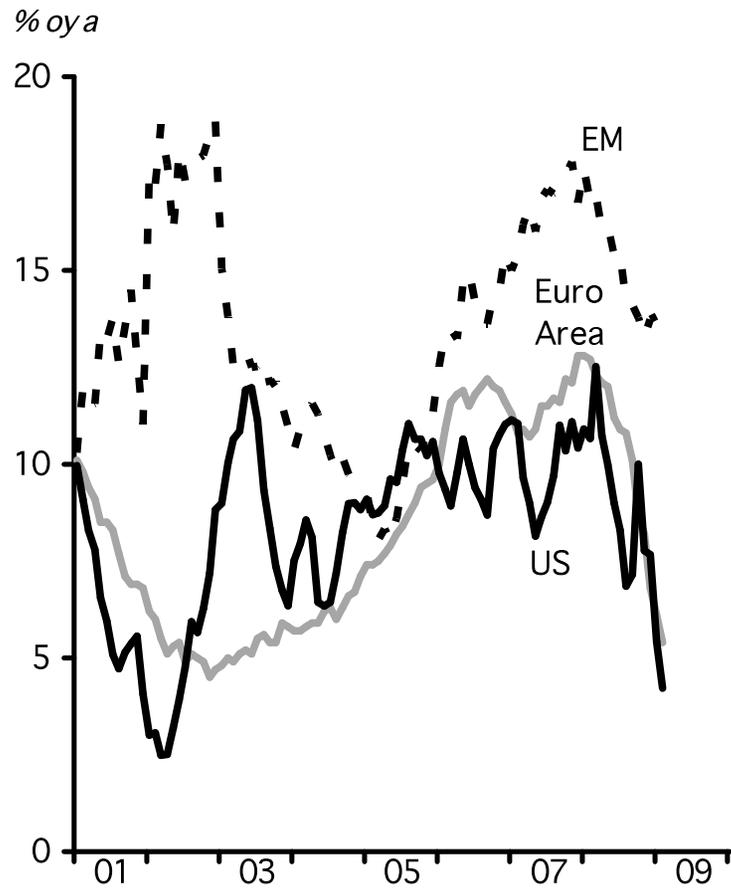


## EM & DM GDP



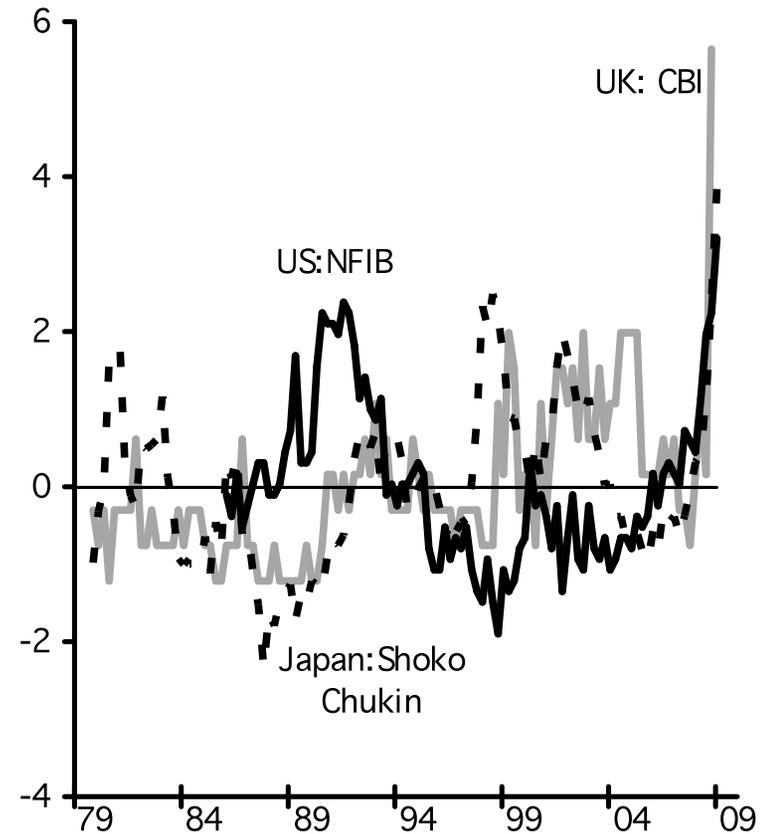
# The credit cycle is global

## Global domestic credit



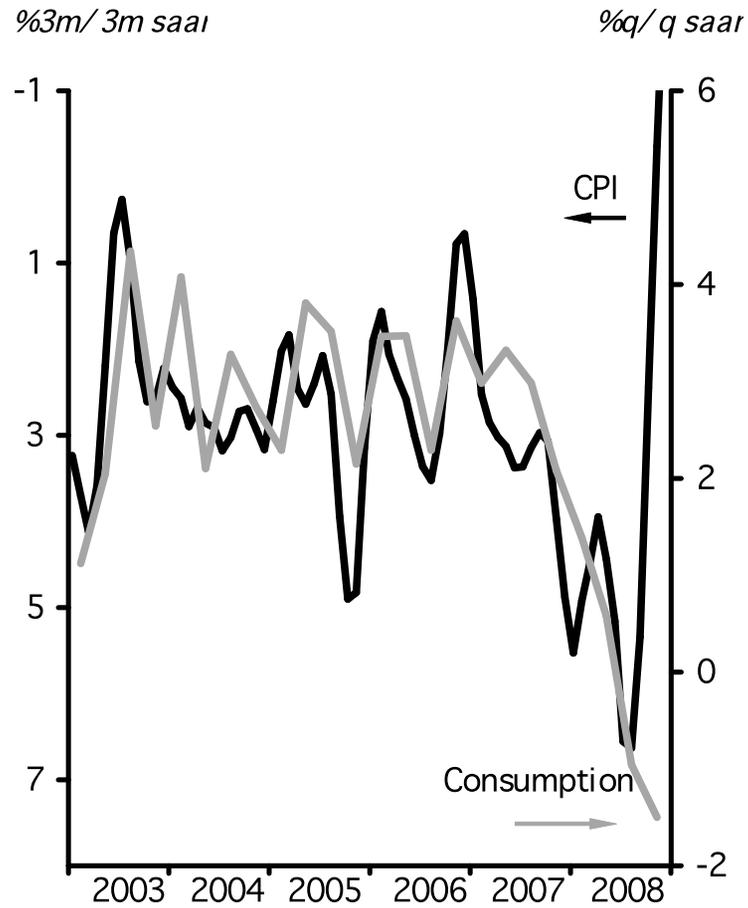
## Business surveys on credit tightening

st dev away from mean

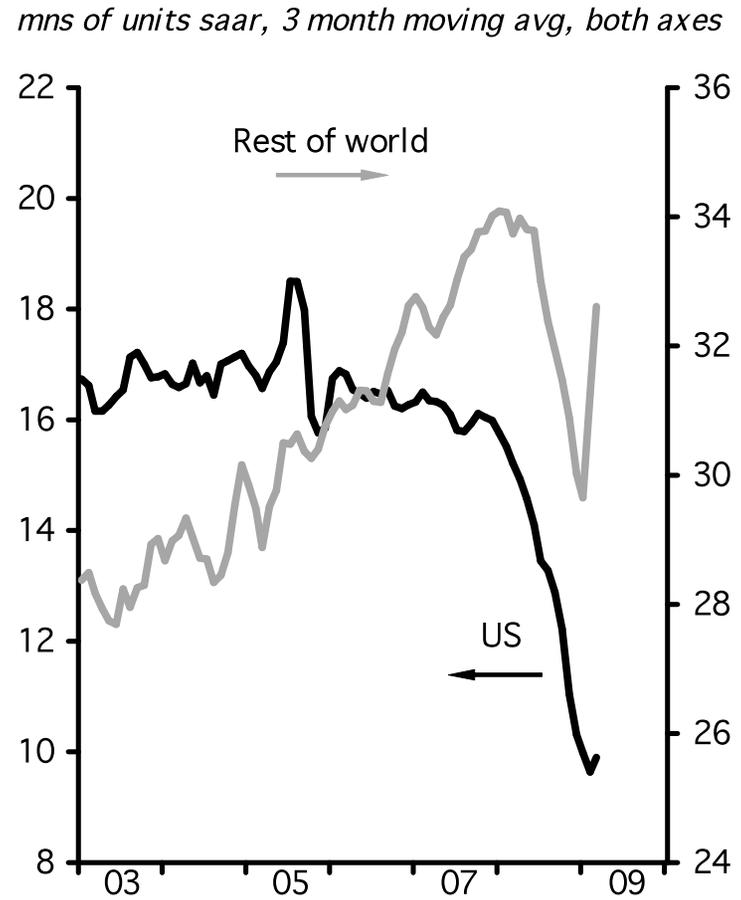


# The inflation shock was global

## Global CPI and consumption

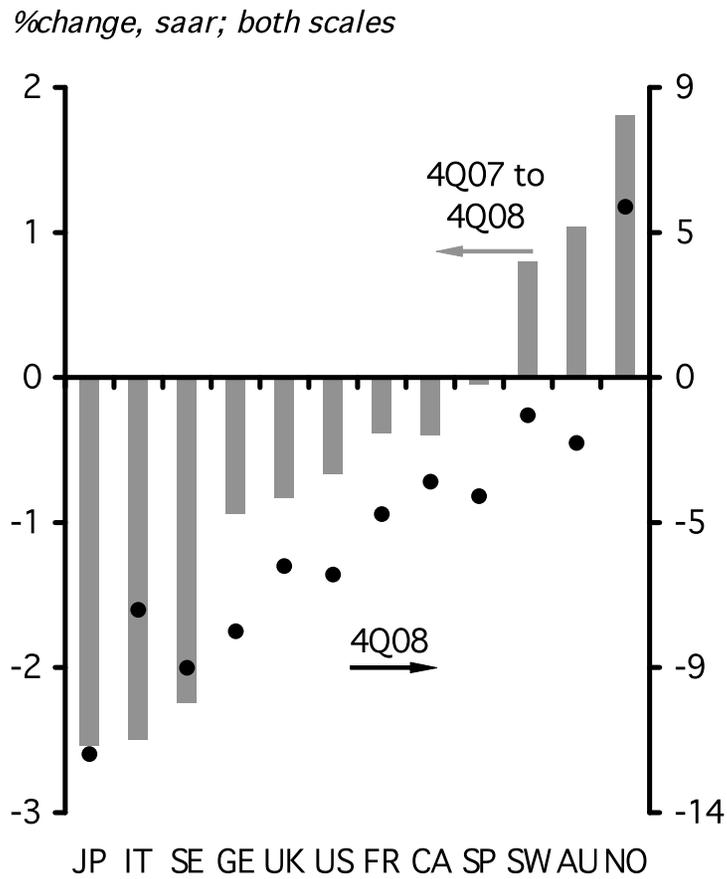


## Global vehicle sales

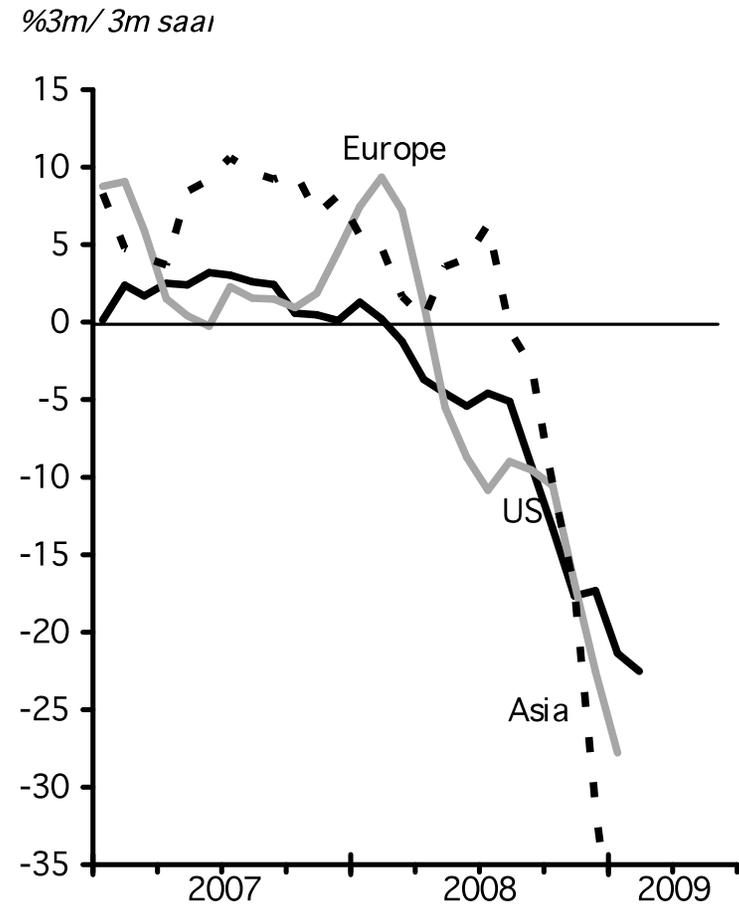


# The US is in the middle of the pack

## Real GDP, developed economies

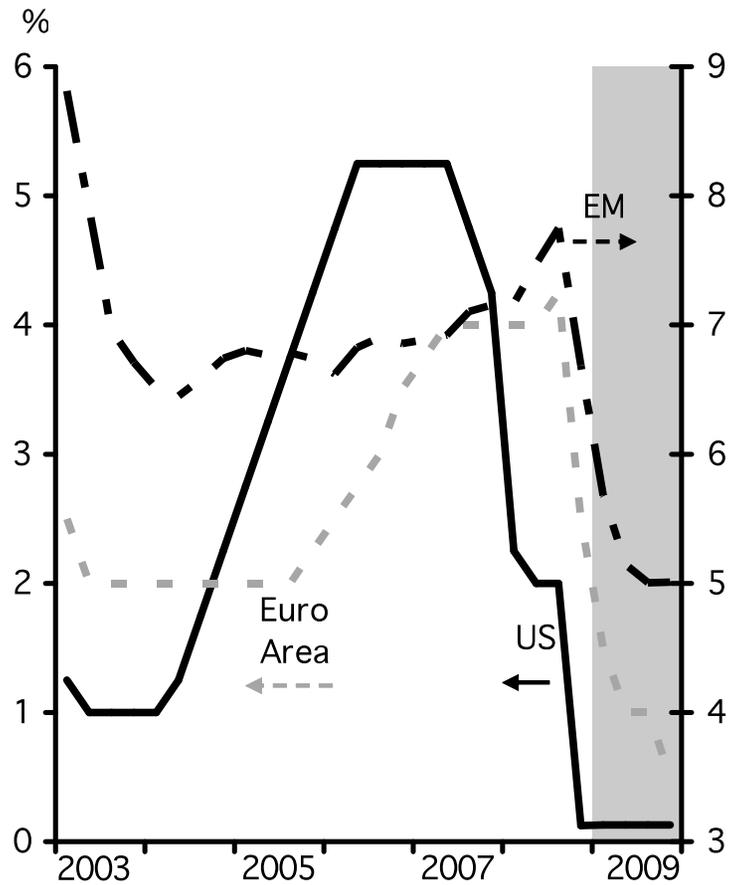


## Global manufacturing output



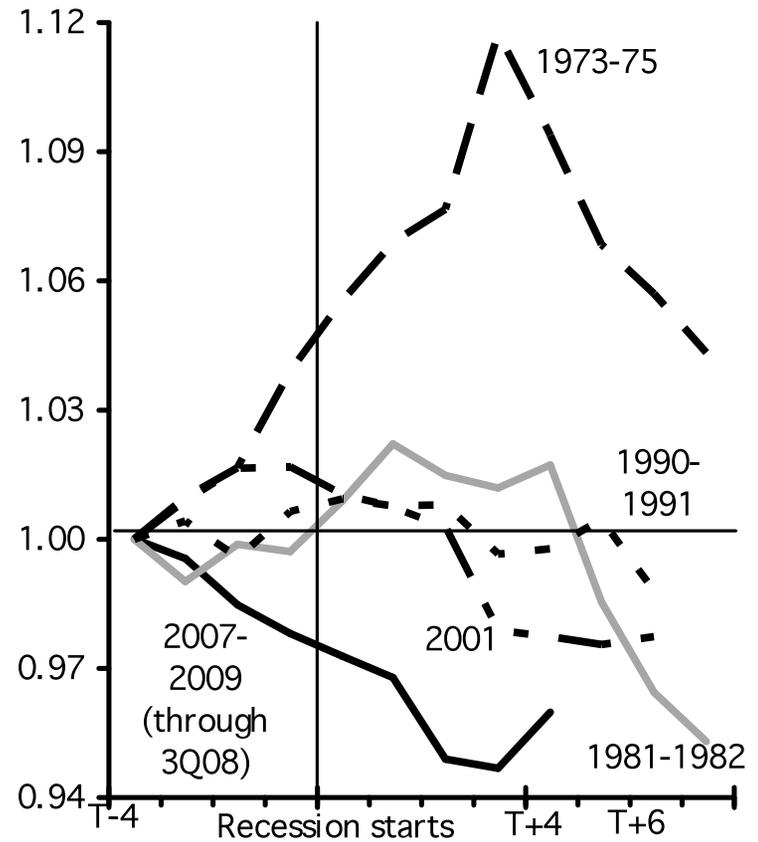
# Two equalizers: Policy and corporate positioning

## Global policy rates



## US real inventories to final sales

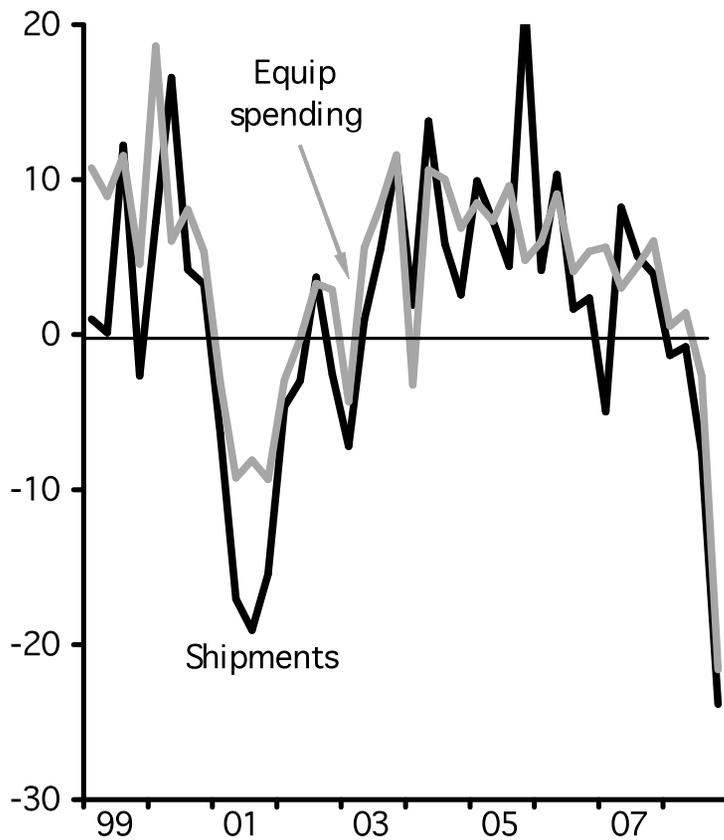
*Index, 1.00 is ratio 4 quarters before the onset of recession*



# Corporate adjustments are intensifying

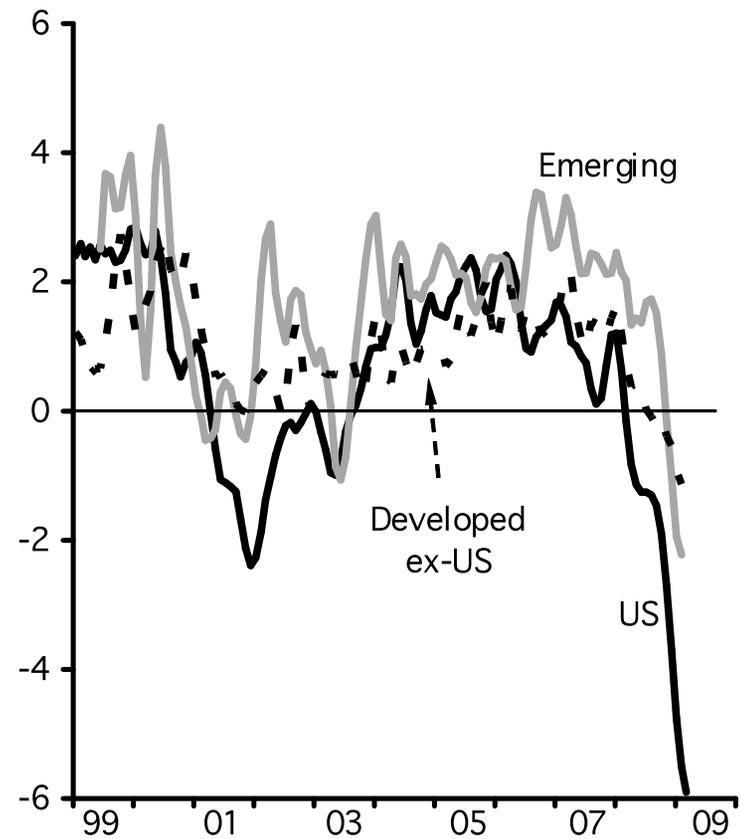
## G3 capital goods shipments and global bus equip spending

*%q/q, saar; 4Q08 est for cape*



## Global employment

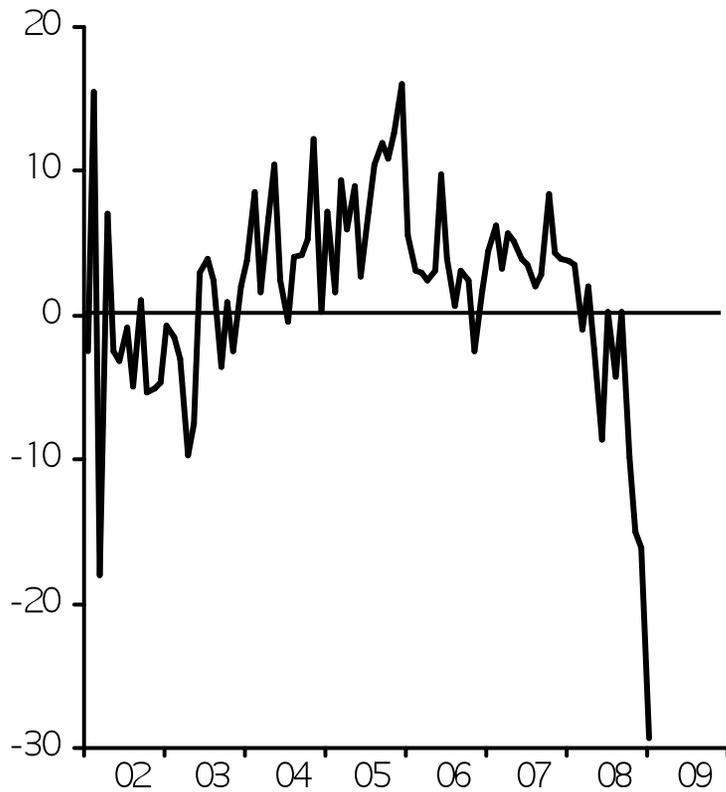
*%3m/3m saar*



# Europe and Japan at the back of the pack

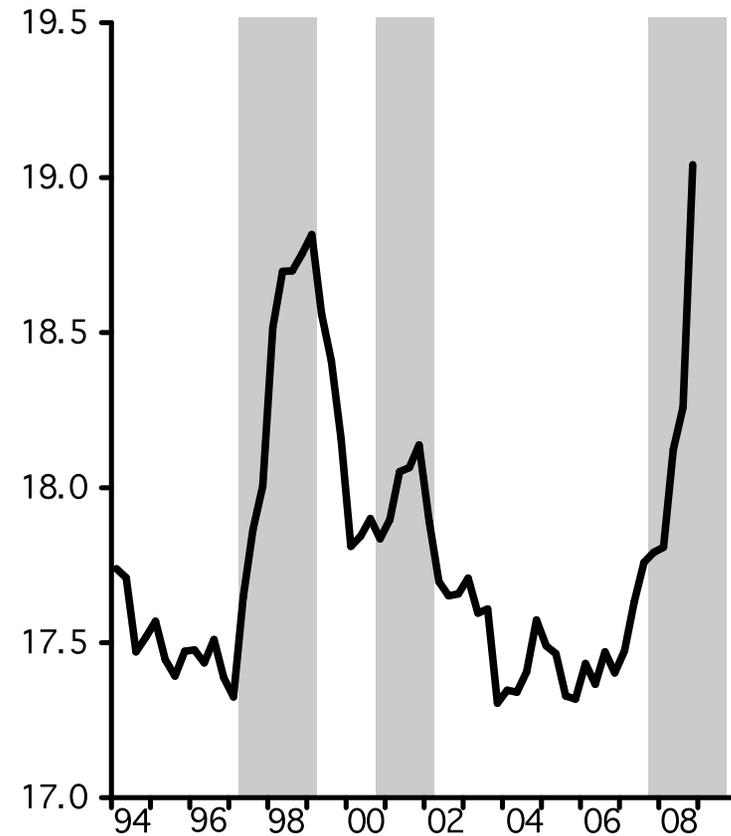
## French job offers

*%ch over 12 month:*



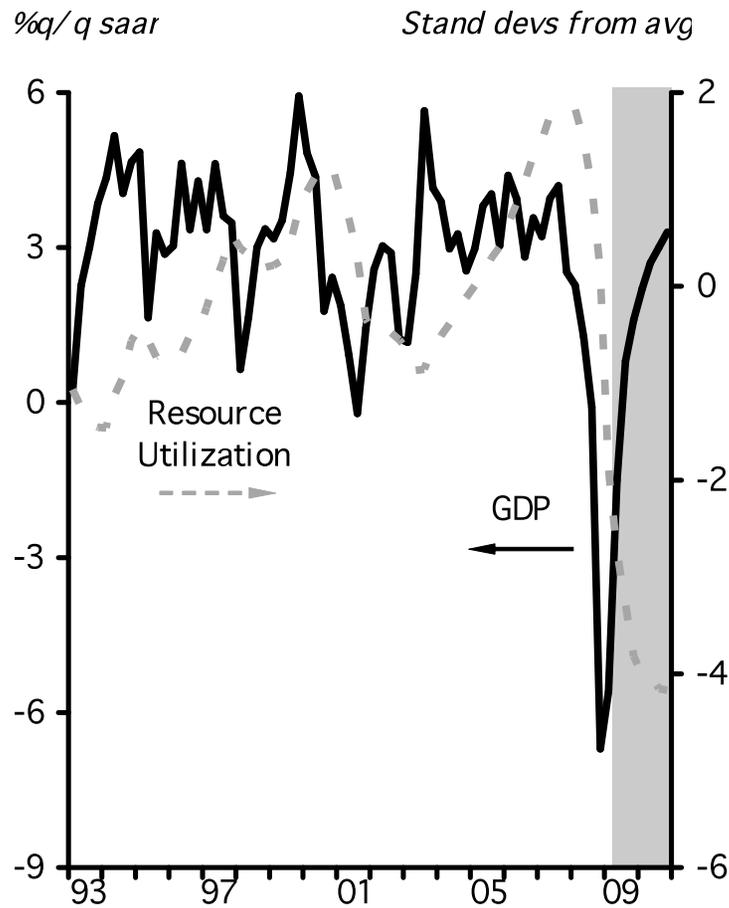
## Japan: Ratio of real inventories to final sales

*%, estimated by J.P.Morgan*

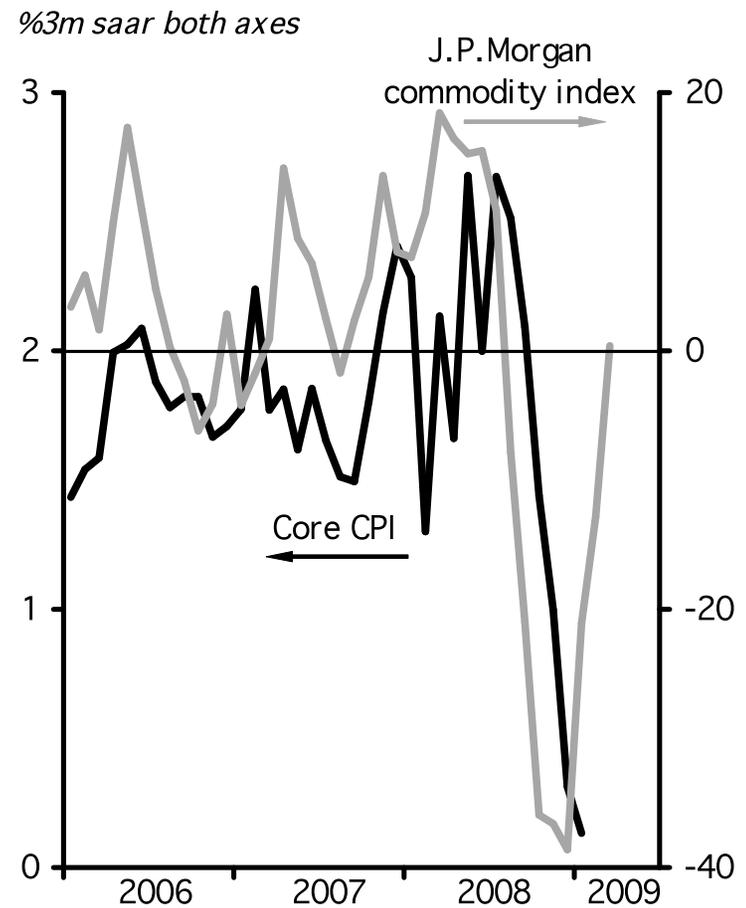


# Pricing becomes a wedge issue

## Global GDP and resource utilization



## Global core CPI and commodity prices



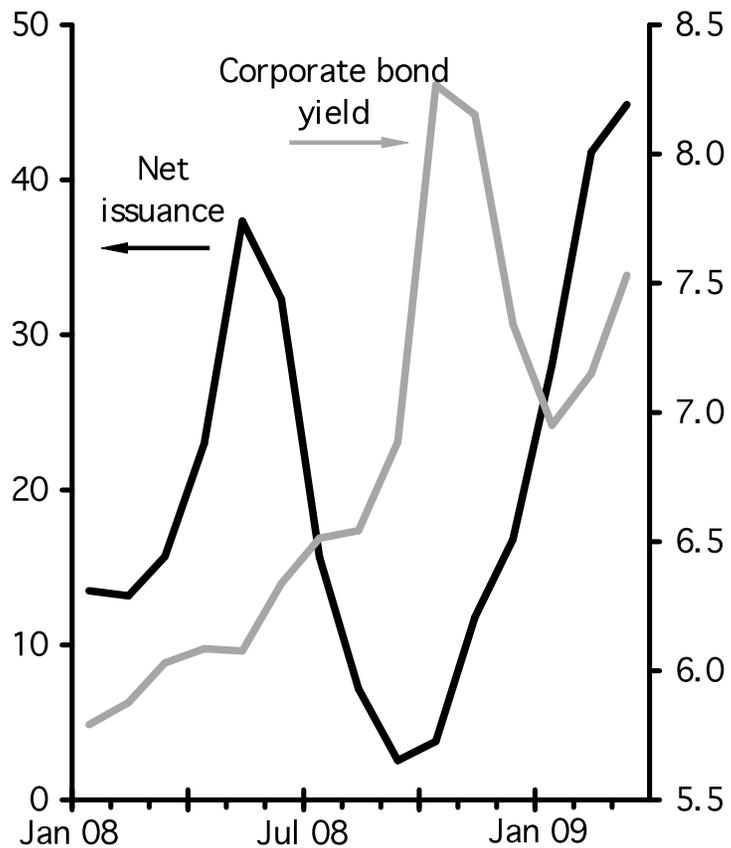
# Walking on a path to a second half recovery

- **Containment of the financial crisis**
  - Funding markets function
  - Credit market differentiation
- **Short circuiting negative feed back loops**
  - Lower inflation lifts purchasing power
  - Consumers have front-loaded weakness. They don't convulse as labor markets deteriorate
  - Significant fiscal stimulus adds 2% to global growth from this quarter onward
- **Confidence lifts and supports activity**
  - Home and car sales stabilize by end of 1Q09
  - Orders/inventory ratios rise signaling traction
  - By early summer business is lean and needs to expand in response to modest demand lift

# Credit market activity has improved for corporates

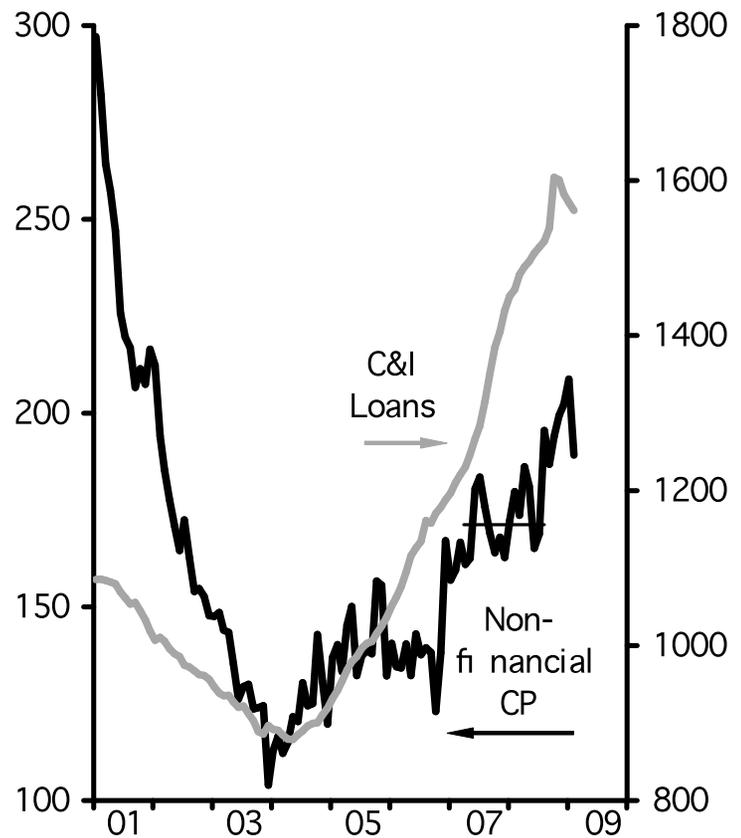
## High-grade corp, nonfinancial

*\$bn, mr, 2-mo avg.*      *% , J.P. Morgan index*



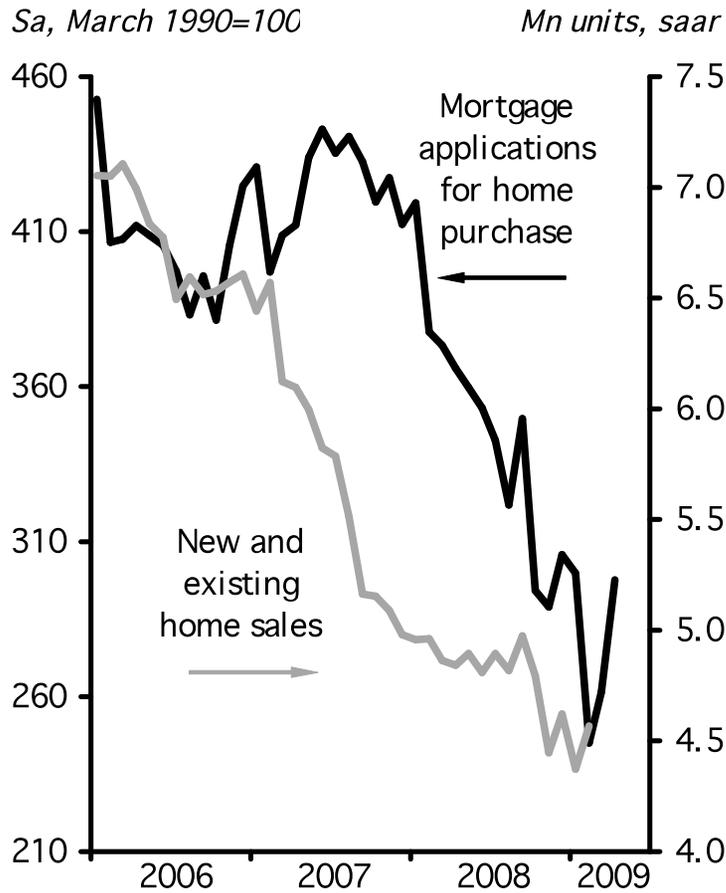
## Commercial paper and business bank loans

*\$ billion, both scales*



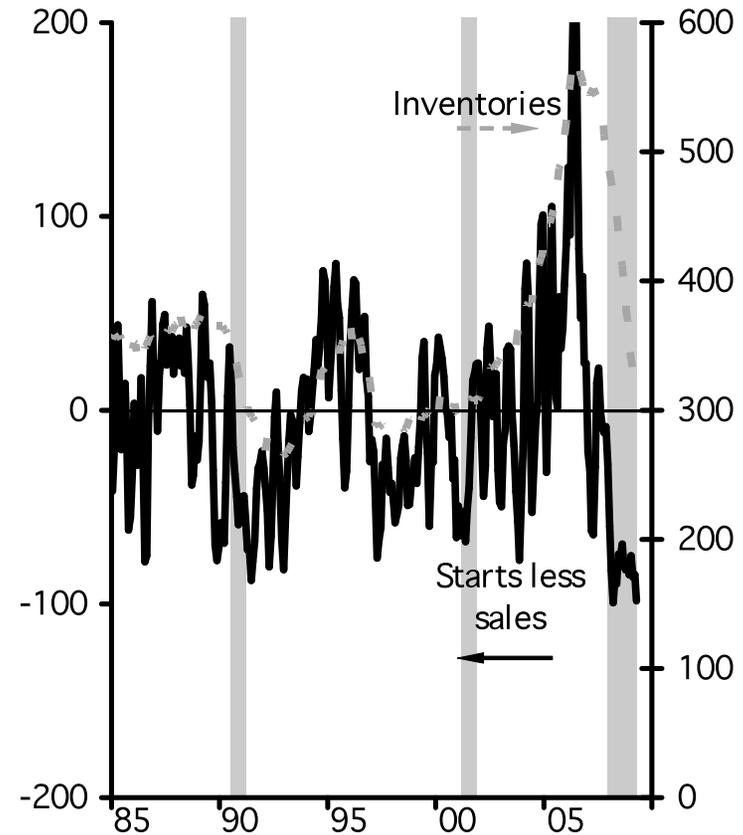
# Signs that housing activity will soon stabilize

## Mortgage apps and home sales



## New home inventories and sales start gap

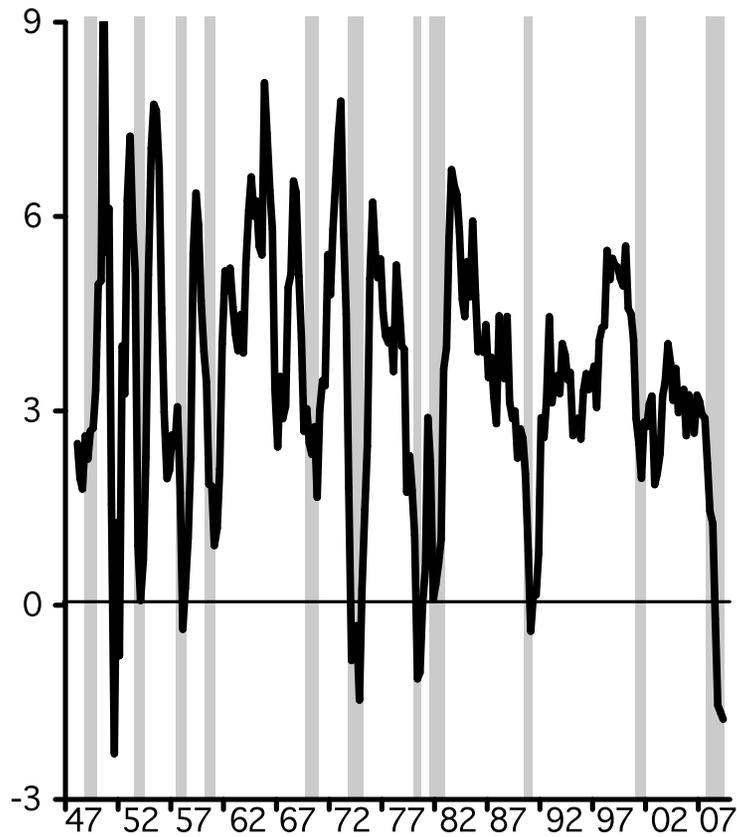
*mil units, both scales*



# Deepest downturn for consumers on record

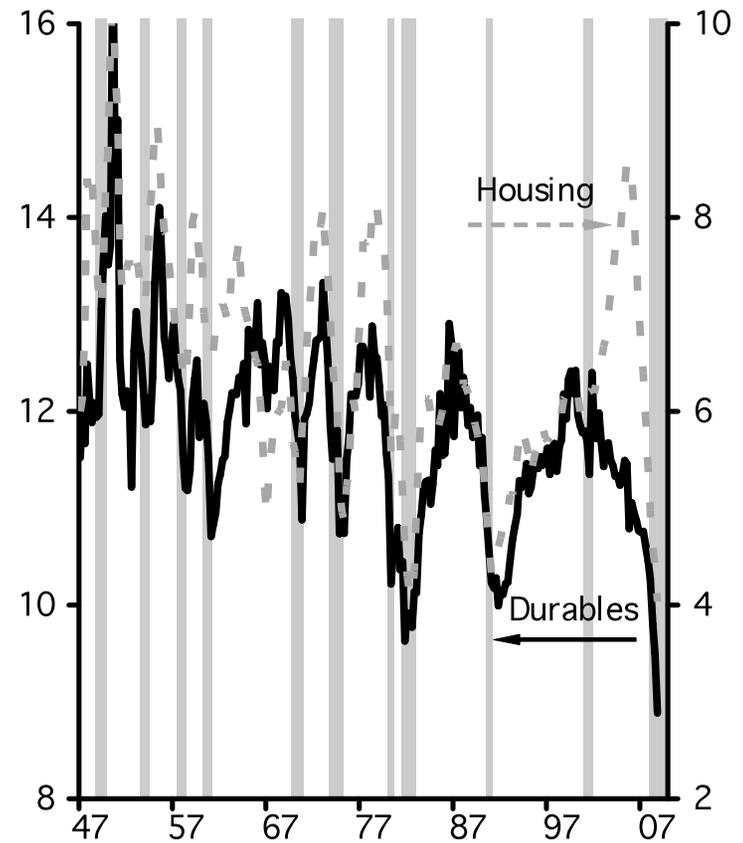
## Real consumption

*%ch at annual rate over 4 quarters*



## Consumer outlays

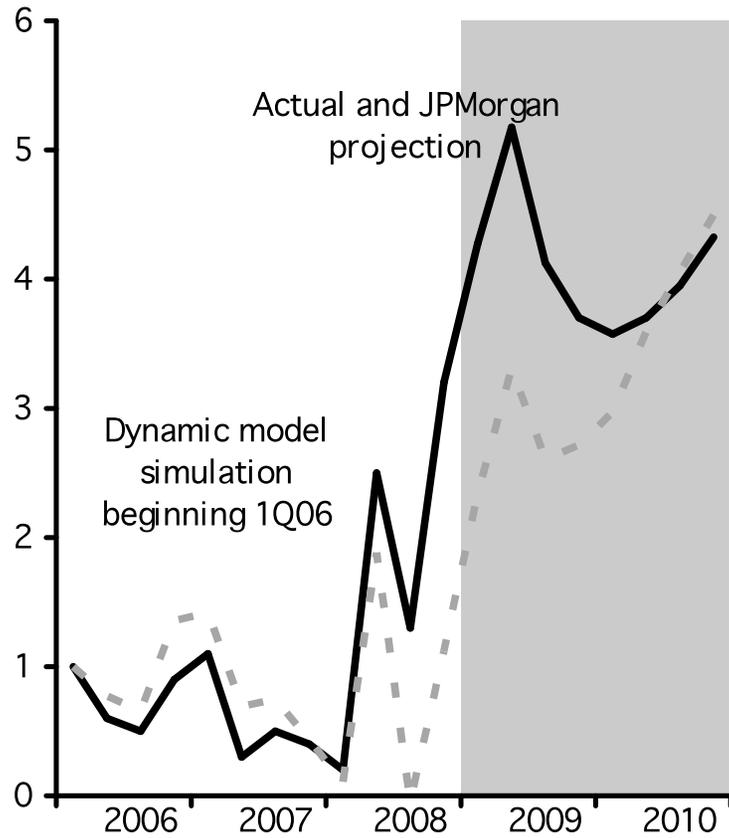
*% of income, both scales*



# Households have front loaded retrenchment

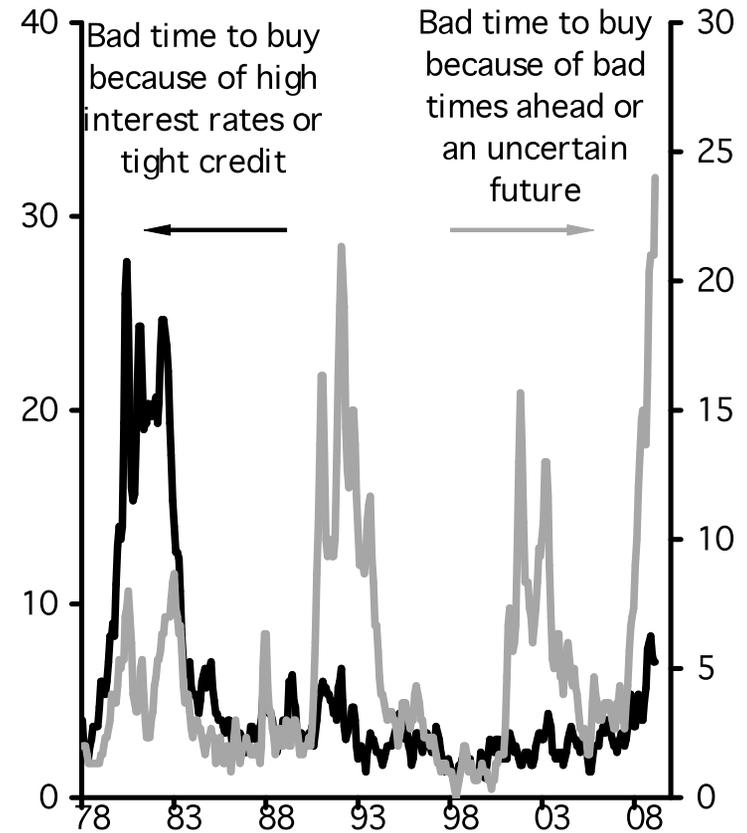
## US personal saving rate

%p.a.



## Buying conditions

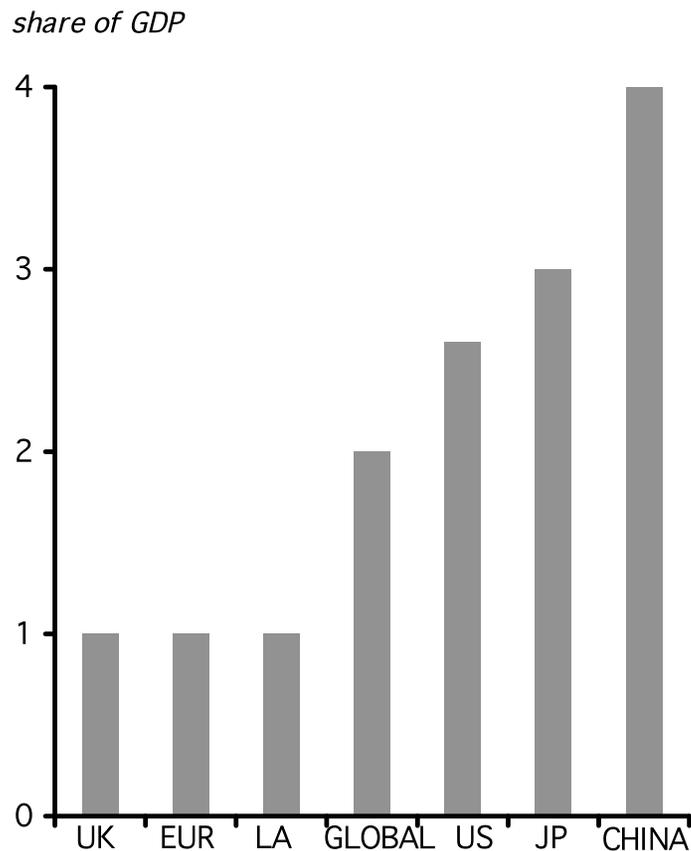
Percent, both scales 3mma





# An axis of policy vigor: US, China, and Japan

Fiscal thrust coming 4 quarters



US: fiscal impact on GDP forecast

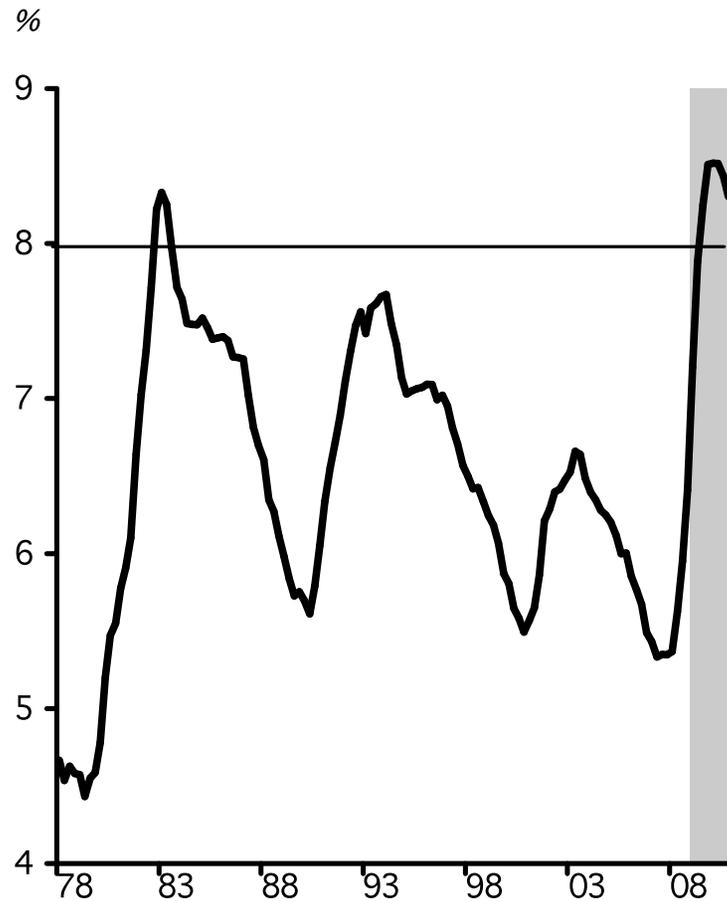
	GDP Forecast	GDP ex stimulus	Diff.	Fiscal Thrust (\$bil)
1Q09	-4.5	-4.5	0.0	0
2Q09	-2.0	-3.7	1.7	15
3Q09	1.0	-2.2	3.2	43
4Q09	1.0	-1.1	2.1	62
1Q10	2.5	1.5	1.0	71
2Q10	3.0	3.5	-0.5	67
3Q10	3.5	4.0	-0.5	63
4Q10	4.0	4.4	-0.4	60

# US GDP forecast: A tale of two halves

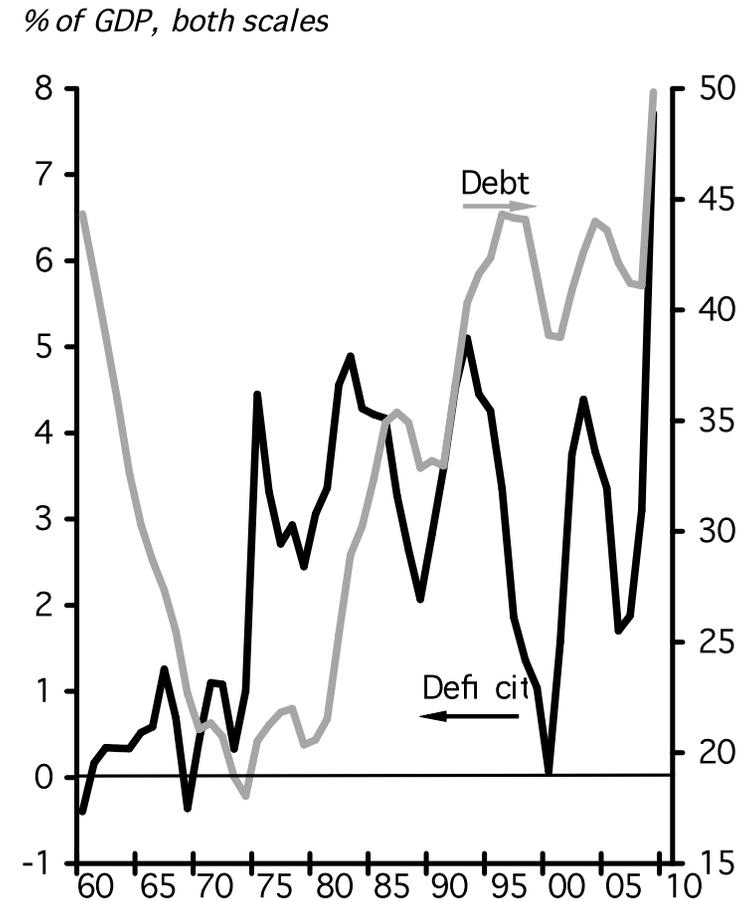
	2H08	1H09	2H09	2010 Q4/Q4
Real GDP	-3.5	-3.3	1.0	3.1
Domestic final sales	-4.1	-2.7	0.8	2.6
Consumer spending	-4.1	0.7	1.0	2.2
Business investment	-13.3	-20.6	-3.2	2.4
Residential	-19.5	-25.7	-2.5	11.4
Government	3.5	-0.1	3.0	2.7
Net exports (contribution)	0.5	0.0	-0.4	-0.2
Inventory (contribution)	0.4	-0.6	0.5	0.7
Inventory growth	-1.7	-4.2	-2.2	1.3
 Memo: Unemployment rate (eop)	 6.9	 8.7	 9.4	 9.0
Industrial production	-13.4	-15.3	3.0	4.2

# A return to growth will be the easy part

## Developed world unemployment rates



## Fiscal deficits and debt, developed economies



# A high required growth rate for the US

If end 2009 unemployment rate is:

8.5%

9.5%

10.5%

Time to 6%:

Average real GDP growth, %ch saar

End 2010

8.8

11.3

13.8

End 2011

5.6

6.9

8.1

End 2012

4.6

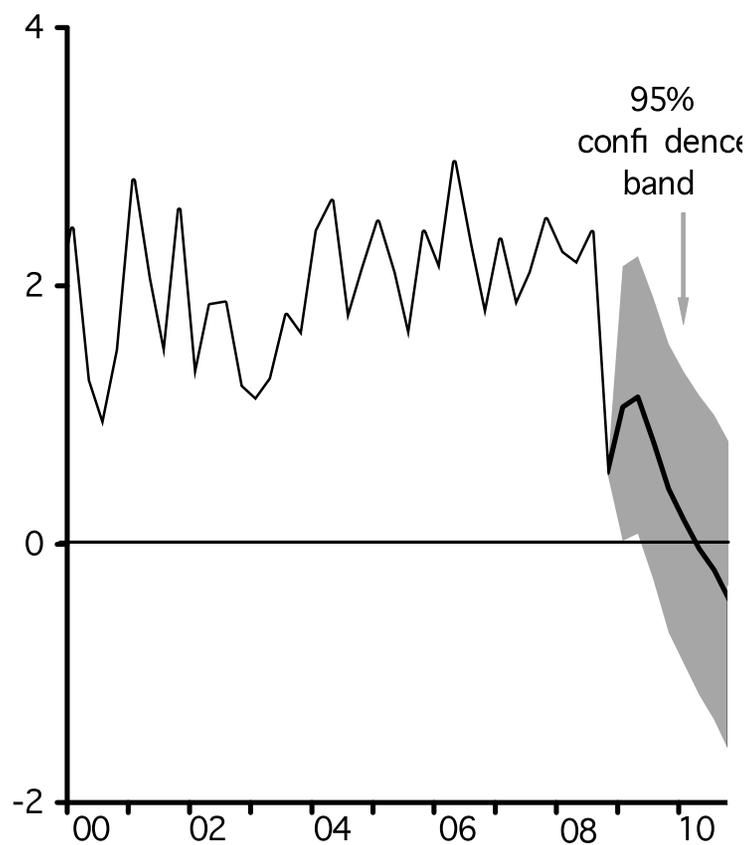
5.4

6.3

# As US core inflation slides, fed battles deflation psychology

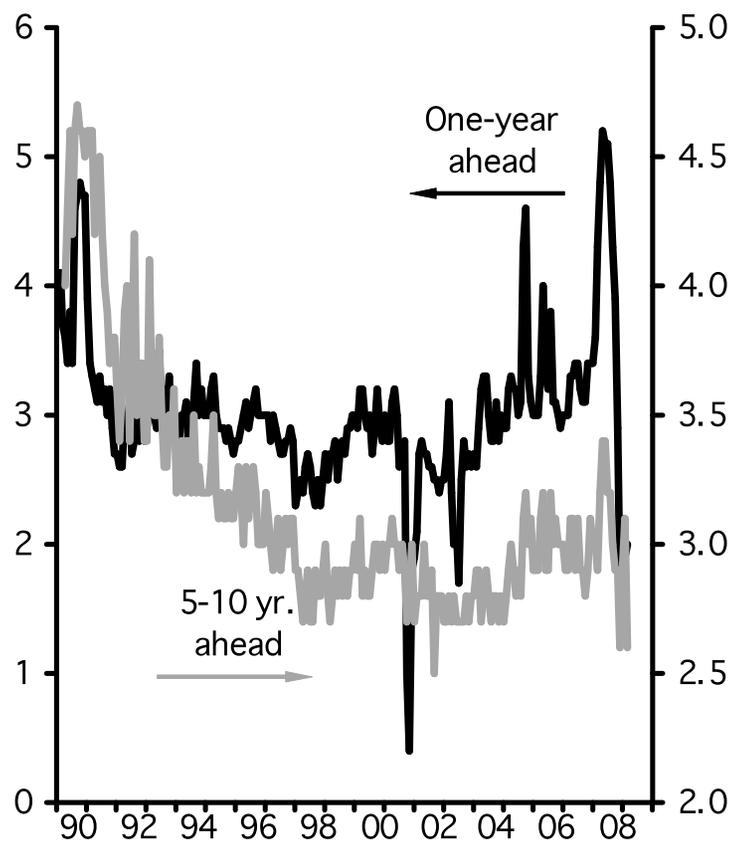
## US core PCE deflator: model forecast

*%q/q, saar*



## Michigan survey of median inflation expectations

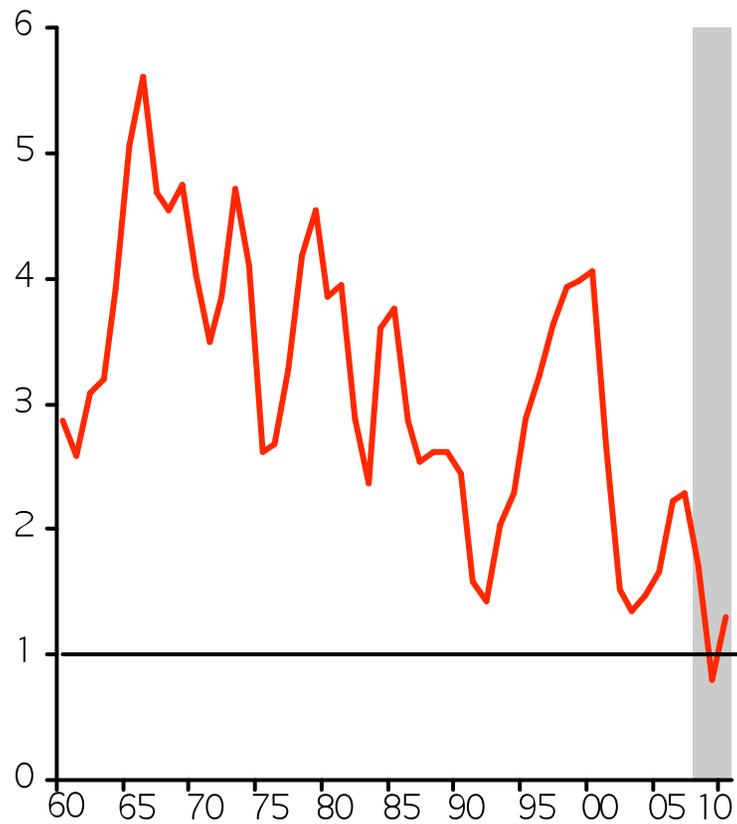
*%, both scales*



# US potential growth could slip to 2%

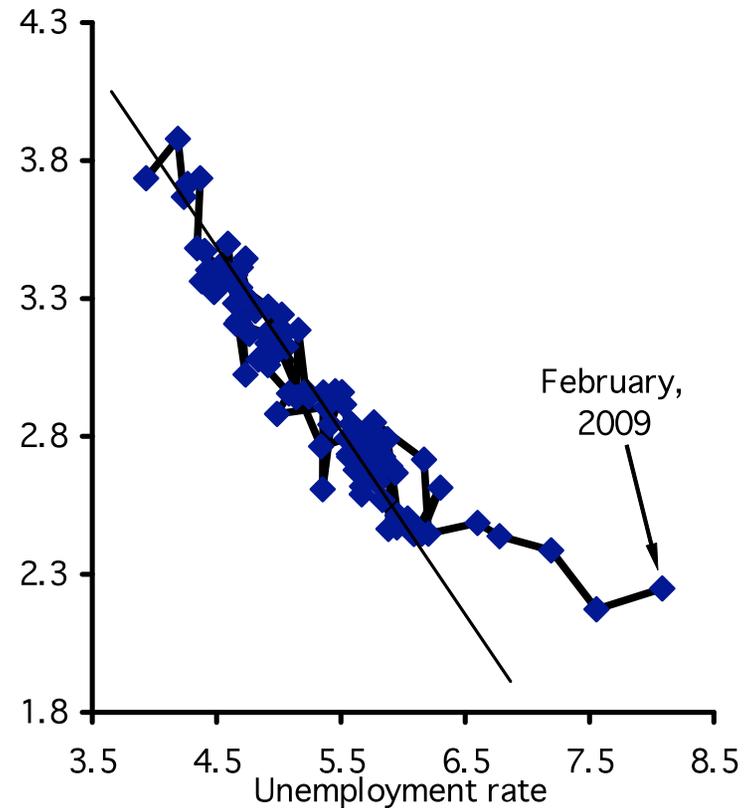
## Growth of the capital stock

*%ch, private nonresidential*



## Beveridge curve 2000-2009

*Vacancy rate*



# JPMorgan US forecast

	%q/q, saar								%q4/q4			%y/y		
	2Q08	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	2008	2009	2010	2008	2009	2010
<b>Gross domestic product</b>														
Real GDP	2.8	-0.5	-6.3	-4.5	-2.0	1.0	1.0	2.0	-0.8	-1.2	3.1	1.1	-2.4	1.9
Final sales	4.4	-1.3	-6.2	-2.7	-2.6	0.1	0.8	1.1	-0.7	-1.1	2.4	1.4	-2.2	1.3
Domestic	1.3	-2.2	-5.8	-3.8	-1.5	0.2	1.5	1.7	-1.7	-0.9	2.6	0.0	-2.4	1.7
Consumer spending	1.2	-3.8	-4.3	1.0	0.5	1.0	1.0	2.0	-1.5	0.9	2.2	0.2	-0.7	1.7
Business investment	2.5	-1.7	-21.7	-24.5	-15.9	-8.1	2.1	-4.4	-5.2	-12.2	2.4	1.6	-14.7	-1.3
Equipment	-5.0	-7.5	-28.1	-25.0	-15.0	-7.0	5.0	-5.0	-11.0	-11.2	2.9	-3.0	-16.8	-0.4
Structures	18.5	9.7	-9.4	-25.0	-20.0	-12.0	-6.0	-3.0	6.3	-16.1	1.2	11.2	-12.1	-4.2
Residential investment	-13.3	-16.1	-22.7	-35.0	-15.0	-5.0	0.0	6.0	-19.4	-14.9	11.4	-20.8	-20.2	4.3
Government	3.9	5.8	1.3	-2.0	1.8	2.7	3.2	3.2	3.2	1.4	2.7	2.9	1.6	2.8
Net exports (\$bn, chained \$2000)	-381	-353	-365	-330	-358	-360	-380	-397	-	-	-	-	-	-
Exports (goods and services)	12.3	3.0	-23.6	-33.0	-20.0	-7.0	0.0	2.0	-1.8	-16.0	5.2	6.2	-17.3	0.3
Imports (goods and services)	-7.3	-3.5	-17.5	-33.0	-10.0	-5.0	5.0	6.0	-7.5	-11.9	5.7	-3.5	-15.5	3.1
Inventories (ch \$bn, chained \$2000)	-50.6	-29.6	-25.8	-77.5	-60.9	-36.7	-32.1	-6.9	-	-	-	-	-	-
<b>Contribution to real GDP growth (% pts):</b>														
Domestic final sales	1.4	-2.3	-6.0	-3.8	-1.5	0.2	1.5	1.7	-1.8	-0.9	2.6	0.0	-2.4	1.7
Net exports	2.9	1.1	-0.2	1.1	-1.0	-0.1	-0.6	-0.6	1.0	-0.2	-0.2	1.4	0.2	-0.4
Inventories	-1.5	0.8	-0.1	-1.8	0.6	0.9	0.2	0.9	-0.2	-0.1	0.7	-0.2	-0.2	0.6
<b>Income and profits (NIPA basis)</b>														
Adjusted corp profits	-14.3	-4.7	-51.4	-30.0	-10.0	4.0	6.0	7.0	-21.5	-8.7	7.7	-10.1	-22.5	5.8
Real disposable personal income	10.7	-8.5	2.7	5.3	4.1	-3.2	-0.7	1.5	0.8	1.3	2.9	1.3	1.6	1.2
Saving rate <sup>1</sup>	2.5	1.3	3.2	4.3	5.2	4.1	3.7	3.6	-	-	-	1.8	4.3	3.9
<b>Prices and labor cost</b>														
Consumer price index	4.5	6.2	-8.3	-2.1	1.2	1.3	1.1	0.9	1.5	0.4	0.7	3.8	-0.7	0.9
Core	2.0	2.8	0.6	1.5	1.2	1.0	0.8	0.6	2.0	1.1	0.3	2.3	1.4	0.6
Core PCE deflator	2.2	2.4	0.9	1.3	1.0	0.8	0.6	0.3	1.9	0.9	0.0	2.2	1.3	0.3
S&P/C-S house price index (%oya)	-15.1	-16.6	-18.2	-16.0	-14.0	-12.0	-10.0	-6.0	-18.2	-10.0	0.0	-15.9	-13.1	-2.5
Productivity	4.7	2.2	-0.4	-2.0	1.0	2.0	2.5	2.0	2.2	0.9	1.9	2.8	0.6	1.9
<b>Other indicators</b>														
Housing starts (mn units, saar) <sup>1</sup>	1.025	0.876	0.660	0.530	0.500	0.475	0.525	0.550	-	-	-	0.903	0.508	0.625
Industrial production, mfg.	-5.4	-9.3	-17.3	-22.0	-8.0	3.0	3.0	4.0	-8.5	-6.6	4.2	-3.1	-11.7	3.0
Capacity utilization, mfg. (%) <sup>1</sup>	76.7	74.6	71.1	67.7	66.4	67.0	67.6	68.3	-	-	-	75.1	67.2	69.1
Light vehicle sales (mn units, saar) <sup>1</sup>	14.1	12.9	10.3	9.5	9.7	10.0	10.4	10.8	-	-	-	13.1	9.9	11.3
Unemployment rate <sup>1</sup>	5.4	6.1	6.9	8.1	8.7	9.2	9.4	9.5	-	-	-	5.8	8.8	9.3
Nominal GDP	4.1	3.4	-5.8	-3.3	-0.7	2.1	1.9	2.8	1.2	0.0	3.7	3.3	-1.0	2.7
Current account balance (\$bn) <sup>1</sup>	-182.2	-181.3	-132.8	-102.8	-89.8	-94.3	-93.6	-95.6	-	-	-	-673.3	-380.5	-395.8
% of GDP	-5.1	-5.0	-3.7	-2.9	-2.6	-2.7	-2.6	-2.7	-	-	-	-4.7	-2.7	-2.7
Federal budget balance (\$bn) <sup>1</sup>	-	-	-	-	-	-	-	-	-	-	-	-454.8	-1500.0	-1200.0
% of GDP	-	-	-	-	-	-	-	-	-	-	-	-3.2	-10.6	-8.3

1. Entries are average level for the period. Federal balance figures are for fiscal years.

	Apr 3	1Q09	2Q09	3Q09	4Q09
<b>Interest rate forecast (end of period)</b>					
Fed funds target	0.13	0.13	0.13	0.13	0.13
3-mo LIBOR	1.16	1.00	1.00	1.00	1.00
2-yr Treasury	0.97	0.85	0.80	0.80	0.75
10-yr Treasury	2.91	2.30	2.20	2.10	2.10

# Global Economic Outlook Summary

	Real GDP			Real GDP							Consumer prices			
	% over a year ago			% over previous period, saar							% over a year ago			
	2008	2009	2010	3Q08	4Q08	1Q09	2Q09	3Q09	4Q09	1Q10	4Q08	2Q09	4Q09	4Q10
<b>The Americas</b>														
United States	1.1	-2.4 ↑	1.9	-0.5	-6.3	-4.5 ↑	-2.0	1.0	1.0	2.0	1.5	-0.9	0.4	0.7
Canada	0.5	-3.0	2.1	0.9	-3.4	-7.5	-4.0	0.0	2.0	3.0	1.9	0.1	1.4	2.2
Latin America	3.8	-2.2	3.0	3.8	-8.7	-6.0 ↑	-0.7	1.6	2.7	3.8	8.3	7.5	6.4	6.0
Argentina	7.0	-3.0	2.0	6.3	-1.2	-10.0	-6.0	0.0	-4.0	6.0	7.8	7.0	6.0	10.2
Brazil	5.1	-1.4	3.0	6.9	-13.6	-4.1	3.8	2.4	4.0	2.5	6.2	5.2	4.3	4.5
Chile	3.2	-1.5	3.2	-3.0	-8.3	-4.0	0.0	0.0	0.0	8.0	8.2	4.0	2.0	3.2
Colombia	2.5	-0.5 ↓	3.0	1.2	-4.1	-1.2 ↑	0.5	1.1 ↑	0.8 ↓	3.5	7.8	5.5	4.8 ↓	4.5
Ecuador	6.9	-1.0	0.5	4.8	-1.0	-3.5	-3.5	-5.0	0.0	1.5	9.3	6.0	5.3	4.0
Mexico	1.3	-4.0	3.4	1.6	-10.3	-8.5	-3.0	2.0	4.1	4.1	6.2	5.6	4.0	3.4
Peru	9.8	3.5	4.7	8.8	0.7	2.4	3.8	3.0	3.2	4.8	6.6	4.0	2.7	2.0
Venezuela	4.8	-0.5	1.5	0.6	3.8	-5.0	-5.0	0.0	1.0	2.0	33.4	37.9	40.8	29.9
<b>Asia/Pacific</b>														
Japan	-0.7	-7.7	0.9	-1.4	-12.1	-15.0	-4.5	-2.0	1.0	1.5	1.0	-0.3	-0.8	-0.2
Australia	2.1	-1.2	1.5	0.3	-2.1	-4.2	-1.0	2.6	0.9	1.2	3.7	1.6	1.7	2.8
New Zealand	0.3	-2.1	1.6	-1.8	-3.6	-3.6	-1.7	0.3	1.6	2.2	3.4	0.4	-0.4	2.7
Asia ex. Japan	5.8	2.8	6.5	3.4	-5.5	-0.3	5.8	7.7	8.4	6.0	4.7	1.0	1.4	2.8
China	9.0	7.2	8.5	6.7	1.5	5.1	10.0	11.7	12.6	7.0	2.5	-1.9	0.3	2.0
Hong Kong	2.5	-3.0	3.5	-2.8	-7.8	-7.0	0.5	3.3	5.3	3.0	2.3	0.8	1.6	1.1
India	6.0	5.2	7.0	6.5	0.0	-1.8	-2.8	3.2	6.0	9.3	10.2	7.5	3.8	4.1
Indonesia	6.1	3.5	5.0	5.4	0.9	3.0	3.0	5.0	5.0	5.0	11.5	5.6	3.5	6.2
Korea	2.2	-3.6	4.2	1.0	-18.8	-7.8	5.0	6.5	5.0	4.0	4.5	2.2	2.5	3.4
Malaysia	4.6	-0.1 ↓	4.7 ↑	0.7	-6.9	-3.9 ↓	6.1 ↓	4.5 ↓	4.5 ↓	4.1	5.9	1.0	-0.2	1.6
Philippines	4.6	3.0	4.0	4.8	4.1	1.5	2.0	2.0	3.0	4.5	9.7	4.7	3.0	3.7
Singapore	1.1	-4.5	4.0	-2.1	-16.4	-9.0	6.6	3.3	3.3	4.1	5.4	0.8	0.4	3.6
Taiwan	0.1	-5.0	4.8	-11.4	-22.5	-5.0	5.7	6.8	6.9	4.0	1.9	-1.1	-0.7	1.5
Thailand	2.6	-3.0	4.0	1.7	-22.2	-5.9	9.1	4.5	4.5	3.2	2.1	-2.9	1.3	2.5
<b>Africa</b>														
South Africa	3.1	-0.7	2.3	0.2	-1.8	-1.5	0.0	1.8	3.0	2.9	9.8	7.3	5.9	4.1
<b>Europe</b>														
Euro area	0.7	-3.6 ↓	0.2	-1.0	-6.3 ↓	-5.0	-4.0	-2.0	0.0	1.0	2.3	0.4	0.8	1.1
Germany	1.0	-4.2	0.2	-2.2	-8.2	-5.0	-4.0	-2.0	0.0	1.0	1.7	0.1	0.3	0.3
France	0.7	-2.8	0.4	0.6	-4.4	-4.5	-3.5	-1.5	0.5	1.0	2.0	-0.1	0.6	0.7
Italy	-1.0	-4.2	0.2	-2.7	-7.5	-5.0	-4.0	-2.0	0.0	1.0	2.9	1.0	1.0	1.0
Norway	2.4	-1.2	0.6	1.2	-0.7	-3.0	-2.5	-1.0	0.0	1.0	3.6	2.4	0.7	1.3
Sweden	-0.5	-4.9	0.4	-3.9	-9.3	-7.0	-3.0	-1.0	0.0	1.0	2.4	-0.7	-0.7	0.9
Switzerland	1.6	-2.4	0.6	-0.3	-1.2	-6.0	-3.0	-0.5	0.5	1.0	1.6	-0.6	0.3	0.3
United Kingdom	0.7	-3.7	0.5	-2.8	-6.1	-6.0	-2.5	-1.0	-0.5	1.0	3.9	0.7	0.2	2.3
Emerging Europe	4.1	-3.1 ↓	1.4	3.8 ↑	-7.1 ↓	-5.9 ↓	-2.8 ↓	-1.8 ↓	-0.8 ↓	1.4 ↓	9.5	7.8 ↑	7.3 ↑	6.3
Bulgaria	6.1	-1.5	2.0	...	...	...	...	...	...	...	...	...	...	...
Czech Republic	3.2	-3.0	0.0	1.4	-3.7	-7.0	-5.0	-3.0	-2.0	0.0	4.7	0.5	1.3	3.0
Hungary	0.5	-5.5 ↓	-0.5	-2.3	-4.6	-7.5 ↓	-6.5 ↓	-5.5 ↓	-4.0	0.0 ↓	4.3	2.9 ↑	4.9 ↑	2.8
Poland	4.8	-1.0	1.8 ↓	3.2	1.2	-4.2 ↓	-3.0 ↓	-2.0	0.0 ↓	2.0	3.8	3.1 ↑	3.1 ↑	2.3 ↑
Romania	7.1	-4.0	-1.0	...	...	...	...	...	...	...	6.8	7.0	9.0	8.0
Russia	5.6	-3.5	1.5	5.8 ↑	-12.8 ↓	-6.5	-1.5	-0.5	0.0	2.0	13.8	12.7	11.2	9.9
Turkey	1.1	-3.4 ↓	2.5 ↑	...	...	...	...	...	...	...	10.9	6.9	6.1	5.0
<b>Global</b>	1.6	-2.8	1.9	0.0 ↑	-6.8 ↓	-5.7 ↑	-1.8	0.6	1.6	2.2	2.9	0.6 ↓	1.1	1.6
Developed markets	0.7	-3.7	1.1	-0.9	-6.9 ↓	-6.5 ↑	-3.1	-0.5	0.6	1.5	1.9	-0.2	0.3 ↓	0.9
Emerging markets	4.9	0.5	4.6	3.4 ↑	-6.4 ↓	-2.5	2.8 ↓	4.7	5.5 ↓	4.7 ↓	6.5	3.9	3.7	4.2

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