

Problem Set 3

Due in Lecture on Wednesday, November 11th. "Box-in" your answers to the algebraic questions.

1. Policy under Floating Exchange Rates in the IS-LM-BP=0 model

Suppose the exchange rate is floating.

- 1.1 Assume the economy described above is under a floating exchange rate regime. Show graphically what happens if the government decreases government spending.
- 1.2 Explain your answer to 1.1.
- 1.3 Now examine a monetary contraction from initial equilibrium, carefully distinguishing between initial impact, and the effect over time.
- 1.4 Explain why monetary policy has a larger effect in this open economy as opposed to that in a closed economy.
- 1.5 Answer 1.1, assuming $\kappa = \infty$.

2. Sticky price monetary model of exchange rates.

- 2.1 Explain what happens if the monetary authority in US increases the money supply by 3 percent. In your answer, indicate the time paths of M , P , M/P , $r-r^*$, s . Use graphs.
- 2.2 Suppose θ equals infinity. Redo 2.1.

3. Purchasing power parity.

Consider absolute purchasing power parity, in logs (i.e., where lowercase letters denote logged values of uppercase letters):

$$s_t = p_t - p_t^*$$

- 3.1 Explain what happens to the exchange rate if the foreign price level rises by 10%.
- 3.2 Suppose only *relative* PPP holds, $s_t = p_t - p_t^* - \kappa$. Answer again 3.1.
- 3.3 If relative PPP holds, what must be true when US inflation is -3% and foreign inflation is 2%?

4. Using real-world data to evaluate PPP and UIP

Consider the two tables drawn from the *Economist*, October 31st edition, on the attached pages. Answer these questions using equations, and show your work.

- 4.1 Using the 3 month interest rates, and assuming UIP holds, calculate the expected change in the dollar/pound exchange rate over the next three months. Be sure to state what the rate will be, in *annualized* terms, and what will be the actual percentage change in the dollar/pound exchange rate. Show your work.
- 4.2 Using 10 year bonds, calculate what the implied change in the dollar/pound exchange rate is, over the next ten years.
- 4.3 Given the empirical evidence on the relationship between exchange rate changes and interest differentials provided in the table in the handout on CIP and UIP, what do you expect to happen to the dollar/pound rate over the next three months, and over the next ten years. Explain.
- 4.4 Given the inflation rates over the past year, what should have been the rate of change in the US dollar/pound exchange rate if relative purchasing power parity held?

Output, prices and jobs

% change on year ago

	Gross domestic product				Industrial production latest	Consumer prices			Unemployment rate, %
	latest	qtr*	2015 ¹	2016 ¹		latest	year ago	2015 ¹	
United States	+2.7 Q2	+3.9	+2.5	+2.6	+0.4 Sep	nil Sep	+1.7	+0.3	5.1 Sep
China	+6.9 Q3	+7.4	+6.8	+6.5	+5.7 Sep	+1.6 Sep	+1.6	+1.6	4.1 Q3 ⁵
Japan	+0.8 Q2	-1.2	+0.7	+1.2	-0.9 Sep	+0.2 Aug	+3.4	+0.7	3.4 Aug
Britain	+2.3 Q3	+2.0	+2.5	+2.3	+1.9 Aug	-0.1 Sep	+1.2	+0.1	5.4 Jul ¹¹
Canada	+1.0 Q2	-0.5	+1.1	+1.9	-1.1 Jul	+1.0 Sep	+2.0	+1.2	7.1 Sep
Euro area	+1.5 Q2	+1.4	+1.5	+1.7	+0.9 Aug	-0.1 Sep	+0.3	+0.1	11.0 Aug
Austria	+0.5 Q2	-2.6	+0.7	+1.5	+1.0 Aug	+0.7 Sep	+1.6	+1.0	5.7 Aug
Belgium	+1.3 Q2	+1.7	+1.3	+1.5	+2.4 Aug	+1.1 Sep	-0.1	+0.5	8.8 Aug
France	+1.1 Q2	nil	+1.1	+1.4	+1.6 Aug	nil Sep	+0.3	+0.2	10.8 Aug
Germany	+1.6 Q2	+1.8	+1.6	+1.8	+2.5 Aug	nil Sep	+0.8	+0.2	6.4 Sep
Greece	+1.7 Q2	+3.7	+0.5	+2.2	+4.5 Aug	-1.7 Sep	-0.8	-1.1	25.0 Jul
Italy	+0.7 Q2	+1.3	+0.7	+1.2	+1.0 Aug	+0.2 Sep	-0.2	+0.2	11.9 Aug
Netherlands	+1.8 Q2	+0.8	+2.0	+1.8	-0.7 Aug	+0.6 Sep	+0.9	+0.4	8.3 Sep
Spain	+3.1 Q2	+4.1	+3.2	+2.6	+5.1 Aug	-0.9 Sep	-0.2	-0.4	22.2 Aug
Czech Republic	+4.6 Q2	+4.4	+3.4	+2.8	+6.3 Aug	+0.4 Sep	+0.7	+0.3	6.1 Sep ⁵
Denmark	+2.0 Q2	+0.6	+1.5	+1.7	+2.4 Aug	+0.5 Sep	+0.5	+0.6	4.5 Aug
Hungary	+2.7 Q2	+2.0	+3.0	+2.8	+6.4 Aug	-0.4 Sep	-0.5	+0.8	6.4 Sep ¹¹
Norway	+2.2 Q2	-0.4	+0.7	+1.5	+5.2 Aug	+2.1 Sep	+2.1	+1.7	4.6 Aug ¹²
Poland	+3.6 Q2	+3.6	+3.4	+3.5	+4.1 Sep	-0.8 Sep	-0.3	nil	9.7 Sep ⁵
Russia	-4.6 Q2	na	-3.8	-0.3	-3.5 Sep	+15.7 Sep	+8.0	+15.2	5.2 Sep ⁵
Sweden	+3.3 Q2	+4.6	+2.9	+2.7	+3.8 Aug	+0.1 Sep	-0.4	+0.1	6.7 Sep ⁵
Switzerland	+1.2 Q2	+1.0	+0.9	+1.3	-2.5 Q2	-1.4 Sep	-0.1	-1.1	3.4 Sep
Turkey	+3.8 Q2	na	+2.9	+3.0	+8.4 Aug	+7.9 Sep	+8.9	+7.5	9.8 Jul ⁵
Australia	+2.0 Q2	+0.7	+2.3	+2.6	+1.2 Q2	+1.5 Q3	+2.3	+1.7	6.2 Sep
Hong Kong	+2.8 Q2	+1.6	+2.4	+2.1	-1.2 Q2	+2.0 Sep	+6.6	+3.1	3.3 Sep ¹²
India	+7.0 Q2	+6.6	+7.4	+7.7	+6.4 Aug	+4.4 Sep	+5.6	+5.1	4.9 2013
Indonesia	+4.7 Q2	na	+4.8	+5.1	+4.4 Aug	+6.8 Sep	+4.5	+6.4	5.8 Q1 ⁵
Malaysia	+4.9 Q2	na	+5.4	+6.1	+3.0 Aug	+2.6 Sep	+2.6	+2.5	3.2 Aug ⁵
Pakistan	+5.5 2015**	na	+5.7	+4.7	+4.8 Aug	+1.3 Sep	+7.7	+3.9	6.0 2014
Singapore	+1.4 Q3	+0.1	+2.9	+3.0	-4.8 Sep	-0.6 Sep	+0.7	+0.2	2.0 Q3
South Korea	+2.7 Q3	+5.0	+2.4	+2.8	+0.3 Aug	+0.6 Sep	+1.1	+0.8	3.2 Sep ⁵
Taiwan	+0.5 Q2	-6.6	+3.2	+2.6	-5.3 Sep	+0.3 Sep	+0.7	+0.1	3.8 Sep
Thailand	+2.8 Q2	+1.5	+3.4	+4.0	-8.3 Aug	-1.1 Sep	+1.8	+0.8	1.0 Aug ⁵
Argentina	+2.3 Q2	+2.0	+0.5	+1.0	+0.2 Sep	— ***	—	—	6.6 Q2 ⁵
Brazil	-2.6 Q2	-7.2	-2.7	-0.9	-8.9 Aug	+9.5 Sep	+6.7	+8.9	7.6 Sep ⁵
Chile	+1.9 Q2	nil	+2.8	+3.7	-5.1 Aug	+4.6 Sep	+4.9	+3.9	6.5 Aug ¹¹
Colombia	+3.0 Q2	+2.4	+3.3	+3.9	+2.6 Aug	+5.4 Sep	+2.9	+4.2	9.1 Aug ⁵
Mexico	+2.2 Q2	+2.0	+2.4	+2.9	+1.0 Aug	+2.5 Sep	+4.2	+2.9	4.2 Sep
Venezuela	-2.3 Q3~	+10.0	-4.5	-5.0	na	+68.5 Dec	+56.2	+84.1	6.6 May ⁵
Egypt	+4.3 Q4	na	+4.2	+4.2	-5.5 Aug	+9.2 Sep	+11.2	+10.0	12.7 Q2 ⁵
Israel	+1.8 Q2	+0.1	+3.3	+3.9	+3.9 Aug	-0.5 Sep	-0.3	-0.2	5.3 Aug
Saudi Arabia	+3.5 2014	na	+2.7	+3.1	na	+2.3 Sep	+2.8	+2.7	5.7 2014
South Africa	+1.2 Q2	-1.3	+1.5	+1.8	+0.6 Aug	+4.6 Sep	+5.9	+4.8	25.5 Q3 ⁵
Estonia	+2.0 Q2	+2.9	+2.3	+3.2	-2.7 Aug	-0.7 Sep	-0.6	+0.9	6.5 Q2 ⁵
Finland	+0.2 Q2	+0.7	+0.4	+1.4	-2.3 Aug	-0.6 Sep	+1.4	+0.4	8.4 Sep ⁵
Iceland	+5.6 Q2	+14.1	+3.2	+2.8	na	+1.9 Sep	+1.8	+2.1	2.4 Sep ⁵
Ireland	+6.7 Q2	+7.7	+3.4	+3.2	+18.5 Aug	-0.3 Sep	+0.3	-0.1	9.4 Sep
Latvia	+2.7 Q2	+6.2	+2.7	+3.5	+6.4 Aug	-0.6 Sep	+1.0	+0.9	9.8 Q2 ⁵
Lithuania	+1.4 Q2	+2.9	+2.3	+3.1	+0.2 Sep	-1.0 Sep	-0.1	-0.1	8.1 Sep ⁵
Luxembourg	+3.0 Q2	-3.5	+2.7	+2.8	+4.9 Aug	+0.5 Sep	+0.3	+0.7	6.5 Sep ⁵
New Zealand	+2.7 Q2	+0.9	+2.8	+2.8	+1.2 Q2	+0.4 Q3	+1.0	+1.0	5.9 Q2
Peru	+3.0 Q2	+2.5	+3.9	+4.8	-2.2 Aug	+3.9 Sep	+2.7	+3.1	6.3 Sep ⁵
Philippines	+5.6 Q2	+7.4	+6.4	+6.3	+3.7 Aug	+0.4 Sep	+4.4	+2.4	6.5 Q3 ⁵
Portugal	+1.6 Q2	+2.2	+1.4	+1.6	+1.8 Aug	+0.9 Sep	-0.4	+0.4	11.9 Q2 ⁵
Slovakia	+3.2 Q2	+3.2	+2.7	+2.8	-0.4 Aug	-0.5 Sep	-0.1	+0.2	11.4 Sep ⁵
Slovenia	+2.6 Q2	na	+2.1	+1.9	+8.1 Aug	-0.7 Sep	-0.3	+0.2	11.8 Aug ⁵
Ukraine	-14.6 Q2	-4.0	-6.4	+1.7	-5.1 Sep	+51.9 Sep	+17.5	+36.1	1.5 Sep ⁵
Vietnam	+6.0 2014	na	+6.3	+6.5	+10.1 Sep	nil Oct	+3.2	+2.5	3.4 2014

Source: Haver Analytics. **% change on previous quarter, annual rate. ¹The Economist poll or Economist Intelligence Unit estimate/forecast. ⁵Not seasonally adjusted. ~2014 **Year ending June. ¹¹Latest 3 months. ¹²3-month moving average. ***Official number not yet proven to be reliable; The State Street PriceStats Inflation Index, August 27.01%; year ago 38.49%

Trade, exchange rates, budget balances and interest rates

	Trade balance		Current-account balance		Currency units, per \$		Budget balance		Interest rates	
	latest 12 months, \$bn		latest 12 months, \$bn	% of GDP 2015 ¹	Oct 28th	year ago	% of GDP 2015 ¹		3-month latest	10-year gov't bonds, latest
United States	-757.8	Aug	-429.0	Q2	-2.5	-	-	-2.6	0.32	2.02
China	+575.9	Sep	+287.8	Q2	+3.1	6.36	6.11	-2.7	3.04	2.84 ³⁵
Japan	-27.5	Aug	+118.8	Aug	+2.8	121	108	-6.8	0.08	0.30
Britain	-198.2	Aug	-149.2	Q2	-4.8	0.65	0.62	-4.4	0.57	1.85
Canada	-15.6	Aug	-48.5	Q2	-3.0	1.31	1.12	-1.8	0.80	1.48
Euro area	+285.5	Aug	+353.4	Aug	+2.8	0.90	0.78	-2.1	-0.07	0.45
Austria	-1.0	Jul	+10.7	Q2	+1.2	0.90	0.78	-2.1	-0.07	0.72
Belgium	+22.7	Aug	-5.8	Jun	+1.9	0.90	0.78	-2.6	-0.07	0.79
France	-51.9	Aug [†]	-0.4	Aug [†]	-0.5	0.90	0.78	-4.1	-0.07	0.80
Germany	+281.9	Aug	+280.7	Aug	+7.7	0.90	0.78	+0.7	-0.07	0.45
Greece	-21.6	Aug	-2.9	Aug	+2.5	0.90	0.78	-4.1	-0.07	7.72
Italy	+52.3	Aug	+38.3	Aug	+2.0	0.90	0.78	-2.9	-0.07	1.41
Netherlands	+61.7	Aug	+85.3	Q2	+10.3	0.90	0.78	-1.8	-0.07	0.61
Spain	-28.1	Aug	+19.6	Jul	+0.5	0.90	0.78	-4.4	-0.07	1.59
Czech Republic	+18.0	Aug	+2.4	Q2	-0.1	24.5	21.8	-1.8	0.29	0.53
Denmark	+10.2	Aug	+23.2	Aug	+5.4	6.74	5.84	-2.9	-0.10	0.79
Hungary	+8.7	Aug	+4.7	Q2	+4.6	282	242	-2.6	1.35	3.25
Norway	+34.3	Sep	+37.8	Q2	+9.3	8.45	6.61	+5.9	1.10	1.63
Poland	+0.6	Aug	-1.9	Aug	-1.4	3.88	3.31	-1.5	1.53	2.58
Russia	+161.0	Aug	+64.3	Q3	+4.9	63.7	42.5	-2.8	12.5	9.97
Sweden	+2.4	Sep	+35.1	Q2	+6.6	8.42	7.33	-1.2	-0.32	0.64
Switzerland	+36.8	Sep	+60.9	Q2	+7.8	0.99	0.95	+0.2	-0.73	-0.32
Turkey	-72.1	Sep	-43.0	Aug	-4.9	2.89	2.21	-1.6	11.8	9.90
Australia	-4.8	Aug	-47.4	Q2	-3.7	1.41	1.13	-2.4	2.26	2.58
Hong Kong	-63.9	Sep	+7.4	Q2	+2.8	7.75	7.76	nil	0.38	1.46
India	-132.1	Sep	-25.9	Q2	-1.1	65.0	61.3	-3.8	7.11	7.59
Indonesia	+6.6	Sep	-21.6	Q2	-2.5	13,478	12,170	-2.0	8.30	9.34
Malaysia	+23.6	Aug	+8.8	Q2	+2.5	4.27	3.27	-4.0	3.76	4.09
Pakistan	-21.3	Sep	-2.6	Q2	-0.7	105	103	-5.1	6.51	8.75 ^{11†}
Singapore	+52.8	Sep	+69.5	Q2	+21.2	1.39	1.27	-0.7	na	2.35
South Korea	+84.5	Sep	+104.8	Aug	+6.7	1,131	1,050	+0.3	1.55	2.04
Taiwan	+16.2	Sep	+72.8	Q2	+12.8	32.4	30.4	-1.0	0.87	1.18
Thailand	+9.3	Sep	+24.4	Q2	+2.4	35.5	32.5	-2.0	1.53	2.59
Argentina	+2.6	Sep	-8.3	Q2	-1.7	9.50	8.50	-3.6	24.4	na
Brazil	+6.9	Sep	-79.3	Sep	-4.2	3.86	2.47	-6.0	14.4	15.8
Chile	+7.1	Sep	-0.3	Q2	-1.2	686	579	-2.2	0.42	4.46
Colombia	-17.1	Aug	-20.8	Q2	-6.7	2,918	2,054	-2.1	5.08	7.77
Mexico	-11.4	Sep	-25.3	Q2	-2.3	16.4	13.5	-3.4	3.30	5.85
Venezuela	-36.2	Oct~	+10.3	Q3~	-1.8	6.31	6.35	-16.5	15.2	10.5
Egypt	-42.1	Aug	-12.2	Q2	-1.4	8.03	7.15	-11.0	11.6	na
Israel	-9.6	Sep	+10.2	Q2	+4.9	3.87	3.74	-2.8	0.10	1.93
Saudi Arabia	+168.3	2014	-1.5	Q2	-2.7	3.75	3.75	-12.7	0.98	na
South Africa	-5.1	Aug	-15.6	Q2	-4.7	13.6	10.9	-3.8	6.31	8.31
Estonia	-1.8	Aug	+0.6	Aug	-0.5	0.90	0.78	-0.1	-0.07	na
Finland	+0.2	Aug	+1.1	Aug	-0.6	0.90	0.78	-2.4	-0.07	0.72
Iceland	+0.1	Sep	+0.8	Q2	+2.0	na	na	+0.2	6.40	na
Ireland	+47.5	Aug	+12.0	Q2	+6.6	0.90	0.78	-2.5	-0.07	1.05
Latvia	-2.8	Aug	-0.5	Aug	-2.7	0.90	0.78	-1.2	-0.07	na
Lithuania	-2.7	Aug	nil	Q2	-1.7	0.90	0.78	-1.7	-0.07	1.50
Luxembourg	-7.4	Aug	+3.0	Q2	+4.0	0.90	0.78	-0.3	-0.07	na
New Zealand	-2.2	Sep	-6.8	Q2	-4.7	1.49	1.26	nil	2.94	3.28
Peru	-2.4	Aug	-7.1	Q2	-4.6	3.28	2.92	-0.5	1.60	na
Philippines	-5.7	Aug	+11.7	Jun	+4.1	46.8	44.8	-1.9	1.97	3.67
Portugal	-12.2	Aug	+1.9	Aug	+0.8	0.90	0.78	-3.1	-0.07	2.38
Slovakia	+4.7	Aug	-1.2	Aug	-0.2	0.90	0.78	-2.6	-0.07	0.85
Slovenia	nil	Jul	+3.4	Aug	+4.1	0.90	0.78	-3.3	-0.07	na
Ukraine	-0.8	Aug	-2.8	Q2	-2.2	na	na	-3.3	22.0	na
Vietnam	-4.8	Oct	+9.1	2014	+2.7	na	na	-4.2	4.70	7.05

Source: Haver Analytics. ¹The Economist poll or Economist Intelligence Unit estimate/forecast. ⁴New series. ~2014 ³⁵5-year yield.

^{11†}Dollar-denominated bonds.

4.5 The next table is from the *Economist*, October 10th edition, which reports the results of a poll. Interpret expected inflation rate for 2016 as the expected change from December 2015 to December 2016. What is the expected change in the US dollar/pound over that period if relative PPP holds?

The Economist poll of forecasters, October averages (previous month's, if changed)

	Real GDP, % change				Consumer prices % change		Current account % of GDP	
	Low/high range		average		2015	2016	2015	2016
	2015	2016	2015	2016				
Argentina	-1.5/2.3	-1.0/2.7	0.5 (nil)	1.0 (1.1)	— (—)	— (—)	-1.7 (-1.4)	-1.7 (-1.5)
Australia	1.9/2.5	2.0/3.0	2.3 (2.4)	2.6 (2.7)	1.7	2.5	-3.7 (-3.2)	-3.4 (-3.0)
Austria	0.5/0.8	1.1/1.9	0.7	1.5	1.0	1.7 (1.6)	1.2 (1.4)	1.5 (1.4)
Belgium	1.1/1.6	1.2/1.8	1.3	1.5 (1.6)	0.5 (0.4)	1.5	1.9 (1.7)	1.9
Brazil	-3.2/-2.4	-2.0/0.2	-2.7 (-1.9)	-0.9 (0.2)	8.9 (8.6)	6.4 (6.1)	-4.2 (-4.1)	-3.4 (-3.8)
Britain	2.3/2.7	1.7/3.0	2.5	2.3 (2.4)	0.1 (0.2)	1.4 (1.5)	-4.8	-4.1 (-4.0)
Canada	0.9/1.6	1.2/2.3	1.1 (1.4)	1.9 (2.0)	1.2 (1.1)	1.9 (2.0)	-3.0 (-2.9)	-2.5 (-2.4)
China	6.6/7.1	6.0/7.2	6.8 (6.9)	6.5 (6.7)	1.6 (1.5)	2.0	3.1 (3.0)	3.0 (2.7)
Denmark	nil/1.8	nil/2.2	1.5 (1.8)	1.7 (1.9)	0.6 (0.7)	1.3 (1.6)	5.4 (6.8)	5.5 (6.8)
France	0.9/1.2	0.9/1.8	1.1	1.4 (1.5)	0.2	1.0 (1.1)	-0.5 (-0.7)	-0.4 (-0.6)
Germany	1.5/1.8	1.4/2.7	1.6 (1.7)	1.8 (2.0)	0.2 (0.4)	1.4 (1.6)	7.7 (7.6)	7.3 (7.2)
India	6.2/7.8	5.9/8.4	7.4 (7.5)	7.7 (7.8)	5.1 (5.3)	5.3 (5.5)	-1.1 (-1.2)	-1.2 (-1.5)
Indonesia	4.4/5.7	4.0/5.7	4.8	5.1 (5.2)	6.4	5.1	-2.5 (-2.4)	-2.7 (-2.8)
Italy	0.5/0.9	0.9/1.6	0.7 (0.6)	1.2	0.2	1.0	2.0	1.9 (2.0)
Japan	0.4/1.0	0.6/1.7	0.7 (0.8)	1.2 (1.5)	0.7	0.9 (1.0)	2.8 (2.7)	2.8 (2.6)
Mexico	2.2/2.8	2.4/3.5	2.4 (2.5)	2.9 (3.2)	2.9	3.5	-2.3 (-2.5)	-2.3 (-2.4)
Netherlands	1.8/2.2	1.4/2.5	2.0 (1.8)	1.8 (1.7)	0.4	1.3 (1.2)	10.3 (9.2)	10.1 (9.1)
Russia	-4.7/-3.3	-2.0/1.0	-3.8 (-3.6)	-0.3 (0.3)	15.2 (14.8)	7.3 (6.7)	4.9	4.8 (4.4)
South Africa	1.3/1.9	0.9/2.4	1.5 (1.8)	1.8 (2.3)	4.8	5.9 (6.0)	-4.7 (-5.1)	-5.0 (-4.7)
South Korea	1.9/2.8	1.6/3.3	2.4 (2.6)	2.8 (3.1)	0.8 (0.9)	1.6 (1.8)	6.7 (7.8)	6.3 (7.0)
Spain	3.0/3.3	2.0/3.2	3.2 (3.0)	2.6	-0.4 (-0.3)	0.8 (1.0)	0.5 (0.8)	0.4 (0.9)
Sweden	2.4/3.3	2.0/3.5	2.9 (2.7)	2.7	0.1	1.1 (1.3)	6.6 (6.5)	6.1 (6.5)
Switzerland	0.7/1.1	1.0/1.8	0.9 (0.7)	1.3	-1.1 (-1.0)	-0.1	7.8 (7.2)	6.6 (7.0)
Turkey	2.2/3.5	2.0/4.0	2.9 (2.8)	3.0 (3.2)	7.5 (7.3)	7.1 (6.8)	-4.9 (-4.7)	-5.1 (-4.2)
United States	2.2/2.6	1.9/3.1	2.5 (2.4)	2.6	0.3 (0.4)	1.8 (2.0)	-2.5 (-2.6)	-2.5 (-2.6)
Euro area	1.2/1.6	1.3/2.1	1.5 (1.4)	1.7	0.1 (0.2)	1.1 (1.2)	2.8 (2.6)	2.6 (2.4)

Sources: Bank of America, Barclays, BNP Paribas, Citigroup, Commerzbank, Credit Suisse, Decision Economics, Deutsche Bank, EIU, Goldman Sachs, HSBC Securities, ING, Itaú BBA, JPMorgan, Morgan Stanley, Nomura, RBS, Royal Bank of Canada, Schroders, Scotia Capital, Société Générale, Standard Chartered, UBS

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Source: *Economist*, October 10, 2015