20 September 2013 │ 20 pages

Western Europe

Euro Economics Weekly

Housing Not Yet Turning Around

- Recent data suggest that house prices are rising again in Ireland, still rising in Germany and perhaps falling less fast than before in Spain, while euro area housing investment grew in Q2 for the first time since Q1 2011. These data have fed some optimism that the housing cycle is about to turn in the euro area (EA) and play its part in the EA recovery. We think that such hopes are probably premature.
- A varying mix of supply overhang, poor demographics, still-low housing affordability, poor credit availability and general economic conditions are impeding a recovery in house prices and activity in Cyprus, Greece, Italy, the Netherlands, Portugal, Slovenia, and Spain. These are also mostly the countries where a recovery in housing would have the largest effects, but housing will probably only recover once general economic conditions have improved.
- Meanwhile, the boost from countries where housing markets are strong, notably Germany, is likely to be modest. Ireland's housing market has stabilized at a low level, while the Netherlands may have the highest chances of a UK-style rebound at some future point. Policy support could speed up the housing recovery, but remains unlikely, and there are risks of long-term housing slumps in some EA countries.

Ebrahim Rahbari
+44-20-7986-6522
ebrahim.rahbari@citi.com

Guillaume Menuet
+44-20-7986-1314
guillaume.menuet@citi.com

Giada Giani
+44-20-7986-3281
giada.giani@citi.com

Michael Saunders
+44-20-7986-3299
michael.saunders@citi.com

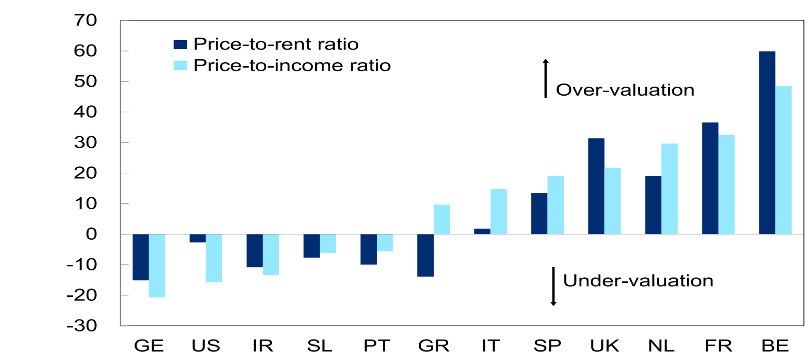
Ann O'Kelly
+44-20-7986-3297
ann.okelly@citi.com

Figure 1. Citi Market Forecasts

	$/€	Euro Repo	10-yr Bunds	£/€	U.K. Bank Rate	10-yr Gilt-Bund	SKr/€	SEK Policy Rate	NOK/€	NOK Policy Rate	SFr/€	CHF Policy Rate	CHF Spread vs Bunds
4Q 13	1.33	0.50	1.70	0.87	0.50	102	8.88	1.00	7.96	1.50	1.25	0.00	-75
2Q 14	1.30	0.50	1.80	0.88	0.50	107	8.83	1.00	7.86	1.50	1.25	0.00	-77

Source: Citi Research

Figure 2. Selected Countries – Measures of House Price Overvaluation, 2012



Sources: OECD and Citi research

For all distribution enquiries regarding Citi Economics research, including access via Citi websites and via third party distribution channels, please contact michael.saunders@citi.com or jan.maguire@citi.com

Click to play
Ebrahim Rahbari

Housing Not Yet Turning Around

There have been some positive housing-related data in the euro area recently

But we think hopes for a rebound are premature

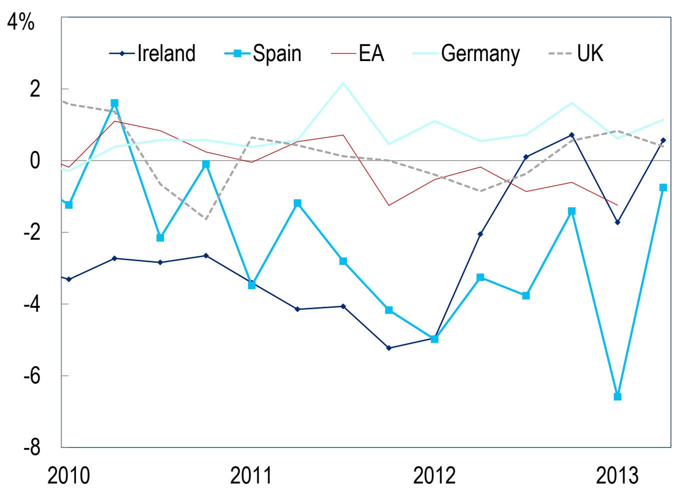
In the countries that are facing a housing slump, a varying mix of supply overhang, poor demographics, still-low housing affordability, and poor general economic prospects are impeding a recovery

Housing will likely rebound once economic conditions have improved

Some recent housing-related data has been quite positive: house price are increasing again in Ireland and continuing to increase in Germany, prices (on one measure) fell less fast than before in Spain, and housing investment in the euro area grew in Q2 for the first time since Q1 2011. These data and the example of the important role of housing in the recent growth pickup in the UK have fed some optimism that the housing market is about to turn in the euro area (EA) and support its recovery.[1]

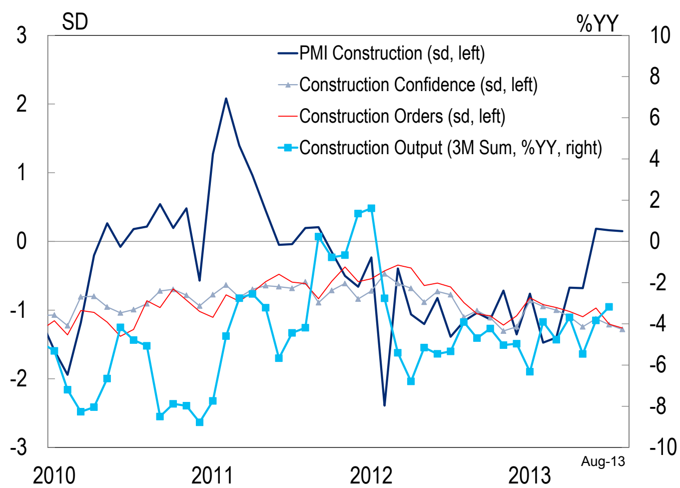
We think that such hopes are premature. Big differences exist between EA housing markets, but a varying mix of still-limited housing affordability, supply overhang, poor access to finance, weak demographics, and poor general economic prospects are impeding a recovery in house prices and activity in the weaker countries. Meanwhile, the boost from countries where housing markets are strong, notably Germany, is likely to be relatively modest. Absent decisive policy action to support housing markets, housing is likely to lag the recovery in the EA.

Figure 3. Selected Countries – House Prices (%QQ), 2010-2013



Note: House prices for all dwellings in nominal local currency.
Sources: ECB, National Sources, VDP and Citi Research

Figure 4. Euro Area – Short-term Construction Indicators, 2010-2013



Sources: Markit, Eurostat, European Commission and Citi Research

Is the euro area housing cycle bottoming?

Recent housing data in the EA are less positive on closer inspection

Housing can be a powerful driver of economic activity, through effects of rising house prices on animal spirits (as home-owners may feel richer, yet tenants not equally poorer), by improving financial intermediation (increasing the availability and value of collateral and improving the health of bank and household balance sheets), and of course directly (through construction activity and associated outlays).[2]

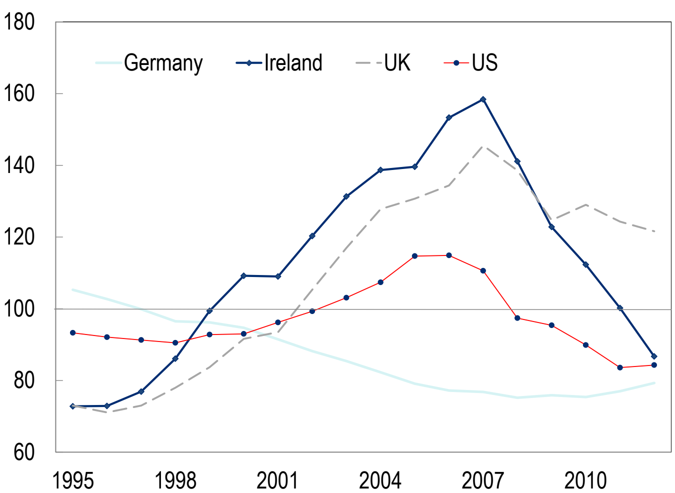
But recent EA housing data are less positive on closer inspection than at first glance. Positive Q2 growth in EA real housing investment relied heavily on Germany, which itself experienced a sharp rebound after a weather-related cumulative decrease of 3% over the previous two quarters. Ex-Germany, EA housing investment fell by 0.3%QQ, even though that was still the smallest rate of decline since Q1 2011. Aside from Germany, housing investment in Q2 only rose in

[1] Consistency across different house price indicators is problematic, both between countries and for different house price measures within a country. Where data from a common source were not available, we rely on the house price measures chosen for international comparisons in the relevant literature, e.g. "Recent House Price Developments: The Role of Fundamentals", Nathalie Girouard et al, OECD Economics Working Paper No. 475, 23 January 2006

[2] See also "Housing Wealth Isn't Wealth", Willem Buiter, Economics, August 5, 2010, and "Housing is the Business Cycle", Edward Leamer, NBER Working Paper 13428, September 2007

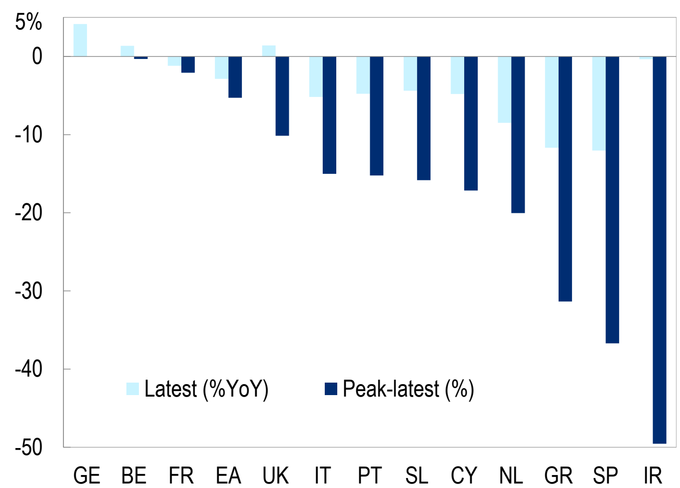
Austria, Estonia, Finland, Portugal and Slovenia – and in the latter two, the increase in Q2 followed exceptionally large falls in Q1 (by 10%QQ and 8%QQ non-annualised, respectively).[3] Including Germany, EA housing investment was down 2.3%YY in Q2. That the Q2 data overstate the momentum in EA housing investment is also confirmed by high-frequency construction indicators (see Figure 4). EA construction output (which includes housing and other construction) in July was still down by 3%YY. And after sizable increases in April and June, the EA construction PMI has trod water in July and August at a sub-50 reading (even though it is slightly above its long-term average). EA construction confidence (from the August EC survey) has failed to rebound at all from recent lows, as the orders component in particular remains very low, and demand is the main limiting factor for building activity according to the survey.[4]

Figure 5. Selected Countries – House Price to Disposable Income Ratio (Long-Term Average = 100), 1995-2012



Note: Ratio of house price to household gross disposable income.
Sources: OECD and Citi Research

Figure 6. Selected Countries – Nominal House Prices (%)



Note: House prices for all dwellings for all countries except Belgium and Slovenia (existing dwellings). For Greece and Italy it corresponds to urban areas.
Sources: ECB, BIS, National Sources and Citi Research

What about house prices? In Spain, the Spanish National Statistics Office (INE) general housing price index indeed fell at the lowest rate in Q2 (-0.8%QQ) since Q4 2010, but this was probably partly in response to an unusually large quarterly fall of 6.6%QQ in Q1 (after abolishing tax deductions for mortgage interest payments at end-2012). Other Spanish house price indices suggest that prices still fell by about 5-10% annualised in Q2. For the EA as a whole, data for Q2 are not yet available, but in Q1 house prices were still falling at an annualised rate of 4%, according to the ECB. A weighted average of the available country data suggests that house prices were roughly flat in Q2, still leaving them around 2% lower than a year ago.[5]

Housing affordability played a major role in ending recent housing slumps in Germany, Ireland, and the US

But the variation between individual EA countries is large. In our view, continued weakness in house prices and activity in countries that are experiencing housing slumps should not be too surprising. Two factors played a major role in ending recent housing slumps in the US, Ireland or Germany, in our view. First, house price

[3] Data for Q2 real housing investment are not yet available for Ireland and Greece.

[4] A net balance of 44% or survey respondents cited demand as a limiting building activity, followed by financial constraints (10.2%), weather conditions (9.8%), shortage of labour (5.0%), shortage of material/equipment (0.8%). 11.5% cited 'other' constraints, while 38% face no constraints. For construction orders, a net balance of 42% saw a negative development in the volume of order books, almost two standard deviations below the long-term average.

[5] A GDP-weighted average of house prices in Austria, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, and Spain was up by 0.6%QQ in nominal terms in Q2.

affordability appears to be key (see Figure 5). In all three countries, the ratio of house prices to gross or net household disposable income fell to below long-term average levels (and so did house price/rent ratios) before house prices bottomed out. In addition, the housing sector (both prices and activity) generally bottomed out *after* the economic recovery began.[6]

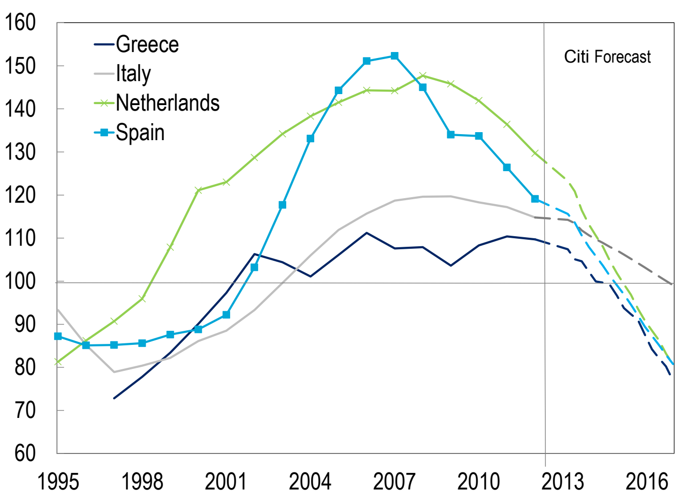
In the UK, the lack of supply overhang coupled with government support for housing meant that affordability was not a prerequisite for a housing recovery

A recent counterexample is the UK where housing affordability remains low (and housing appears to be a major factor driving the recent recovery.[7] In our view, the case of the UK is special for two reasons: the supply-demand balance for housing has been relatively favourable (there was no major construction boom even as house prices soared, and the population is increasing rapidly), and UK government efforts to support the housing sector are probably quite powerful.[8]

In most weaker EA housing markets, neither the supply-demand balance nor government policy are likely to be as supportive for the housing market. On the latter, it is in fact mostly the opposite: fiscal pressures imply that taxes on property have increased in a number of EA countries, while subsidies have fallen.[9] Further improvements in housing affordability are therefore probably needed in most EA countries with housing slumps, (notably Greece, Italy, Spain and the Netherlands) for a rebound in prices and a sustained recovery in housing activity.

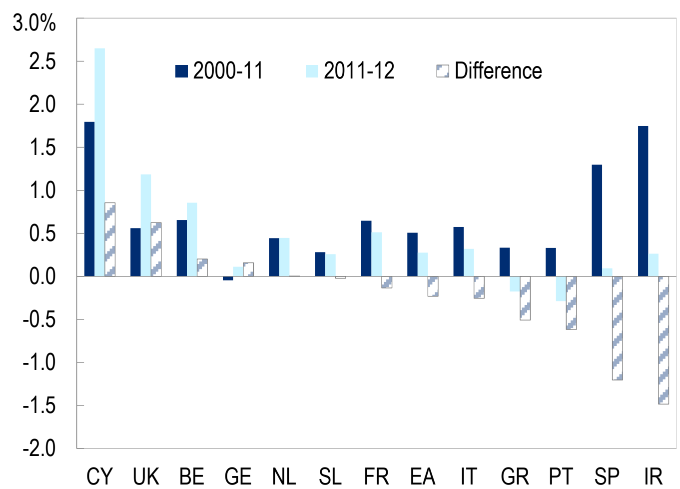
Housing Gloom in the EA Periphery continues

Figure 7. Selected Countries – House Price to Disposable Income Ratio (Long-Term Average = 100), 1995-2016F



Sources: OECD and Citi Research

Figure 8. Selected Countries – Population Growth (%pa)



Sources: Eurostat and Citi Research

[6] In the US, real GDP troughed in Q2 2009, housing investment in Q4 2009 and real house prices in Q2 2011. In Ireland, real GDP troughed in Q4 2009, real house prices in Q1 2013 and real housing investment was still falling in Q1 2013 (latest data).

[7] See UK Economics Weekly - Housing is Recovering, Not Bubbling, Michael Saunders, Citi Research, 6 September 2013

[8] These are in particular the 'Funding for Lending' (FLS) and the 'Help to Buy' (HTB) schemes. For details on these, see http://www.bankofengland.co.uk/markets/Pages/FLS/default.aspx and https://www.gov.uk/government/policies/helping-people-to-buy-a-home/supporting-pages/help-for-first-time-buyers.

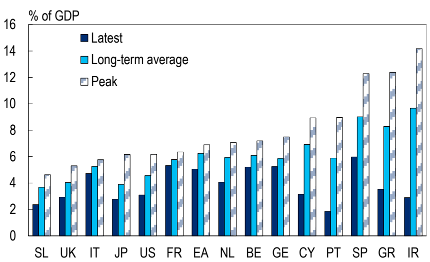
[9] Examples include the IMU tax in Italy, new property taxes in Greece and the removal of tax deductability on mortgage payments in Spain.

House prices are still falling quite sharply in Cyprus, Greece, Italy, the Netherlands, Portugal and Slovenia

In addition to Spain, house prices are still falling quite sharply in Cyprus (-4.8%YY in Q1), Greece (-11.7%YY in Q2), Italy (-5.2%YY in Q2), the Netherlands (-8.5%YY in Q2), Portugal (-4.8%YY in Q2) and Slovenia (-4.3%YY in Q1). From the peak, the declines range from 15% (Italy and Portugal) to 50% (Ireland) in nominal terms, and from 22% (Slovenia and Portugal) to 52% (Ireland) in real (CPI-deflated) terms.

In all of these countries, the trend in housing investment remains substantially negative and construction confidence and orders remain below their long-term averages, usually substantially so. But there are also major differences.

Figure 9. Selected Countries – Real Housing Investment (% of GDP), 1995-2013



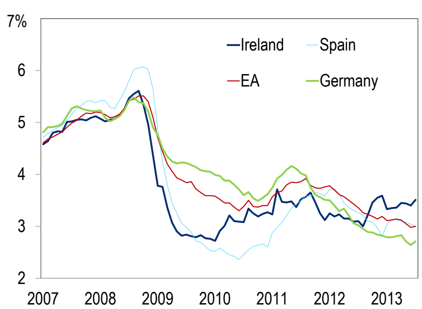
Note: For Greece, data start in 2000.
Source: Eurostat and Citi Research

First, affordability indicators vary quite widely. In Portugal, and Slovenia, house prices in 2012 were more than 5% below their long-term averages relative to income according to the OECD (and almost 10% relative to rents, see Figure 2 on the Front Page). In the Netherlands (house price-income ratio 23% above its long-term average according to our calculations), Spain (16%), Italy (14%) and Greece (7%) affordability remains low.

Affordability and supply overhangs weigh on these countries' housing markets

As we noted above, affordability is likely to be key. The good news is that despite weak income trends, affordability is generally improving, at annualised rates of 1% (Italy) to 8% (NL) in Q1. Assuming that nominal house prices continue to fall at the same YY% rate as in Q1 and that household disposable income grows at the same rate as nominal GDP for these countries, house prices would be back in line with their long-term averages relative to income between Q1 2014 (Greece) and Q4 2016 (Italy, see Figure 7).[10] Of course, house prices often overshoot on the way down, too, so there is no guarantee that house prices will stabilize once house price-income ratios are back in line with their long-term average. Such an overshoot is particularly plausible where large prior construction booms and falling populations create a supply overhang.

Figure 10. Selected Countries – Interest Rates on New Mortgages (%), 2007-2013



Note: Interest rates on all maturities.
Sources: ECB and Citi Research

Second, financial conditions also vary. Lending surveys indicate that bank mortgage lending *standards* have stopped tightening and mortgage rates have fallen, but the degree of past tightening had been large and bank assessments of mortgage demand remains weak. Mortgage lending (12M sum of lending flows divided by the outstanding stock) is contracting in all of these countries except the Netherlands (where lending growth has slowed sharply, but remains positive), with the largest YY% falls as of July in Cyprus (-5.8%), Greece (-3.9%), Portugal (-3.7%), and Spain (-4.3%).

Third, the size of the correction in housing boom and of the preceding boom also varies widely. The housing construction boom was probably largest in Spain, where in 2006 more housing units were under construction than in Germany, France, Italy and the UK combined, but booms were still substantial in Cyprus, Greece and Portugal, but less so in the Netherlands or in Slovenia.[11] Subsequent corrections have been sharpest in Portugal (where real housing investment has fallen 71% from the peak), Cyprus (67%) and Slovenia (55%, and leaving the housing investment/GDP ratio at a mere 2.4%).[12]

[10] It is important to point out that improvements in housing affordability have as much to do with house price developments as with income trends. In countries that undergo large fiscal tightening, one might suspect that household disposable income would generally fall short of nominal GDP growth, ceteris paribus. This suggests a slight positive bias to our simulation.

[11] However, in the Mediterranean countries housing investment is structurally slightly higher than in other EU countries, due to higher demand for holiday/second homes, including by foreigners.

[12] In Spain, the fall in housing investment has also been large (-53%), but still left housing investment in Q2 at 6% of GDP, which is above the EA average.

Finally, demographics. In Italy, Greece, Portugal, and Spain, population growth has slowed sharply in recent years (see Figure 8). In Greece and Portugal, the population is now shrinking, and it might soon do so in Spain. Timely and reliable migration statistics are not available, but there is by now plenty of anecdotal evidence that outward migration is at least part of the story.[13] Meanwhile, in the Netherlands, population growth remains reasonably strong.

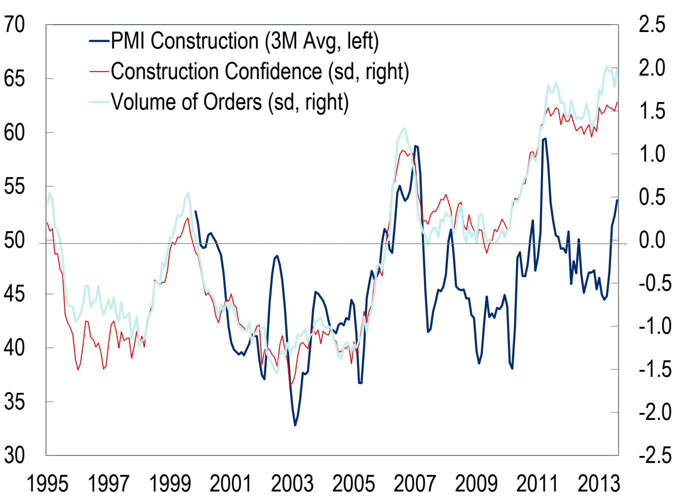
The above factors suggest to us that in all of these countries the prospects for a near-term turn-around in housing are quite dim. In Spain and the Netherlands in particular, affordability is still stretched. In Cyprus, Spain, Greece, Italy, and Portugal, housing prospects suffer from supply overhangs (driven to varying degrees by building booms and emigration), while in all weak general economic conditions put some downward pressure on housing activity and prices, too.

House prices are rising again in Ireland since Q1 2013 and housing activity has stabilized at a low base

Until recently, Ireland would also have featured prominently in the above discussion. However, strong corrections in housing investment (down 80% from the peak) and prices, as well as some prospects of a return to modest growth in the economy, have provided the basis for the housing sector to bottom, despite relatively higher mortgage rates than in other EU countries. Some signs of a housing pickup are indeed evident: nation-wide house prices bottomed in March (in Dublin, the trough was in February 2012 and prices are up by 8% since then), mortgage lending was up 5.7%YY in July and housing completions have stabilized (even though at roughly 10% of peak levels). Continued high net migration outflows are likely to cap the prospects for sustained growth in house prices and construction in Ireland, but further rises from a low base in prices and activity seems likely in coming quarters.

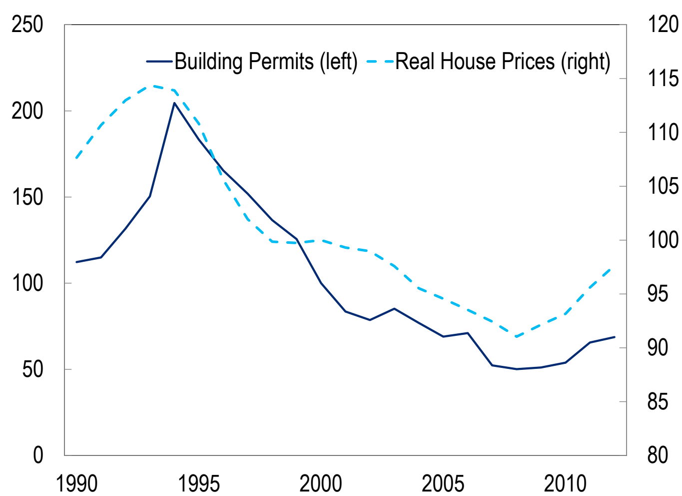
The not-quite German (and Austrian) Housing Boom

Figure 11. Germany – Housing indicators, 1995-2013



Sources: ECB, National Sources and Citi Research

Figure 12. Germany – Real House Prices and Building Permits (2000=100), 1990-2013



Sources: Bundesbank, Statistisches Bundesamt and Citi Research

House prices are rising modestly and leading indicators suggest further increases in building in coming quarters

Housing indicators in Germany are generally pointing towards further increases in prices and activity in coming quarters. As noted above, an unusually cold winter subdued housing activity and distorted housing trends in Q4 2012-Q1 2013. The large (3.2%QQ) increase in Q2 removed some of the pent-up demand, lifting the YY rate in construction output into positive territory in July and the construction PMI substantially above 50 since May. Leading indicators remain positive: building

[13] Strong population growth in Cyprus is probably due to the fact that economic weakness is recent.

permits (12M sum) are continuing to grow by around 10%YY and construction firms' confidence and order assessments are at multi-decade highs (see Figure 11).

Housing trends have further to run in Germany:

Housing affordability remains good

Financial conditions are loose

The population is growing (due to net inward migration)

House building remains below long-term averages

The situation is broadly similar in Austria

These trends probably still have further to run, in our view. According to the VdP residential property index, nominal house prices in Germany were up by 4.1%YY in Q2 13 and have risen by 11% since 2010. However, they in real terms are still roughly 10% below 2000 levels and housing affordability remains quite good, with house price/disposable income ratios still below long-term averages (even though house prices have been rising faster than income recently). Financial conditions remain very supportive, with rates for new mortgages close to all-time lows and loose (by fairly conservative German standards) mortgage lending standards. Growth in mortgage lending is picking up even though it remains at the leisurely rate of 2.5%YY in July.

Most measures of housing activity also remain below long-term averages, including housing investment (relative to GDP), building permits (Figure 12) and completions. What is more, Germany's population is growing, if ever so slightly, since the end of 2010, with growth in the number of households slightly outpacing population growth. Net immigration accounts for all of Germany's population growth currently.[14] Ongoing economic weakness in other EA labour markets means that net inward migration will probably continue for some time, but persistent low birthrates probably mean that the population will start declining in the not-too-distant future and cap the scope for a housing boom in coming years.

The situation in Austria is broadly similar. House prices have gone up more strongly (by 5%YY in Q2 and by 23% since end-2009), but only to bring the ratio of house prices to rents or incomes into line with their long-term averages. Leading indicators remain above their respective long-term averages and population growth remains positive, suggesting that the housing cycle there has still not reached its peak.

Belgium and France: no housing bust or not yet?

In Belgium and France, affordability of housing is poor, yet prices have not fallen much

In our view, this due to the lack of a major building boom and continued population growth, even though some house price falls are likely

In Belgium and France, house price-income ratios are more than 40% and 30% above their long-term averages, respectively, yet house prices have not fallen much (2% from peak in nominal terms in France in Q2, 8% in real terms, 0.3% nominal/ 2% real in Belgium in Q4 2012). The question is why? In our view, one reason is that the housing supply-demand balance in these countries has been more favourable than in other European countries: population growth continues at a relatively solid pace, while the construction boom in the '00s was modest in both countries by EA standards.

However, the overvaluation of Belgian and French housing markets indicated by price-income and price-rent ratios suggests that we should expect house prices to fall further, which should also cap the prospects for growth in housing activity.

Why housing won't drive the EA recovery and risks

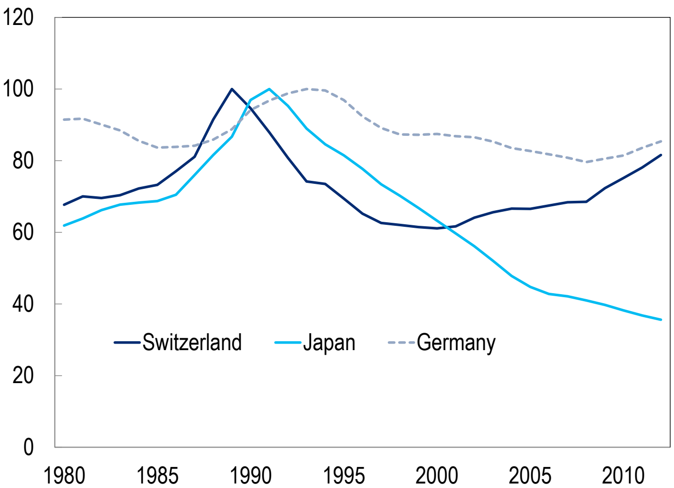
In countries, where housing markets are strong, their impact is relatively limited

There are two reasons why housing is unlikely to play a major role in the EA recovery, at least in the earlier stages. The first follows directly from our discussion above – a turnaround is not imminent. But there is a second reason: In Germany and Austria, where the prospects of continued growth in house prices and construction are good, their impact will probably be relatively limited. This is

[14] The German Statistics Office noted that, as in previous years, the number of deaths exceeded the number of births in Germany in 2012. See https://www.destatis.de/DE/Publikationen/Thematisch/Bevoelkerung/Bevoelkerungsstand/VorlBevoelkerungsfortschreibung.html

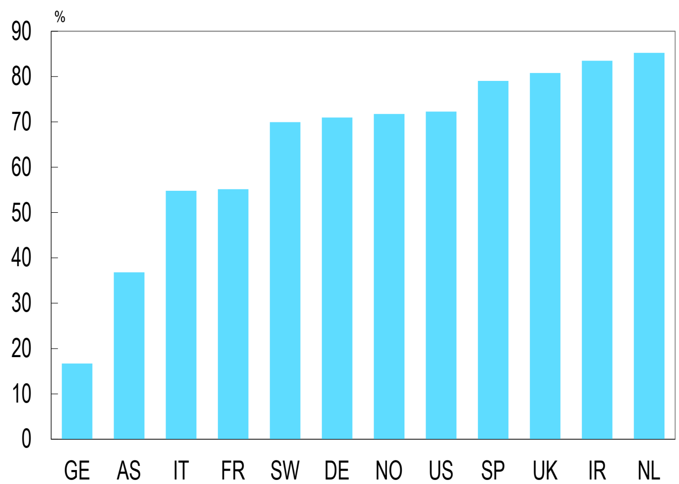
because housing remains a relatively modest part of the overall economy in both countries and household leverage (which tends to amplify the effects of house prices on economic activity, in particularly on household consumption, see Figure 14) is comparatively low. By contrast, in the countries where a housing recovery would be very powerful, notably Spain and the Netherlands, housing prospects remain poor. In Spain, in particular, a recovery in housing would be most opportune: not only would housing boost animal spirits and eventually household consumption (the usual channel), but a recovery in house prices would do much to repair bank balance sheets (thus also stimulating renewed lending) and, crucially, a recovery in activity could absorb some of the sizable pool of unemployed former construction workers which currently run the risk of entrenching a structurally very high unemployment rate in Spain.

Figure 13. Selected Countries – Real House Prices (peak=100), 1980-2012



Note: House prices for all dwellings except for Switzerland (single-family homes) deflated by CPI.
Sources: National Sources and Citi Research

Figure 14. Selected Countries – Correlation Between YoY Change in Real House Prices and Real Consumer Spending, 1998-2012



Sources: Datastream and Citi Research

Upside risks include a bigger building boom in Germany or more decisive public support for housing markets

Housing markets are volatile and there are both upside and downside risks to our scenario. A proper housing boom may yet develop in Germany. While it may bring its own risks (e.g. an even more hawkish Bundesbank and risks of overheating), it could also eventually provide jobs for some construction workers in the EA periphery. Another upside risk – but still unlikely – is that national governments and/or the ECB will yet provide meaningful stimulus for housing markets, even though such stimulus is probably most effective once house prices have already started to stabilize.

The Netherlands is the country that has the highest chances of eventually experiencing a UK-style rebound in housing, as it also did not face a building boom and the population continues to grow

When it comes to countries that could potentially be in a similar position to the UK, the main candidate in our view is the Netherlands, as it also had only a modest construction boom, healthy demographics and high household leverage. Given the size of the correction in the housing market, Ireland may also be a candidate, if net migration was to come to an end to chip away at the remaining supply overhang.

A downside risk is that housing slumps can be self-reinforcing, particularly in countries where the demographics are poor

But there are also downside risks. Housing slumps can be long-lasting and partially self-reinforcing, as the example of Germany, Japan or Switzerland show (see Figure 13). This risk is particularly relevant, in our view, when demographic prospects are weak, as they currently are in much of the EA periphery.

Key Economic Indicators (23 September – 20 September 2013)

During The Week		**Forecast**	**Last**
07:00	UK: Nationwide House Prices, Sep		
Monday 23 September		**Forecast**	**Last**
09:00	Italy: Contractual Wages, Aug		
09:00	Euro Area: Manufacturing PMI, Sep Flash	51.8	51.3
	Services PMI, Sep Flash	51.3	50.7
	Composite PMI, Sep Flash	52.1	51.5
Tuesday 24 September		**Forecast**	**Last**
08:30	Netherlands: GDP Details, 2Q Final		
08:30	Netherlands: Producer Confidence, Sep		
09:00	Germany: ifo Business Climate, Sep	109.1	107.5
09:30	UKP: BBA Mortgage Advances, Aug		
14:00	Belgium: Business Confidence, Sep		
	Spain: Budget Balance, Aug	€-46.8 Billion	€-45.2 Billion
Wednesday 25 September		**Forecast**	**Last**
07:00	Germany: GfK Consumer Confidence, Oct		
07:45	France: Business Confidence, Sep	99	98
	Own-Company Production Outlook, Sep	5	2
08:00	Spain: Producer Prices, Aug		
08:15	Sweden: Manufacturing Confidence, Sep	100.3	100.1
08:15	Sweden: Consumer Confidence, Sep	101.1	99.3
09:00	Italy: Consumer Confidence, Sep	99.0	98.3
09:00	Norway: LFS Unemployment Rate, Jul	3.3%	3.3%
11:00	UK: CBI Retail Survey, Sep		
17:00	France: Jobseekers – Net Change, Aug	10.0K	6.3K
	Jobseekers, Aug	3,295.7K	3,285.7K
Thursday 26 September		**Forecast**	**Last**
07:00	Germany: GfK Consumer Confidence, Oct		
07:45	France: Consumer Confidence, Sep	86	84
08:30	Sweden: Producer Prices, Aug		
08:30	Sweden: Trade Balance, Aug		
08:30	Sweden: Household Lending, Aug	4.8% YY	4.8% YY
09:00	Italy: Retail Sales, Jul		
09:00	Euro Area: M3, Aug	2.1% YY, 2.2% 3-M YY	2.2% YY, 2.2% 3-M YY
09:30	UK: Balance of Payments, 2Q	£-10.8 Billion, 2.7% of GDP	£-14.5 Billion, 3.6% of GDP
09:30	UK: GDP Details, 2Q (3rd Release)	0.7% QQ, 1.5% YY	
11:00	Ireland: Residential Property Prices, Aug		
Friday 27 September		**Forecast**	**Last**
07:45	France: GDP Details, 2Q Final	0.5% QQ, 0.3% YY	-0.2% QQ, -0.5% YY
07:45	France: Consumer Spending, Jul	0.5% MM, -0.3% YY	-0.8% MM, -0.5% YY
	Consumer Spending, Aug	-0.4% MM, 0.0% YY	NA
08:00	Switzerland: KOF Economic Barometer, Sep		
08:00	Spain: Consumer Prices, Sep Flash		
08:00	Spain: Retail Sales, Aug	-9.1% YY	-3.7% YY
08:30	Sweden: Retail Sales, Aug	0.4% MM	-0.7% MM
09:00	Norway: Registered Unemployment Rate, Sep	2.6%	2.8%
09:00	Italy: Business Confidence, Sep	93.8	92.9
09:30	UK: Service Sector Output, Jul		
10:00	Euro Area: Economic Sentiment, Sep	97.1	95.2
11:00	Ireland: Retail Sales, Aug		
13:00	Germany: HICP, Sep Flash	0.3% MM, 1.7% YY	0.0% MM, 1.5% YY
	National CPI, Sep Flash	0.1% MM, 1.7% YY	0.0% MM, 1.6% YY
During The Weekend		**Forecast**	**Last**
	Austria: General Election, Sep 29		

Sources: National statistical offices, central banks and Citi Research

Economic Indicators

Euro Area			
Sep 23 09:00 London Time	***Manufacturing PMI, Sep Flash*** ***Services PMI, Sep Flash*** ***Composite PMI, Sep Flash***	**Forecast: 51.8** **Forecast: 51.3** **Forecast: 52.1**	**Prior: 51.3** **Prior: 50.7** **Prior: 51.5**
	Both manufacturing and services PMIs are likely to tick higher again in September, posting the fifth and sixth consecutive monthly gains, respectively. The monthly increase, however, is likely to be smaller than in previous months, at around 0.5 points for both indices in comparison with monthly gains of about 1 point in previous months. The positive momentum in these survey-based activity indicators is likely still intact. A composite PMI reading at around 52 would set the highest level since mid-2011. Historically this level has been consistent with around 0.3% QQ growth rates.		
Sep 26 09:00 London Time	***M3, Aug***	**Forecast: 2.1% YY, 2.2% 3-M YY**	**Prior: 2.2% YY, 2.2% 3-M YY**
	The weakening trend in the annual growth rate of M3 likely continued in August. The most important piece of information to look at in the report will be the dynamic in loans to the private economy. In the last few months, the pace of contraction in the flow of new loans to the non-financial private sector has accelerated, dropping to -1.9% YY in July from -1.6% YY in June and -0.6% YY in Dec-12. We expect this trend to have continued in August. Loans to businesses are mainly driving the overall decline in loan flows, but households' new loans have also turned slightly negative in the past couple of months.		
Sep 27	***Economic Sentiment, Sep***	**Forecast: 97.1**	**Prior: 95.2**
	Economic sentiment likely posted another fairly strong gain in September, bringing the index closer to (albeit still slightly below) its long-run average, suggesting 2H GDP growth is likely to come in slightly positive territory. Both industrial and consumer confidence indices likely edged higher.		
Germany			
Sep 24 08:55 London Time	***Ifo Business Climate, Sep***	**Forecast: 109.1**	**Prior: 107.5**
	German sentiment readings continue to be positive, including a stronger-than-expected ZEW business survey earlier this month. We therefore expect the ifo business climate to register another increase which would be the fifth consecutive monthly increase and thus shake off some of the more mixed recent data.		
Sep 27 13:00 London Time	***HICP, Sep Flash*** ***National CPI, Sep Flash***	**Forecast: 0.3% MM, 1.7% YY** **Forecast: 0.1% MM, 1.7% YY**	**Prior: 0.0% MM, 1.5% YY** **Prior: 0.0% MM, 1.6% YY**
	We expect German inflation, according to both the national and the harmonised measures, to be positive in September and raise the yearly inflation rate slightly again after the larger-than-expected fall in August. Core inflation is still increasing moderately and food prices continue to rise fast, even though their rate of increase has started to moderate slightly.		
France			
Sep 25 07:45 London Time	***Business Confidence Indicator, Sep*** ***Own-Company Production Outlook, Sep***	**Forecast: 99** **Forecast: 5**	**Prior: 98** **Prior: 2**
	Industrialists are likely to feel a little more confident in September, when we expect a one-point gain (and fifth successive gain) in the business confidence reading to 99, a level essentially consistent with the long-term average of 100. A modest gain to a two-year high is also likely in the own-company production outlook measure, in our view. We would argue that a significant part of the gap between confidence measures and the underlying rate of economic activity since the election of President Hollande has been related to uncertainty about his stance about corporate taxation.		
Sep 25 17:00 London Time	***Jobseekers – Net Change, Aug (000s)*** ***Jobseekers, Aug (000s)***	**Forecast: 10.0K** **Forecast: 3,295.7K**	**Prior: 6.3K** **Prior: 3,285.7K**
	We look for a modest increase in unemployment in August, when we estimate that the total number of registered jobless likely increased by 10K, or half the typical increase for August in the past three years. French labour market statistics underestimate the extent of the deterioration in unemployment compared to ILO calculation. Monthly surveys of business and household confidence point to very little change in the underlying perception of labour market trends. Employment data for the second quarter showed that almost 35K jobs had been lost.		
Sep 26 07:45 London Time	***Consumer Confidence, Sep***	**Forecast: 86**	**84**
	French households are feeling less pessimistic, but their overall confidence level remains very low by historical standards. We expect confidence to increase again in September, albeit by a smaller margin than the 3-point gains recorded in the July and August. While inflation rates are on a downward trajectory, and better news on the labour market front and a positive 2Q GDP reading should help, fiscal pressure on households is still increasing, constraining their ability to purchase big-ticket items.		
Sep 27 07:45 London Time	***GDP Details, 2Q Final***	**Forecast: 0.5% QQ, 0.3% YY**	**Prior: -0.2% QQ, -0.5% YY**
	We expect the final 2Q GDP estimate to be confirmed at 0.5% QQ, with a slight bias towards a downward revision to 0.4%. The positive contribution of domestic demand to GDP is expected to extend throughout the second half of 2013, but we doubt that the re-stocking contribution to GDP growth can continue without a more sizeable improvement in business confidence. Overall, the modest reform agenda being pursued by the government with respect to labour market flexibility, competitiveness policies and pension reforms is beginning to help stabilise expectations.		
Sep 27 07:45 London Time	***Consumer Spending, Jul*** ***Consumer Spending, Aug***	**Forecast: 0.5% MM, -0.3% YY** **Forecast: -0.4% MM, 0.0% YY**	**Prior: -0.8% MM, -0.5% YY** **Prior: NA**
	Retail confidence surveys for July and August suggest that the business outlook has improved markedly, gaining a combined 18 points since June. The retail PMI also increased in both July (+1.1pt) and August (+0.6pt), making it a 5-month winning streak. Together with a rebound in consumer confidence, these positive survey signals suggest that consumer spending will likely have risen slightly compared to June. Our July and August forecasts imply flat consumer spending performance in the third quarter to date. The omens are more positive for September.		

Economic Indicators

Italy			
Sep 25 09:00 London Time	***Consumer Confidence, Sep***	**Forecast: 99.0**	**Prior: 98.3**
	Aside from the one-off gain in consumer sentiment in June due to methodological changes in the computation of the series, in underlying terms sentiment has been improving over the past few months, mainly driven in our view by reduced fiscal austerity (two major tax payments in the summer were delayed) and falling inflation. We expect this trend to continue in September. Note that the current level of the index is still probably consistent with a slightly negative growth rate in private consumption.		
Sep 27 09:00 London Time	***Business Confidence, Sep***	**Forecast: 93.8**	**Prior: 92.9**
	Business sentiment probably continued to improve in September, posting the fifth consecutive monthly gain and catching up with the gains recorded by the manufacturing PMI. Yet, the level remains some 0.7 standard deviations below long-run average suggesting still close-to-zero GDP growth in 3Q.		
Spain			
Sep 24	***Budget Balance, Aug YTD***	**Forecast: €-46.8 Billion**	**Prior: €-45.2 Billion**
	The central government budget deficit in the first seven months of 2013 has only marginally improved relative to the same period of 2012, suggesting a slowdown in the pace of deficit reduction seen in 2012. We think the same pattern prevailed in August, with a monthly deficit of some €1.5bn, which would bring the YTD level to €46.8bn, down from €49.9bn in Jan-Aug 2012. Although it remains very difficult to extrapolate the general government year-end deficit projection from these numbers, we think they may suggest a small overshoot of the deficit target (of 6.5% of GDP).		
Sep 27 08:00 London Time	***Retail Sales, Aug***	**Forecast: -9.2% YY**	**Prior: -3.7% YY**
	A largely negative base effect is likely to push the annual growth rate in retail sales much lower in August, as the surge in consumption in August 2012 (before the VAT hike) exits the annual comparison. The base effect will turn the opposite sign in September, when the annual rate is likely to bounce back into positive territory. However, aside from the changes in the annual rate, the monthly dynamic has somewhat slowed in May-June (-0.6% MM, -0.1% MM, respectively). We expect a small rebound in August, which would help to raise the quarterly average and foster expectations for a mild pick-up in private consumption in 3Q.		
Sweden			
Sep 25 08:15 London Time	***Manufacturing Confidence, Sep***	**Forecast: 100.3**	**Prior: 100.1**
	Following four consecutive months with above-50 readings for PMI, we expect NIER manufacturing to stay around its long-term average in September (NIER sentiment tends to lag PMI slightly). Although the indicator is at growth level, it does not signal a strong recovery. Overall, we expect the manufacturing sector to gradually recover throughout the year, but it will be a bumpy road and some setbacks should be expected at times.		
Sep 25 08:15 London Time	***Consumer Confidence, Sep***	**Forecast: 101.1**	**Prior: 99.3**
	Consumer sentiment improved further in August, and is now basically in line with its long-term average (0.7 points below). House prices have recovered in recent quarters and some house price indicators suggest slight upward pressure in the housing market also ahead. At the same time, the equity market has improved through September and is now around the highs from October 2007. At the same time, car sales were up 6.9% YY in August, the strongest gain since May 2011, and the labour market continues to develop slightly more strongly than expected (both unemployment and employment, though, are still rising). On balance, this points to another gain in consumer confidence in September. Inflation expectations are low and are expected to stay low given very low current levels of inflation (1.4% YY in August).		
Sep 26 08:30 London Time	***Household Lending, Aug***	**Forecast: 4.8% YY**	**Prior: 4.8% YY**
	Lending to households ticked slightly higher in July to 4.8% YY – 0.1pp above the July pace, and is now above the growth pace of a year ago (4.5% YY). The largest part of households' loans consists of housing loans (63%), which in July had an annual growth rate of 5.1% (4.7% YY a year ago and down from 10.5% YY in early 2010). Given the rebound in the housing market (house prices have increased slightly over the past seven months), we see a clear risk that household lending could pick up further in the second half of the year. Given the Riksbank majority board's focus on financial stability considerations, this clearly speaks in favour of stable rates ahead.		
Sep 27 08:30 London Time	***Retail Sales, Aug***	**Forecast: 0.4% MM**	**Prior: -0.7% MM**
	Retail sales corrected lower in July following two very strong months. Otherwise, retail sales have been off to a strong start this year with average activity up 1.6% QQ in 1Q and 0.7% QQ in 2Q. The overall gain has been driven by durable goods sales and food consumption. Current levels of consumer and retail confidence support an upward trend in private consumption this year, and fiscal policy measures are expected to support spending going into 2014.		
Norway			
Sep 25 09:00 London Time	***LFS Unemployment Rate, Jul***	**Forecast: 3.3%**	**Prior: 3.3%**
	Employment growth has stalled according to the Labour Force Survey, which in April-June was almost unchanged from the second quarter of 2012. The LFS unemployment rate rose sharply from a low of 3.0% in spring 2012 to 3.7% on average in 1Q. However, it eased to 3.4% for 2Q, in part reflecting a slightly lower participation rate. We expect unemployment to be relatively unchanged going forward.		
Sep 27 9:00 London Time	***Registered Unemployment Rate, Sep***	**Forecast: 2.6%**	**Prior: 2.8%**
	The labour market in Norway remains relatively firm. In line with the seasonal pattern, we expect the registered jobless rate to fall 0.2pp to 2.6% in September.		

Economic Indicators

United Kingdom			
Sep 26 09:30 London Time	***Balance of Payments, 2Q*** Figures already have been released showing that the deficit on goods and services trade fell to £4.0bn in 2Q from £6.1bn in 1Q, and we expect this to be reflected in a decline in the overall current account deficit to the lowest since 4Q-2011. This release often includes substantial revisions to prior data, but on the existing figures the current account deficit has remained quite high in recent quarters.	**Forecast: £-10.8 Billion, 2.7% of GDP**	**Prior: £-14.5 Billion, 3.6% of GDP**
Sep 26 09:30 London Time	***GDP, 2Q (3rd Release)*** This release will, as every quarter, include revisions over the past couple of years, but we have no basis on which to anticipate the possible size of direction of such revisions. Assuming revisions are limited, the split is likely to show little change in the savings rate, with the growth of real personal disposable incomes roughly matching the 0.4% QQ rise in real consumer spending.	**Provisional: 0.7% QQ, 1.5% YY**	**Prior: 0.3% QQ, 0.3% YY**
Sep 27 09:30 London Time	***Service Sector Output, Jul*** The past couple of months have seen overall services output growth capped by a correction in the subsection representing transport, storage and communication after the very strong April reading. We suspect this effect has run its course, and hence anticipate a stronger MM gain in services output – a figure in line with our forecasts would represent the highest MM gain since February and leave output 0.5% above the 2Q average.	**Forecast: 0.4% MM, 1.9% YY**	**Prior: 0.2% MM, 2.8% YY**

Sources: National Statistical Offices, National Central Banks, Bloomberg, and Citi Research forecasts.

Key Economic Indicators (30 September – 4 October 2013)

		Forecast	Last
During The Week		**Forecast**	**Last**
08:00	UK: Halifax House Prices, Sep		
Monday 30 September		**Forecast**	**Last**
00:01	UK: GfK Consumer Confidence, Sep		
07:00	Germany: Retail Sales, Aug	1.2% MM, 0.9% YY	-0.5% MM, -0.1% YY
07:45	France Producer Prices, Aug		
09:00	Italy: Producer Prices, Aug		
10:00	Italy: HICP Flash, Sep		
09:00	Denmark: GDP, 2Q Final		
09:00	Norway: Credit Indicator C2, Aug		
09:00	Norway: Retail Sales, Aug		
09:30	UK: Personal Borrowing, Aug		
10:00	Portugal: GDP Details, 2Q Final		
10:00	Euro Area: HICP Flash, Sep		
	Spain: Current Account, Jul		
	Greece: Retail Sales, Jul		
Tuesday 1 October		**Forecast**	**Last**
07:00	Sweden: PES Unemployment Rate, Sep		
07:30	Sweden: PMI, Sep		
08:00	Norway: PMI, Sep		
08:55	Germany: Unemployment, Sep		
09:00	Italy: Unemployment, Aug		
09:00	Euro Area: Manufacturing PMI, Sep Final		
09:30	UK: Manufacturing PMI, Sep		
10:00	Euro Area: Unemployment Rate, Aug		
	Italy: Budget Balance, Sep		
Wednesday 2 October		**Forecast**	**Last**
08:00	Spain: Unemployment, Sep		
09:30	UK: Government Debt and Deficit, Sep 2013		
10:00	Euro Area: Industrial Producer Prices, Aug		
12:45	Euro Area: ECB Meeting, Paris. Outcome at 12:45 – Press Conference at 13:30		
Thursday 3 October		**Forecast**	**Last**
09:00	Euro Area: Services PMI, Sep Final		
	Composite PMI, Sep Final		
09:30	UK: Services PMI, Sep		
10:00	Euro Area: Retail Sales, Aug		
Friday 4 October		**Forecast**	**Last**
07:00	Germany: Producer Prices, Aug		
08:30	Sweden: Services Production, Aug		

Sources: National statistical offices, central banks and Citi Research

Title	Author	Date
Euro Area – Sovereign Debt Crisis Update		
Germany – Final Days for Campaigning	European Economics Team	Sep 20, 2013
S&P Puts Portugal on Negative Credit Watch	European Economics Team	Sep 19, 2013
Italy: Risk of Political Crisis Recedes Ahead of Senate Vote	European Economics Team	Sep 18, 2013
Portugal May Seek A Precautionary Credit Line	European Economics Team	Sep 17, 2013
Crucial Week for Italian Government Once Again	European Economics Team	Sep 16, 2013
Euro Area		
German elections - Four More Years – A Multi-Asset View	Ebrahim Rahbari et al	Sep 12, 2013
Euro Area - ECB Reiterates Forward Guidance, with Some Dovish Hints	Giada Giani	Sep 5, 2013
European Economic Forecast Highlights - August 2013	Ann O'Kelly	Aug 22, 2013
Germany - Is the Current Coalition Heading For Four More Years?	Ebrahim Rahbari	Aug 19, 2013
Euro Economics Weekly		
Loan Dynamics: Renaissance by Year-End	Guillaume Menuet	Sep 13, 2013
Germany — Four More Years	Ebrahim Rahbari	Sep 6, 2013
Greece — More Drama, Fewer Systemic Risks	Giada Giani	Aug 30, 2013
Enhanced Forward Guidance, ECB-Style	Guillaume Menuet	Aug 23, 2013
Euro Area Recovery? Not Strong Enough	Giada Giani	Aug 16, 2013
What do the US Pickup and China Slowdown Mean for Euro Area Growth?	Ebrahim Rahbari	Aug 9, 2013
Low(er) ECB Rates: For How Long?	Guillaume Menuet	Jul 26, 2013
German Exports — Down But Not Out	Ebrahim Rahbari	Jul 19, 2013
On Italy's Fiscal Woes and Euro Area's Dismal Labour Market	Giada Giani	Jul 12, 2013
France a Year On: How Much Progress?	Guillaume Menuet	Jul 5, 2013
Small steps towards banking union: the ECB should be pleased	Guillaume Menuet	Jun 28, 2013
Slovenia: ESM Assistance for Bank Recap Would Make Sense	Guillaume Menuet	Jun 21, 2013
Spain's External Rebalancing	Giada Giani	Jun 14, 2013
Financial Conditions Neutral, At Best, on Growth	Giada Giani	Jun 7, 2013
Chief Economist Publications		
Global Economic Outlook and Strategy - August 2013	Willem Buiter	Aug 21, 2013
Ireland		
Ireland - Back in Recession	Michael Saunders	Jun 28, 2013
Scandi		
Scandi Economics Update	Tina Mortensen	Sep 20, 2013
Norway - Stable Rates, Easing Bias Removed And Earlier Rate Hike	Tina Mortensen	Sep 19, 2013
Sweden - Minutes: Riksbank Awaits Additional Macro-Prudential Measures	Tina Mortensen	Sep 18, 2013
Switzerland - Economy Continues to Grow Solidly	Michael Saunders	Sep 3, 2013
Switzerland - Deflation Ending, But Policy Will Stay Loose	Michael Saunders	Aug 12, 2013
UK		
UK - Retail Sales Fall Back, Trend Remains Solid	Michael Saunders	Sep 19, 2013
UK - MPC Minutes – No Rate Protest	Michael Saunders	Sep 18, 2013
UK - CPI Inflation Edges Down, RPI-CPI Wedge Rising	Michael Saunders	Sep 17, 2013
UK - UK Data and Household Rate Expectations	Michael Saunders	Sep 6, 2013
UK - No Change from the BoE	Michael Saunders	Sep 5, 2013
UK Economics Weekly		
Scenarios for the Jobless Rate	Michael Saunders	Sep 13, 2013
Housing is Recovering, Not Bubbling	Michael Saunders	Sep 6, 2013
Assessing Vulnerabilities to the EM Slowdown	Michael Saunders	Aug 30, 2013
Is Guidance Failing?	Michael Saunders	Aug 23, 2013
The Upturn and Unemployment	Michael Saunders	Aug 16, 2013
Four More Years!	Michael Saunders	Aug 9, 2013

Source: Citi Research

Notes

Notes

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Research product ("the Product"), please contact Citi Research, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Ltd	Ebrahim Rahbari; Guillaume Menuet; Giada Giani; Michael Saunders; Ann O'Kelly

OTHER DISCLOSURES

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Research does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of Citi Research to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citi Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is

made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros. Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **France** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A, Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02. The Product is made available in Korea by Citibank Korea Inc., which is regulated by the Financial Services Commission and the Financial Supervisory Service. Address is Citibank Building, 39 Da-dong, Jung-gu, Seoul 100-180, Korea. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ('FAA') through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank

Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold//Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in **Spain** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gasset, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different Citi Research ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority.

Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to Citi Research's Products can be found at https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product.

With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs) and other product that is made available through other distribution channels only to certain categories of clients to satisfy legal or regulatory requirements, Citi Research concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual Citi Research analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. Citi Research simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by Citi Research analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

Citi Research product may source data from dataCentral. dataCentral is a Citi Research proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.