

Unconventional monetary policy, the wealth effect and inequality: Lessons from Italian households

24 March 2016

- The deployment of quantitative easing (QE) measures by the major central banks marked the beginning of a new phase for monetary policy. Given that such measures were unprecedented, there is an ongoing debate on how the transmission channels of QE function and how they affect the real economy.
- One important transmission channel of QE is via the *wealth effect* on consumption. QE is intended to boost asset prices and thereby support households' wealth and ultimately encourage higher consumer spending. We explore the 'functioning' of this transmission channel using a large panel of surveys on Italian households' wealth and income. We find that the *wealth effect* on consumption is statistically significant. Our estimates suggest that the marginal propensity to consume (MPC) out of an additional unit of housing wealth is about 1%-2%, while it is somewhat lower for financial wealth.
- Our results also suggest that the MPC declines as wealth increases. And by nature households that do not have asset holdings will fail to benefit (at least directly) from asset price rises. As a consequence, the skewness of the *ex-ante* distribution of wealth across households significantly affects the pass-through of QE stimulus to the real economy. A very unequal distribution of wealth can potentially hamper the transmission of QE to consumption.
- The introduction of unconventional measures has also given rise to concerns about the *distributional consequences* of monetary policy. This is because the asset price inflation generated by central banks' purchases has the potential to favour wealthy households, increasing inequality within a country.
- We consider whether the ECB's large-scale purchase programme (and its effect on asset prices) can exacerbate net worth inequality among households, given the *ex-ante* skewness in the distribution of wealth. Exploring the historical and cross-sectional distribution of income and wealth in Italy, we conclude that, while the direct effect of QE on wealth may foster inequality within a country, the jury is still out on the overall *distributional consequences* of the ECB's non-standard

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measures, given the variety and complexity of its transmission channels. In the end, an improved macroeconomic outlook will benefit all sections of society and may even serve to lower inequality, as these second-round effects kick in.

- Finally, while the paucity of data means we were only able to focus on Italy, and therefore cannot draw general (or even Euro area-wide) conclusions, our results suggest that the effectiveness of the *wealth effect* transmission channel of QE policies will be weaker in the Euro area than in the US.

The deployment of quantitative easing programmes (QE) by the major central banks marked the beginning of a new phase for monetary policy. After a prolonged period of low growth and low inflation in the Euro area, the ECB launched its Public Sector Purchase Programme (PSPP) in March 2015 in an attempt to stimulate the economy and re-anchor inflation expectations in line with its price stability objective. QE has been an important addition to the armoury of central banks. But, given the unprecedented character of this unconventional monetary policy tool, the debate on the functioning of its transmission channels and its effects on the real economy is ongoing.

One important transmission channel of QE to the real economy works via the *wealth effect* on consumption. QE is intended to boost asset prices (Exhibit 1) and thereby should support households' wealth and ultimately encourage higher consumer spending. Using a large panel survey on Italian households' wealth and income, we explore how this *wealth effect* influences the transmission of QE to consumption. We focus on Italy given the availability of a comprehensive dataset on Italian households: the Bank of Italy's *Survey on Household Income and Wealth* (SHIW), which includes detailed information on large samples of Italian households from 1989 to 2014.¹ Given the focus on Italian households, our results may be country-specific and therefore may not reflect the situation in the Euro area as a whole, still less in other jurisdictions. But, given the importance of this transmission channel and the paucity of household-level data, we see this exercise as helpful in developing a broader view.

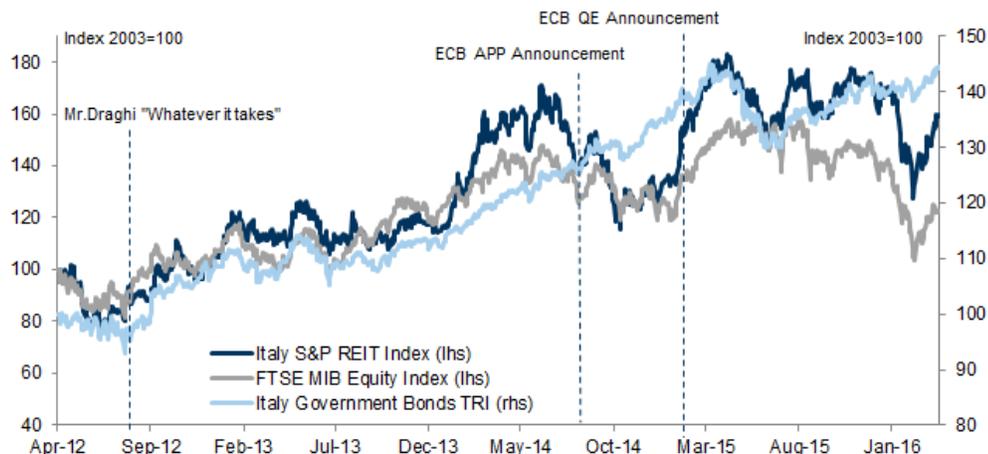
Aside from the impact of QE on asset prices and the economy, large-scale purchases of sovereign and other assets also entail a number of risks. In a previous *European Economics Analyst* we argued that, in a setting with a single monetary policy and many fiscal policies, the risk transfers (across countries) embodied in sovereign QE could be very large. But, as ECB President Mario Draghi recently said, another "*concern which has accompanied the introduction of unconventional measures is the distributional consequences of monetary policy. In particular [...] that the rise in asset prices as a consequence of our purchases might benefit the wealthy disproportionately and thereby increase inequality*". In exploring the wealth effect and its role in the transmission of QE to the broader economy, we also provide some insight into the distributional impact (within a country) of such policies across households by income and wealth.²

¹ The Bank of Italy's SHIW began in 1960 but since 1989 it has been constructed as a panel.

² All monetary policies (and inflation itself) have distributional consequences. See Doepke, Schneider and Selezneva (2015) for a discussion on this topic. However, as Mr. Draghi also acknowledged: "It is important to make clear that there are also distributional effects from monetary policy inaction – from the

Exhibit 1: While asset prices rose in the first half of 2015, they have been volatile of late

The exhibit includes the S&P Italian Real Estate Total Return Index, the FTSE MIB equity index and the Italian government bonds Total Return Index



Source: Datastream, Goldman Sachs Global Investment Research

The evolution of income and wealth in Italy

According to the SHIW (Exhibit 2), Italian households' average nominal disposable income increased from EUR16k per year in 1989 to about EUR30k in 2014. This means that, in real terms, the purchasing power of Italian households is currently below the level observed 25 years ago. However, aggregate data from the national accounts are consistent with more positive developments in households' income and consumption over the past decades.

The saving ratio of Italian households – which averages 24%³ over the sample 1990-2014 – has varied significantly during the recent crises. Exhibit 2 suggests that the contraction in households' consumption in 2014 was driven by a sharp increase in the saving rate, while households' disposable income was broadly unchanged from 2012.

The composition of Italian households' balance sheets shows that housing wealth has by far the biggest weight, accounting for 80% of total wealth, while financial wealth (e.g., deposits, equity and bonds) amounts to 'only' 10% (Exhibit 3).⁴ A large fraction (close to 70%) of the households surveyed in 2014 declared ownership of at least one house.

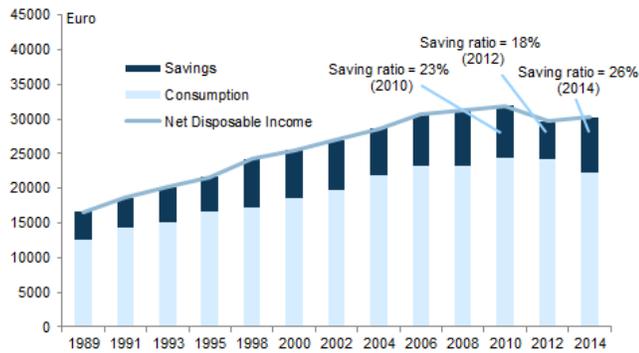
central bank not meeting its mandate or, in other words, from realised inflation persistently deviating from the central bank's objective."

³ The saving ratio reported in the SHIW is significantly higher than that reported by the national accounts: 8.7% in 2014.

⁴ We define 'Wealth' as the sum of households' total assets, while 'Net Worth' means households' wealth minus liabilities (total debt).

Exhibit 2: Contraction in household consumption after the crisis was amplified by an increase in savings

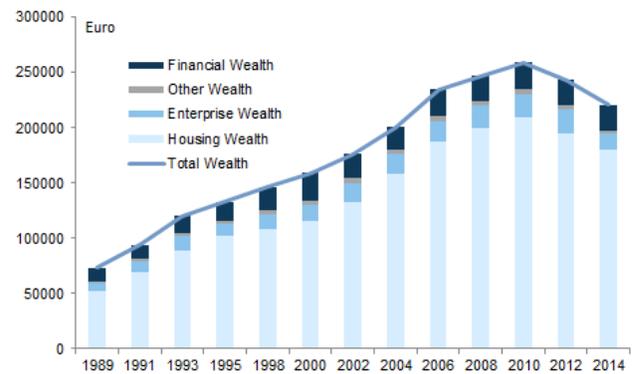
Average nominal data from the SHIW. The real data (not reported in the chart) show that the average level of real income in 2014 is broadly in line with the average level in 1989.



Source: Banca d'Italia, Goldman Sachs Global Investment Research

Exhibit 3: Italian households hold 80% of their wealth in houses; financial assets account for just 10%

Average nominal data from the SHIW.



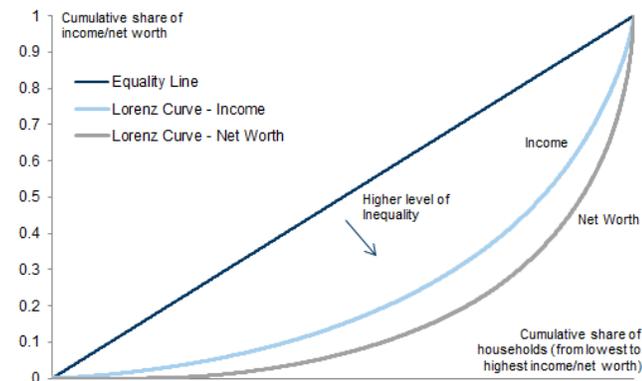
Source: Banca d'Italia, Goldman Sachs Global Investment Research

For richer, for poorer

The *ex-post* distributional consequences of the ECB's unconventional monetary policy measures will first and foremost depend on the *ex-ante* allocation of income and wealth across households. The cross-section of the Italian households' survey in 2014 presents evidence of a right-skewed distribution of income and net worth (as graphically illustrated by the estimated Lorenz Curve (Exhibit 4)). However, income and net worth inequalities were even more pronounced during the 2008-2012 period (Exhibit 5), in the midst of the financial crises, and are currently lower than their sample averages.⁵

Exhibit 4: The estimated Lorenz Curve suggests the level of inequality is particularly high for net worth

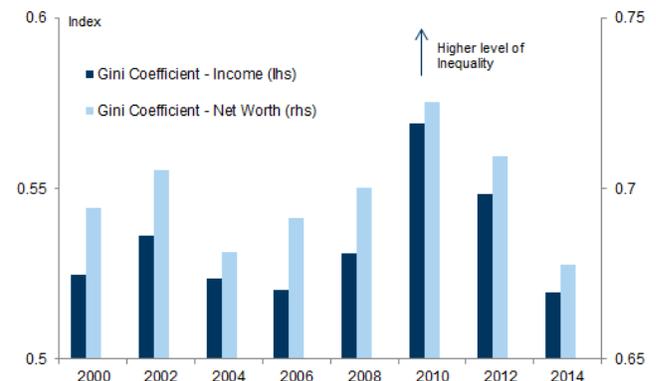
The Lorenz Curve is a graphical measure of inequality. A perfect level of equality corresponds to the 'equality line'; a more pronounced curvature corresponds to higher inequality. The Lorenz Curve is estimated with 2014 data



Source: Banca d'Italia, Goldman Sachs Global Investment Research

Exhibit 5: The Global Financial Crisis and the European Sovereign Crisis saw a notable increase in inequality

The Gini coefficient measures the level of inequality (it corresponds to the area inside the Lorenz Curve)



Source: Banca d'Italia, Goldman Sachs Global Investment Research

⁵ The economic measures introduced by the Italian governments in 2014 may have also contributed to lower inequalities. The government established a tax bonus for low-income earners.

Central banks' large-scale asset purchases strengthen households' balance sheets both (1) by reducing their debt burden – lowering long-term interest rates and therefore reducing the cost of external finance – and (2) boosting asset prices (of both 'real' and 'financial' assets).⁶ But the extent to which different households will benefit from the non-standard monetary policy measures will ultimately – and tautologically – depend on their *ex-ante* holdings of housing and financial wealth, as well as on the level of their outstanding debt.

Exhibit 6 illustrates the breakdown of wealth and debt by levels of income. Unsurprisingly, high income households have both a higher level of wealth and debt: households from the top income decile hold almost half of the total financial wealth and 40% of housing wealth, while their debt liabilities account for more than 50% of total outstanding debt. A similar skew is observable in the distribution of holdings of 'risky' financial wealth (i.e., excluding deposits): households in the top two deciles of the income distribution own more than half of total households' holdings of public equity, other financial assets⁷ and government bonds (73%, 72% and 60%, respectively) (Exhibit 7).

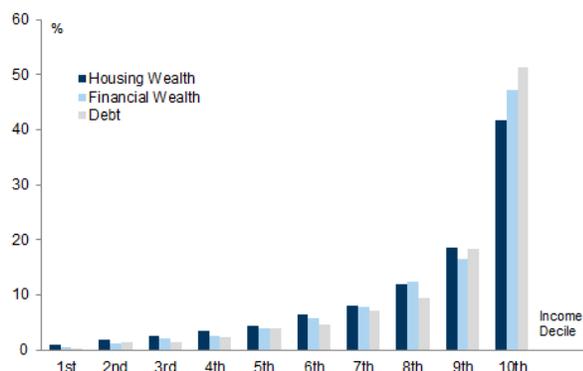
Prima facie, the reduction in households' debt burden and the boosts to asset prices underpinned by the ECB's QE measure will therefore pre-eminently favour richer households, increasing inequalities within the country. However, our focus here is on the direct effect of QE on wealth (a 'partial equilibrium' approach), rather than the effects of other transmission channels of the ECB's unconventional monetary policy measures. We can therefore conclude that, while the direct effect of QE on wealth may foster inequality within a country, the jury is still out on the overall distributional consequences of the ECB's non-standard measures, given the variety and complexity of their transmission channels. In the end, an improved macroeconomic outlook will benefit all sections of society and may even serve to lower inequality, as these second-round effects kick in. While data from 2015 (following the launch of QE) are not available yet, the decrease in the Gini index for 2014 shows that there is no evidence that previous unconventional monetary policy measures (LTROs, covered bonds and ABS purchases) have exacerbated inequality.

⁶ The rise in housing and financial wealth will also increase the value of households' collateral and therefore improve households' borrowing conditions.

⁷ The class 'other financial assets' includes: bonds other than government bonds, share in pension funds or investment funds, private equity shares.

Exhibit 6: The Distribution of Wealth and Income is markedly skewed towards higher income households

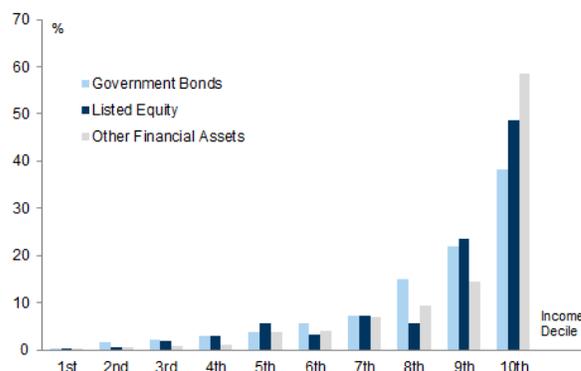
Data as of 2014. Percentage holdings of total wealth/debt by households ranked according to income decile



Source: Banca d'Italia, Goldman Sachs Global Investment Research

Exhibit 7: Households in the top two deciles hold more than 70% of equity and 60% of government bonds

Data as of 2014. Percentage holdings of total government bonds/public equity/other financial assets by households ranked according to income decile



Source: Banca d'Italia, Goldman Sachs Global Investment Research

The *wealth effect* in the transmission of QE to consumption: Wealth and income distribution matter

Aside from the *ex-post* distributional consequences of QE, the *wealth effect* on consumption is generally considered to be one of the main transmission channels of the ECB's unconventional monetary policy to the real economy. The increase in household wealth – which in general will follow a boost to asset prices – should ultimately spur household consumption, with positive spillover effects for the wider economy.

However, the 'functioning' of this transmission channel largely depends on how households adjust their spending following a sudden change in their wealth. To quantify the wealth effect on consumption, we estimate a panel regression using the SHIW (see Box 1).

Our results (see Table 1 in Box 1) imply that the **housing wealth effect** on consumption is statistically and economically significant. Our estimates point to an elasticity of 1%-2%: for every EUR100 rise in house prices, households increase consumption by around EUR1-2. Although the magnitude of the coefficient is somewhat lower than the equivalent estimated in US data (where the housing wealth effect estimates from [existing studies](#) range from 2% to 8%), this is unsurprising given the limited liquidity of the real estate market and the difficulty involved in withdrawing mortgage equity in Italy (and in the Euro area as a whole).

An increase in **financial wealth** also supports higher consumption, although the sensitivity is somewhat weaker than for housing wealth. Household consumption tends to respond to an increase/decrease in the value of equity with an elasticity of 0.2%-0.7%, while the sensitivity to government bonds or other financial assets (e.g., holdings in investment funds, private equity and corporate bonds) is about 0.5%-1.5%, depending on the specifications of the model.

The statistical significance of the quadratic terms also suggests that households' sensitivity to housing and equity wealth is non-linear, and that it increases for larger variation. Furthermore, households with a higher leverage also tend to be more responsive to a change in their wealth.

That said, the distribution of wealth also matters. Our results suggest that **the marginal propensity to consume (MPC)** declines as wealth increases. The sensitivity (to a change in wealth) will therefore be stronger for households with a lower level of wealth, while it will be somewhat more muted for wealthy households (see Box 2). Against this, households with no wealth will not respond (at least directly) to changes in asset prices at all, since they are not exposed to them. And, as we have argued in the past, an increase in house prices may also make renters or young households (who want to buy their first home) worse off, with a subsequent reduction in their spending.⁸

This evidence implies that the ***ex-ante* distribution of wealth among households affects the pass-through** of unconventional monetary policy to consumption and ultimately to the broader real economy and inflation developments. While we are not able to indicate an 'optimal' distribution of wealth that would maximise the transmission of QE policies, our results suggest that an excessively skewed distribution may hamper the *wealth effect* transmission channel and undermine the effectiveness of QE.

In the past we discussed the importance of distributional effects of non-standard monetary policies, although we have mainly focused on the political consequences of the cross-country redistributive effects they imply. Here we focused on the importance of wealth and income distribution across households, showing that (i) QE policies will likely have important distributional effects and that (ii) the *ex-ante* level of inequality within a country considerably affects the transmission of QE policies to the real economy. Finally, while the paucity of data means we were only able to focus on Italy and therefore cannot draw general (or even Euro area-wide) conclusions, our results suggest that the effectiveness of the *wealth effect* transmission channel of QE policies will be weaker in the Euro area than in the US.

All in all, while our findings do not provide a definitive answer on the overall distributional and economic effects of QE policies, they should add to the discussion on the costs/benefits trade-off of the transmission channels of QE.

Matteo Leombroni

⁸ We see this negative effect as limited in Italy as 70% of Italian households own their house. For a more detailed discussion on this topic, see: Benito, Waldron, Young and Zampolli (2007).

Box 1: The *wealth effect* on consumption

Under the life-cycle permanent income hypothesis (PIH), the total consumption of a household will be proportional to its total resources over the rest of its life. According to this model, households accumulate or consume their wealth in order to keep the marginal utility of consumption smoothed over time and they may therefore revisit their consumption spending following a sudden change in their wealth. A number of academic papers have also attempted to quantify the wealth effect on consumption using macro- or micro- economic data.¹ Exploiting the information content of the Italian Survey of Household Income and Wealth (SHIW), we estimate the wealth effect on consumption using a panel regression.

Our sample consists of bi-annual observations from 1989 to 2014 and includes 40,000 observations (after having excluded outliers); all the variables are expressed in real terms. Our results are overall robust to different sample periods, apart from the equity wealth effect, which is not significant when using only the most recent data.

Table 1: Estimation of the Wealth Effect on Consumption

Estimates from the unbalanced panel regression with significance stars (* for $p < .05$, ** for $p < .01$, and *** for $p < .001$)

Equation number:	(1)	(2)	(3)	(4)	(5)	(6)
Dependent Variable:	Δ Consumption					
Δ Real Wealth	0.00517***	0.00217***				
Δ Financial Wealth	0.00351***	0.00113**				
Δ Housing Wealth			0.0144***	0.00843***	0.0169***	0.0101***
Δ Government Bonds Wealth			0.0101***	0.00638***	0.0118***	0.00742***
Δ Equity Wealth			0.00767***	0.00271	0.0105***	0.00456*
Δ Other Financial Assets Wealth			0.0116***	0.00557***	0.0142***	0.00731***
Wealth * (Δ Housing Wealth + Δ Financial Wealth)			-3.00e-09***	-2.27e-09***	-4.95e-09***	-3.54e-09***
Leverage * (Δ Housing Wealth + Δ Financial Wealth)					0.000424***	0.000416***
Δ Housing Wealth ²					1.68e-09***	1.08e-09***
Δ Government Bonds Wealth ²					1.33E-09	1.53E-09
Δ Equity Wealth ²					8.41e-09***	5.89e-09***
Δ Other Financial Assets Wealth ²					7.79E-10	-1.39E-09
Δ Disposable Income		0.310***		0.298***		0.296***
Constant	Yes	Yes	Yes	Yes	Yes	Yes
Control Variables (Time Dummy, Age, etc.)	Yes	Yes	Yes	Yes	Yes	Yes

Source: Goldman Sachs Global Investment Research

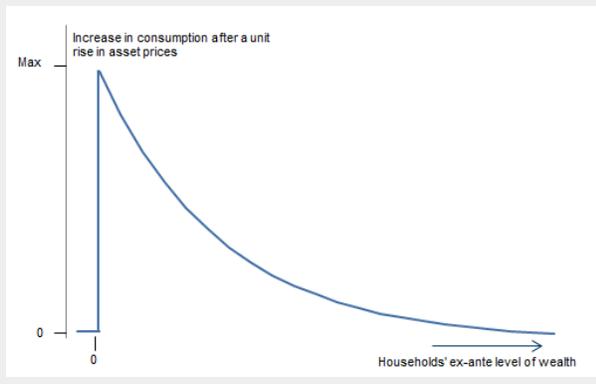
¹ Paiella and Pistaferri (2014), for instance, estimated the wealth effect using microeconomic data on Italian households, also distinguishing between expected vs unexpected change in wealth. Lettau and Ludvigson (2004) used a Vector Error Correction Model (VECM) on macroeconomic data, distinguishing between permanent vs transitory shocks. We also used a similar estimation in a previous European Economics Daily (see "Financial wealth and consumption in the Euro area," September 1, 2015). In our estimates we do not distinguish between permanent and transitory shocks or an unexpected vs expected change in wealth.

Box 2: The marginal propensity to consume (MPC)

In Box 1, we showed that the marginal propensity to consume (MPC) out of wealth declines as wealth increases – a result common in the theoretical and empirical literature.¹ As Exhibit 8 illustrates, an increase in asset prices will not generate any additional consumption spending either for households with no wealth (since they are not exposed to the asset price rises) or for very wealthy households (who spend very little of the capital gain). This means that an extremely skewed distribution of wealth will not generate any additional consumption following an increase in asset prices and (other things equal) the transmission of QE to demand in the real economy will be less efficient.

Exhibit 8: The increase in consumption following a unit rise in asset prices declines as wealth increases

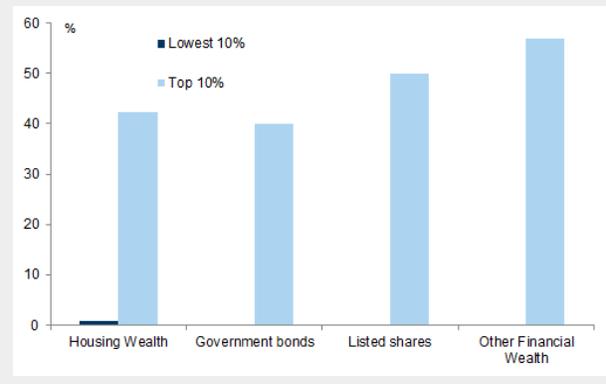
The exhibit sketches households' increase in consumption following a unit increase in wealth



Source: Goldman Sachs Global Investment Research

Exhibit 9: The wealth distribution is significantly skewed. A large fraction of households do not hold any financial wealth, while the top 10% own almost half of total financial wealth

Holding of wealth; Lowest 10% and Top 10% according to the income distribution

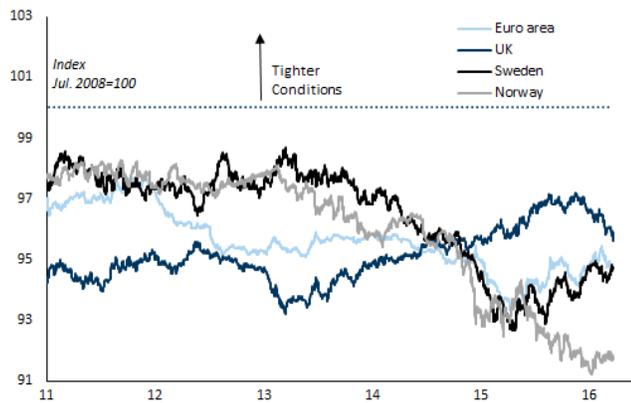


Source: Banca d'Italia, Goldman Sachs Global Investment Research

¹ Arrondel, Lamarche and Savignac (2015) also conducted a similar empirical investigation, showing that the MPC out of wealth decreases as wealth increases

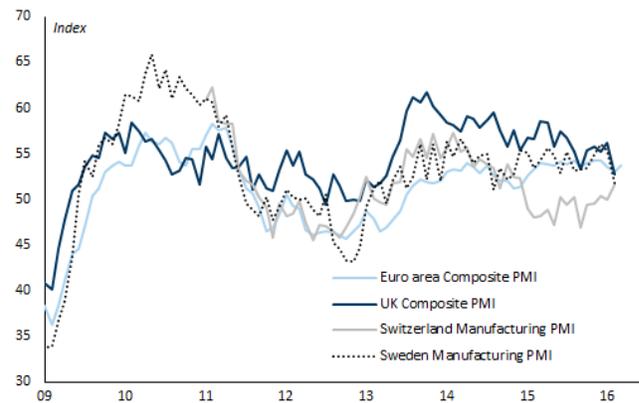
Key European Indicators

Financial conditions have proved volatile recently



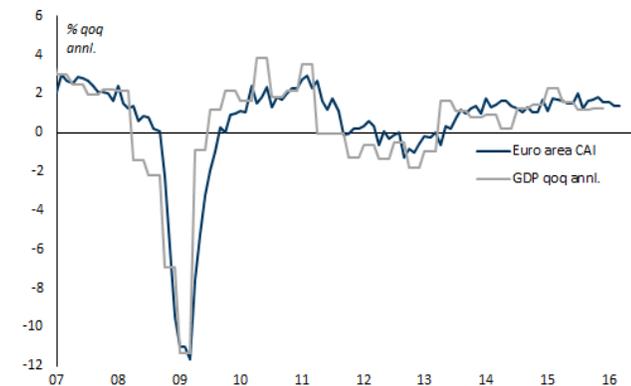
Source: Goldman Sachs Global Investment Research

Business sentiment has moved sideways in the Euro area recently



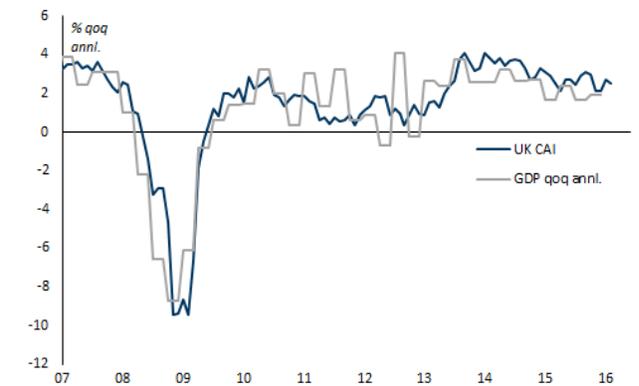
Source: Markit, SVME, Swedbank, Goldman Sachs Global Investment Research

Our Euro area Current Activity Indicator points to growth of 1.4% qoq annualised



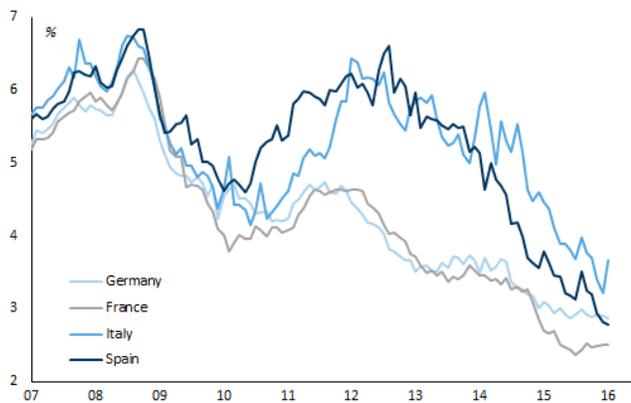
Source: Goldman Sachs Global Investment Research

Our UK Current Activity Indicator is consistent with growth of 2.5% qoq annualised



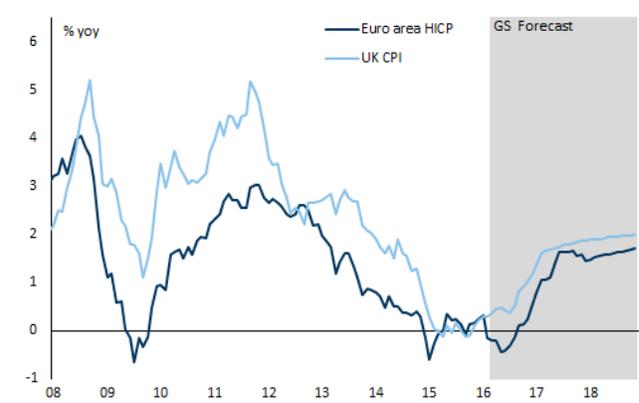
Source: Goldman Sachs Global Investment Research

Bank lending rates in the periphery continue to converge on rates in core economies as credit conditions ease



Source: ECB, Goldman Sachs Global Investment Research

We expect Euro area inflation to fall over the first half of 2016, due to weakness of commodity prices



Source: Eurostat, ONS, Goldman Sachs Global Investment Research

Main Forecasts

Economic Forecasts

	GDP (Annual % change)			Consumer Prices (Annual % change)			Current Account (% of GDP)			Budget Balance (% of GDP)		
	2015	2016	2017	2015	2016	2017	2015	2016	2017	2015	2016	2017
Euro area	1.5	1.4	1.5	0.0	-0.2	1.4	3.2	3.0	2.8	-2.4	-1.7	-1.4
Germany	1.5	1.3	1.3	0.1	0.4	1.9	8.1	7.5	7.2	-0.5	0.1	0.2
France	1.1	1.4	1.6	0.1	0.2	1.0	-0.3	-0.2	-0.2	-3.8	-3.4	-3.2
Italy	0.6	1.2	1.4	0.1	0.2	0.9	2.0	1.7	1.3	-2.8	-2.2	-1.4
Spain	3.2	2.6	2.1	-0.6	-1.1	1.2	1.0	0.9	1.1	-4.4	-3.0	-2.7
UK	2.2	2.5	2.6	0.0	0.7	1.8	-4.0	-3.5	-2.6	-3.6	-2.6	-1.7
Switzerland	0.7	1.5	1.6	-1.1	-0.6	0.4	9.5	8.3	8.3	0.1	0.4	0.6
Sweden	3.8	4.1	3.1	0.0	0.9	2.1	6.5	6.6	6.5	-0.8	0.4	1.1
Denmark	1.2	1.6	2.2	0.2	0.7	2.0	7.4	7.2	7.3	-3.4	-3.4	-2.1
Norway*	1.1	1.1	2.3	2.2	2.5	2.4	8.0	7.9	8.3	-	-	-
Poland	3.6	3.4	3.2	-0.9	0.5	2.0	-0.4	-1.2	-1.9	-3.0	-2.9	-2.9
Czech Republic	4.5	2.7	2.6	0.3	0.9	1.5	1.0	-0.5	-1.1	-1.9	-1.9	-2.2
Hungary	2.6	2.6	2.6	-0.1	1.7	2.9	3.5	1.3	1.0	-2.7	-2.7	-2.8

*Mainland GDP growth.

Source: Goldman Sachs Global Investment Research

Interest Rates

Close 22 March

Country	Term	2016		2017		2018		
		Spot	Forecast*	Forward	Forecast*	Forward	Forecast*	Forward
Germany	3M	-0.2	-0.1	-0.3	0.0	-0.3	0.4	-0.1
	10Y	0.2	0.6	0.3	1.0	0.4	1.8	0.5
UK	3m	0.6	1.2	0.6	1.5	0.8	1.7	1.0
	10Y	1.4	1.8	1.6	2.5	1.8	3.3	1.9
Switzerland	3M	-0.7	-0.2	-0.9	0.4	-0.9	1.1	-0.8
	10Y	-0.3	1.0	-0.3	1.5	-0.2	2.3	-0.1
Sweden	3M	-0.4	2.7	-0.5	2.9	-0.2	3.2	-
	10Y	0.5	3.5	0.7	3.8	0.9	4.0	1.1
Norway	3M	1.0	0.7	0.5	1.1	0.6	1.6	-
	10Y	1.3	1.8	1.3	2.2	1.4	2.8	1.5

*GS end-year forecast

Source: Goldman Sachs Global Investment Research

European Calendar

Focus for the Week Ahead

On Thursday March 31, Euro area flash inflation will be released at 10.00am (London time). We expect a print of -0.2%, unchanged from -0.2% in February, and for core to remain at +0.8%. The Euro area release will follow the German flash inflation print on Wednesday, and French, Spanish and Italian inflation on Thursday morning.

Economic calendar of events

Country	Time (UK)	Economic Statistic	Period	Forecast		Previous		
				GS	Cons.	mom/qq	yoy	
Fri 25 Mar								
France	07:45	Consumer Confidence	Mar	—	96.0	95.0	—	—
France	07:45	GDP	4Q F	+1.4%yoy	+1.4%yoy	+0.3%qq	+1.4%	—
Tue 29 Mar								
Euro area	09:00	M3 - YoY % Change	Feb	—	—	—	—	5%
Italy	09:00	Business Confidence	Mar	—	—	102.0	—	—
United Kingdom	11:00	FPC Statement	—	—	—	—	—	—
Wed 30 Mar								
Switzerland	08:00	KOF Leading Indicator	Mar	—	102.0	102.4	—	—
Euro area	10:00	Consumer Confidence	Mar F	—	—	-9.7	—	—
Euro area	10:00	Business Confidence	Mar	—	—	7.0	—	—
Germany	13:00	Harmonised CPI	Mar P	-0.1%	—	+0.4%mom	—	-0.2%
Thu 31 Mar								
United Kingdom	00:05	GfK Consumer Confidence	Mar	—	—	0.0	—	—
France	07:45	Harmonised CPI	Mar P	-0.4%	—	+0.3%mom	—	-0.1%
France	07:45	Consumer Spending	Feb	—	—	+0.6%mom	—	+0.6%
Spain	08:00	Harmonised CPI	Mar P	-1.5%	—	-0.4%mom	—	-1%
Germany	08:55	Unemployment Rate	Mar	—	—	+6.2%	—	—
United Kingdom	09:30	GDP	4Q F	+0.5%qq	—	+0.5%qq	—	+1.9%
United Kingdom	09:30	Mortgage Approvals	Feb	—	—	+74.6k	—	—
United Kingdom	09:30	Services Output 3m/3m	Jan	—	—	+0.7%mom	—	—
United Kingdom	10:30	M4 Ex IOFCs	Feb	—	—	—	—	+4.3% annl.
Italy	10:00	Harmonised CPI	Mar P	-0.1%	—	—	—	-0.2%
Euro area	10:00	CPI - Core (nsa)	Mar A	+0.8%	—	—	—	+0.8%
Euro area	10:00	Harmonised CPI	Mar	-0.2%	—	—	—	-0.2%
Fri 1 Apr								
Sweden	07:30	PMI - Manufacturing	Mar	—	—	51.7	—	—
Spain	08:15	PMI - Manufacturing	Mar	—	—	54.1	—	—
Switzerland	08:30	PMI - Manufacturing	Mar	—	—	51.6	—	—
Italy	08:45	PMI - Manufacturing	Mar	—	—	52.2	—	—
France	08:50	PMI - Manufacturing	Mar F	—	—	49.6	—	—
Germany	08:55	PMI - Manufacturing	Mar F	—	—	50.4	—	—
Italy	09:00	Unemployment Rate	Feb P	—	—	+11.5%	—	—
United Kingdom	09:30	PMI - Manufacturing	Mar	—	—	50.8 sa	—	—

Source: Bloomberg, Goldman Sachs Global Investment Research. Economic data releases are subject to change at short notice in calendar. Complete calendar available via the Portal — <https://360.gs.com/gs/portal/events/econevents/>.

Disclosure Appendix

Reg AC

We, Huw Pill, Kevin Daly, Dirk Schumacher, Andrew Benito, Alain Durré, Lasse Holboell Nielsen, Matteo Leombroni and Pierre Vernet, hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

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