Financial cycles in the eurozone: no signs of immediate risk

by Dr. Thomas Strobel, Economist (UniCredit Bank, Munich)

- Recently intensified trade tensions between the US and China, as well as fading US fiscal stimulus, have skewed the risks to a recovery in global growth to the downside.
- Given a weak global environment, economic activity in the eurozone is likely to expand by only 1% annually in 2019 and 2020. However, our analysis shows that there is no immediate threat stemming from the eurozone financial cycle, which significantly reduces the probability of a major crisis in the eurozone.
- Although a broad-based downturn in the financial cycle of the eurozone is currently not in sight, we identify some pockets of risk at the country level.
- We observe some stress in the financial cycle of France, while other major eurozone member states have not yet reached their cyclical peak (Germany) or are still recovering after having passed through their cyclical trough (Italy, Spain).

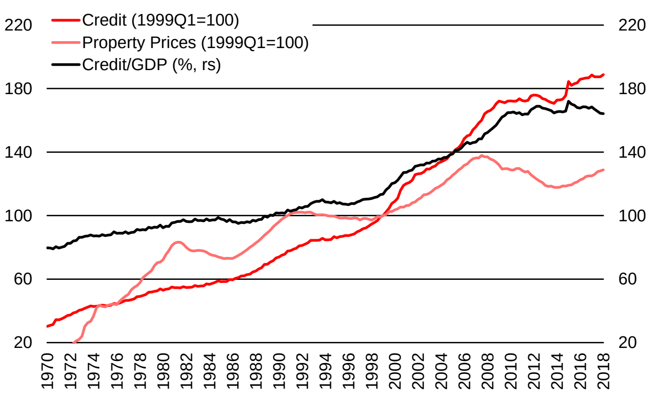
Eurozone financial cycles at a glance

While the latest quarterly data from China exceeded expectations, suggesting that some modest recovery in global growth may be in the cards after the summer, recently intensified trade tensions between the US and China have skewed the risks of such a recovery to the downside. Moreover, in the medium term, global growth will be additionally affected by fading US fiscal stimulus. As far as the eurozone is concerned, we expect GDP to expand by only 1% annually in 2019 and 2020. However, our analysis shows that the eurozone financial cycle poses no immediate threat of a major crisis. In particular, empirical evidence shows that downturns in the financial cycle have a negative effect primarily on the real business cycle (although the opposite is not necessarily true). Very strong economic downturns appear when downturns in both the financial cycle and the real business cycle overlap, as was the case in 2008-09.

In this analysis, we will focus on the financial cycle of the eurozone as a whole and of its four major member countries, Germany, France, Italy and Spain. To calculate a financial cycle proxy for both the eurozone and its member states, we use three separate financial indicators according to Drehmann et al. (2012)[1]. These are **1.** a residential property price index, **2.** total credit to the private non-financial sector, and **3.** the ratio of total credit of the private non-financial sector to a country's GDP (for more details on the indicators and the construction of the composite financial cycle, see "Computing a financial cycle proxy" at the end of this article).[2]

Chart 1 shows the three indicators for the eurozone from 1Q71 to 2Q18. As can be seen, the eurozone saw a pronounced surge in private debt (in both absolute terms and relative to GDP) after the eurozone was launched in 1999. In the wake of the global financial crisis, this trend was interrupted for credit/GDP, turning into a sideways movement of this measure, while credit alone resumed rising. House prices also started to surge in the late 1990s, but unlike credit and credit/GDP, they reversed course in 2007 before picking up again from 2013 onward.

CHART 1: FINANCIAL INDICATORS FOR THE EUROZONE



Source: BIS, Bloomberg, UniCredit Research

Chart 2 shows the financial cycles derived (from the three financial indicators as shown in Chart 1) for the eurozone and the individual member countries. To calculate the financial cycle proxy, all series of financial indicators are converted into year-over-year terms before being filtered and aggregated. The series are filtered to separate trends from cycles.

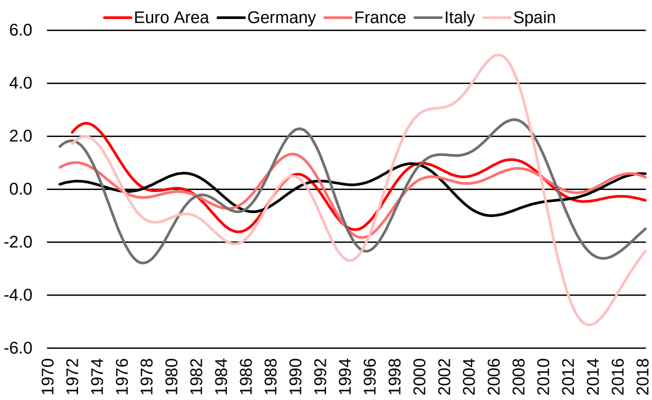
According to these results, the aggregate eurozone financial cycle proxy has been moving sideways to slightly negative in recent years. This suggests that on average the components of the eurozone financial cycle are currently growing at a rate that is moderately below their long-term growth trend. The aggregate eurozone cycle, however, reflects heterogeneous developments at country level. Looking at the individual cycles of the four major member states, Spain and Italy are in an upswing and thus are still recovering from a deep trough.

[1] Drehmann M., Borio C. and K. Tsatsaronis (2012), "Characterising the financial cycle, don't lose sight of the medium term!", BIS Working Papers, No. 380.

[2] In their paper Drehmann et al. (2012) considered five financial indicators, including credit to the private non-financial sector, the ratio of credit to GDP, equity prices, residential property prices; and an index of aggregate asset prices (combining residential property, commercial property and equity prices).

Germany is looking back at a comparatively flat but very long-lasting upturn in its financial cycle, which has started to grow above trend in recent years. This is similar to the trend in France, which has also shown above-trend growth recently, but also suggests that the cycle in France has already reached its peak.

CHART 2: EUROZONE FINANCIAL CYCLES



Source: BIS, Bloomberg, UniCredit Research

Beyond the latest development in financial cycles, at least three main observations can be drawn from a historical perspective. First, the financial cycles of Italy and particularly Spain show a much higher amplitude compared to those of Germany and France, at least from the 1990s onwards. The standard deviation, as a simple measure of volatility, verifies this finding. It has been significantly lower for Germany and France than for Italy and Spain (see Table 1).

TABLE 1: STANDARD DEVIATIONS OF FINANCIAL CYCLES

Period	Eurozone	Germany	France	Italy	Spain
1972-2018	0.95	0.52	0.70	1.65	2.64
1972-1999	1.12	0.42	0.83	1.46	1.30
1999-2018	0.57	0.60	0.25	1.81	3.70

Source: UniCredit Research

Second, the synchronicity of country-level financial cycles has been high for most of the countries. Table 2 shows a correlation matrix between the four member states and the eurozone aggregate. As can be seen, France, Italy, and Spain all show a rather strong correlation, both among each other as well as relative to the aggregate, whereas the German cycle is negatively correlated with that of the other three and de facto uncorrelated with that of the eurozone.

The final and most important finding, however, is the current position of the cycle and the potential path of the cycle in the future. At first glance, the data available so far suggests that Germany and France are peaking and might enter a financial slowdown in the medium term, whereas Italy and Spain are still in a recovery phase. However, filtering techniques usually face an end-point problem, which we have tried to mitigate by including eight-quarter forecasts. But since the end-point issue might still lead to biased conclusions, we will have an additional look at the financial indicators in level terms on country level.

The main reason for looking at levels instead of year-over-year growth rates is that at the current edge, levels provide additional information on momentum and at the same time allow for a comparison of current levels with historical ones. This should make it easier to identify the current level in the cycle and put our conclusions about the future developments more solid ground.

TABLE 2: FINANCIAL CYCLES CORRELATION

	EMU	GER	FRA	ITA	SPA
EMU	1.00				
GER	0.03	1.00			
FRA	0.67*	-0.19*	1.00		
ITA	0.55*	-0.36*	0.62*	1.00	
SPA	0.68*	-0.22*	0.40*	0.77*	1.00

*significantly different from 0 (i.e. no relationship) at 5% level

Source: UniCredit Research

Germany: hot housing market, but solid balance sheets

Although German real house prices have risen by roughly a quarter over the past five years, they are still far below their historical maximum (currently 14% below their peak in 1980) and have not yet even reached their latest peak in the mid-1990s (currently around 10% below the 1994 peak) before entering a two-decade-long decline. Additionally, high immigration and refugee numbers as well as solid domestic demand mean that house prices are backed by fundamentals rather than pure speculation and low interest rates.[3] Also, according to Bundesbank data, the volume of mortgage loans has been stable at roughly 35% of GDP since 2014 after having declined for at least a decade.

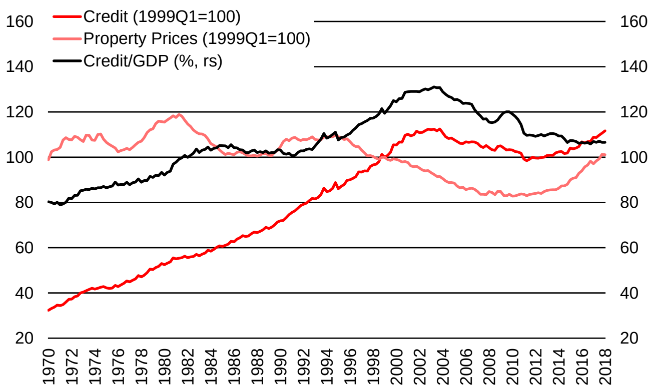
Similar to the development of home prices, credit to the private non-financial sector has also been on the rise for the last half decade, but only in absolute terms, not relative to GDP. As Charts 3 to 6 clearly indicate, the German credit/GDP ratio is not only low by its own historical standard, but also compared to that of the other three countries.

Financial indicators, therefore, are not flashing any warning signs. Of course, if economic stress increases, for example due to decreasing global trade, firms and households might cut their borrowing and, hence, spending. Then the business cycle would put downward pressure on the financial cycle.

[3] For a reference, see Economics Thinking – German housing market: Set for a demographically-driven construction boom (17 March 2016)

However, at the moment, the most recent development of the three financial indicators suggests that the German financial cycle has not yet reached its peak, which is in line with what the financial cycle proxy shown in Chart 2 suggests.

CHART 3: FINANCIAL CYCLE COMPONENTS FOR GERMANY

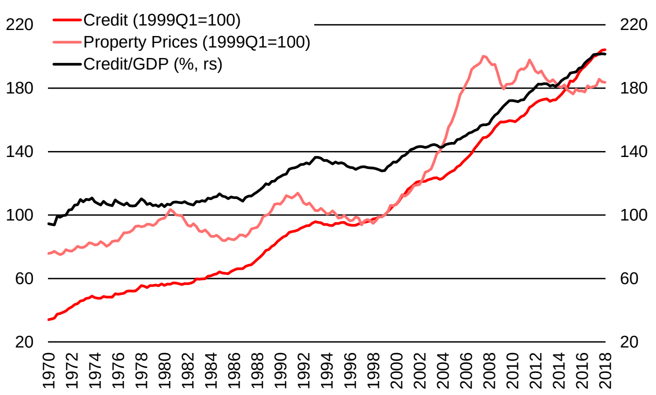


Source: BIS, Bloomberg, UniCredit Research

France: solid credit growth at already high levels

In France, the picture is very different. Credit growth (in absolute terms) has by far outpaced that of the other three countries since the financial crisis, but has been moving sideways since mid-2017. Given the country's strong increase in credit growth over the last decade, credit/GDP levels have risen to a record high, raising concerns about the country's debt-service capability should the economy enter a slowdown, potentially triggered by a decline in global growth. Although France is less dependent on global trade than Germany, French manufacturers are surely not immune to changes in global trends.

CHART 4: FINANCIAL CYCLE COMPONENTS FOR FRANCE



Source: BIS, Bloomberg, UniCredit Research

A factor supporting the financial cycle in France somewhat is the housing market, as property prices have shown no signs of overheating recently. Instead, property prices have eased from their latest peak in 2011 and have been moving broadly sideways in the last five years. However, they still remain at a high level.

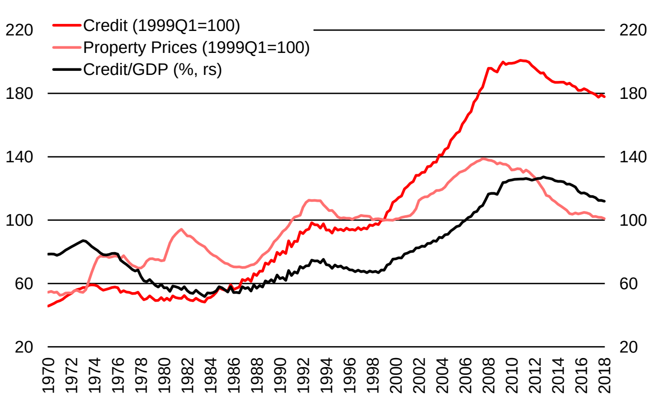
All in all, a final determination of which point the French financial cycle is at is not easy. It cannot be clearly inferred from the most recent developments of the three financial indicators that the financial cycle has peaked. A lot depends on the extent of the expected economic downturn in 2020 and whether it causes record-high credit/GDP levels to collapse.

Italy: private debt counterbalances public debt

While Italy has drawn plenty of media attention over the past year, mainly due to its government's desire to increase public spending, private debt in the country seems fairly low. Even though GDP growth has been weak since the financial crisis, the private sector has managed to decrease its debt level from 125% of GDP in 2010 to 112% last year.

Property prices have also declined significantly, coming down by more than a quarter over the past decade. On the upside (from an investor point of view), the rental price index has not declined, meaning that Italian property has become more attractive as an investment. This might increase the demand for housing, putting a floor under house prices and eventually putting them back on an upward path.

CHART 5: FINANCIAL CYCLE COMPONENTS FOR ITALY



Source: BIS, Bloomberg, UniCredit Research

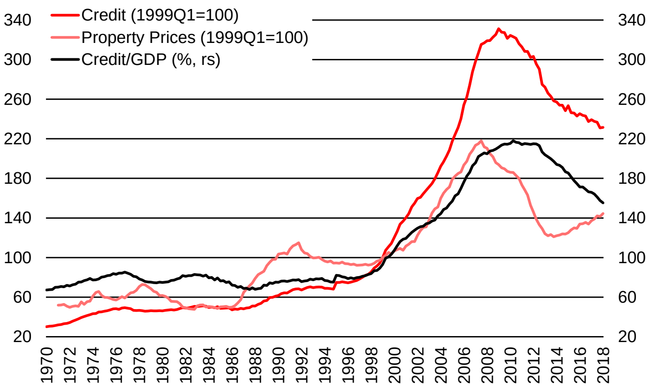
In conclusion, the financial cycle proxy derived from the filter seems to exaggerate the actual state of the financial cycle in Italy by indicating a steep upswing (see Chart 2). Even though each one of the financial indicators is on the decline, the rate of decline is decreasing, confirming that the trough in the financial cycle has already been passed. However, the indicators also do not point to a strong reversal.

Spain: still recovering from the house-price bubble

Spain can provide a textbook example of a house-price bubble: beginning in the late-1990s, there was a huge surge in private debt, in both absolute and relative terms. In the wake of the financial crisis, the Spanish non-financial private sector then paid down around a third of its debt. Relative to GDP, credit decreased by a quarter in the period from 2008 to 2014. Private credit is still not showing any signs of a reversal and private balance sheets have improved significantly over the last decade. Despite the improvement, debt levels are still comparatively high.

House prices followed credit before peaking in 2007 and reversing into an equally steep downturn. It was not until 2014 that property prices began to recover. They have since returned to solid 5% yoy growth.

CHART 6: FINANCIAL CYCLE COMPONENTS FOR SPAIN



Source: BIS, Bloomberg, UniCredit Research

The picture in Spain is similar to that in Italy: although the financial cycle proxy has passed its trough (see Chart 2), it seems to exaggerate the actual upswing. While the decline in credit has slowed and property prices have returned to growth, confirming the upswing, credit/GDP levels continue to fall and this decline shows no signs of abating. This raises the question as to whether the filtered index overstates the strength of the actual financial cycle upswing.

Concluding remarks

While we expect the global economy to enter a more pronounced slowdown in 2020 with negative effects on eurozone growth, the risk of a major crisis due to a significant downswing in the eurozone financial cycle is low. Although it cannot be denied that there are some risks on the country level, there is currently no broad-based downturn in the eurozone in sight.

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Computing a financial cycle proxy

Financial cycles are less researched and well-defined than the business cycle. Therefore, in this issue we follow the methodology of Drehmann et al. (2012) and take a look at three financial indicators over the period 1Q71-2Q18 with quarterly data from the BIS: **1.** a residential property index, **2.** total credit to the private non-financial sector, and **3.** the ratio of total credit of the private non-financial sector to a country's GDP. The first two indicators are deflated by the CPI and transformed to log levels, while the credit/GDP ratio is expressed in percentage points. To ensure the comparability of the indicators, all series are then normalized by their respective value in 1Q99, the year the third and final stage of the European Monetary Union was launched. Finally, four-quarter differences were taken from the indexed series in order to obtain year-over-year (yoy) changes. Using both credit and credit/GDP makes it possible not only to account for increases in private debt levels, but also to compare what the private sector owes with what a country produces. The more the ratio increases, the less likely the private sector will be able to pay back its debt and the higher the risk of default. This in turn could cause financial stress in domestic and international markets.

Like Drehmann et al. (2012), we then applied the Christiano and Fitzgerald (2003)[4] band-pass filter to extract medium-term cycles with a duration of 32 to 120 quarters (or 8 to 30 years). In a first step, we applied the filter to every individual member country series. In a second step, we then constructed the financial cycle proxy by calculating the arithmetic mean of the individual filtered indicators. Before filtering, an ARIMA(4,4) model was applied to all series to estimate eight-quarter forecasts of the indices to mitigate the end-point problem of filters.

Since aggregate eurozone data is not available before 1999, we used data from the original twelve eurozone member countries (except Luxembourg, for which no data was available) to calculate a proxy for the aggregate in earlier periods. Specifically, we used credit and credit/GDP data to calculate GDP series like those used by the BIS. We then added these series up and divided the sum of credit to the private non-financial sector of the individual countries by it. Since these eleven countries produced around 99% of the eurozone's GDP and held 97% of the credit to the private sector at the end of the 1990s, this proxy should be a good enough approximation for the eurozone before 1999.

[4] Christiano, L. J. and T. J. Fitzgerald (2003), "The Band Pass Filter", *International Economic Review*, Vol. 44(2), 435-465.

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