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How Europe is different from Japan

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- This piece is part of a trilogy comparing Europe with Japan. In this second instalment, we focus on the differences between Europe and Japan in the 1990s. In a separate piece (available here), we highlight the similarities between the two experiences. Finally, in the third piece out next month, we will conclude and discuss what would reduce the risks of Europe falling into a Japan-like trap.
- The argument might depend on your definition of what a Japan scenario entails. We would define it as a situation in which there is a large private sector credit bubble that bursts. The private sector deleveraging is slow and is not accommodated by either aggressive fiscal or monetary policy. Inflation turns negative and the output gap widens while real interest rates are too high. The dynamics are exacerbated by a weak banking sector and ageing population.
- To assess if Europe's experience is similar to Japan in the 90s, we analyse the evolution of key economic and financial variables during each region's respective crisis episode and use the US as a benchmark for this comparison.
- The size of private sector imbalances in Europe were materially smaller than in Japan. The deleveraging process and monetary policy response in Europe was closer to the US with a lag than Japan in the 90s. Fiscal policy was more supportive than in Japan, even if it tightened too early (as was the case in the US).
- The unemployment gap in Europe peaked 3-4 years after the US and has declined at the same pace, which is reflected in a similar pick up in wage growth and unit labour costs. This is in sharp contrast with Japan's experience.
- Europe avoided Japan's deflation. However, so far, the recovery in core inflation has been shallower than in the US despite comparable unemployment and wage dynamics.
- As a teaser for the third part of the series, it's fair to say that Europe is an imperfect union and Italy's real rate experience resembles Japan with the appropriate lag. It's also the case that although Europe's credit experience doesn't resemble Japan's, China's does. So it's possible China could be more like Japan than Europe on this measure going forward. More on this in the third part next month.

Introduction

This piece is the second part of a trilogy comparing Europe with Japan. In this instalment, we focus on the differences between Europe and Japan in the 1990s. In a separate piece (available here), we highlight the similarities between the two experiences. Finally, in the third piece, we will conclude and discuss what would reduce the risks of Europe falling in a Japan-like trap.

For the purpose of this piece, a Japan scenario could be defined as a situation in which there is a large private sector credit bubble that bursts. The private sector deleveraging is slow and is not accommodated by either aggressive fiscal or monetary policy. As a result, the credit impulse (i.e. the pace of deleveraging) never reverses, and domestic demand remains under pressure. Ultimately, the economy converges to a situation in which inflation is negative and the output gap is widening while real interest rates are too high. This dynamic is exacerbated by population ageing and a weak banking sector.

To assess if Europe's experience is similar to Japan in the 90s, we analyse the evolution of key economic and financial variables during each region's respective crisis episode. We also use the US as a benchmark for this comparison. In practice, we set as a reference date (t=0) the peak in credit growth (Q1-90 in Japan and Q4-07 in the US and Europe) to compare the relevant variables in event time.

We find that Europe *in aggregate* resembles the US (with a 3-4 year lag) more than Japan.

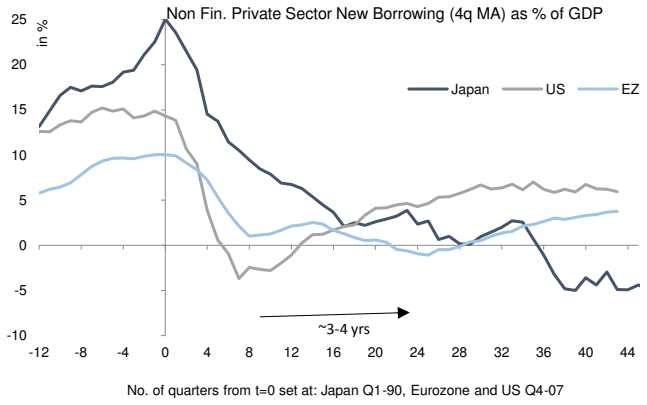
How Europe is different from Japan

First, we focus on the dynamics of credit growth as a percentage of GDP. This will provide information on the extent of the credit bubble (the run up in credit growth ahead of the crisis). It will also highlight how quickly the adjustment occurred. A sharp and early reduction in credit growth reduces the risk of longer-term deflationary dynamics. It sets the stage for an improvement in the *change* in credit growth (the credit impulse) which correlates with GDP growth.

A smaller private sector credit bubble and greater initial adjustment in Europe

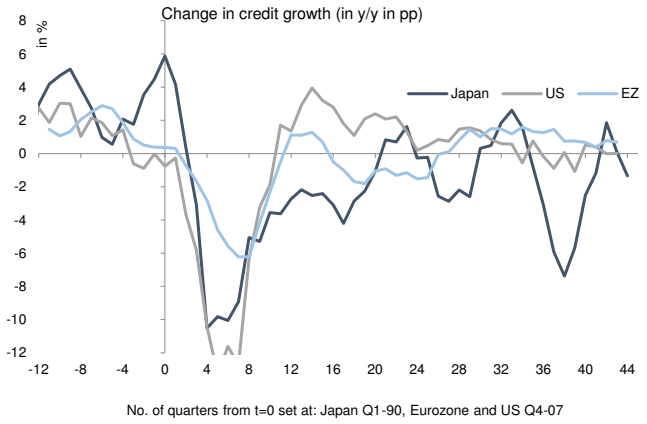
In Japan, credit growth rose from ~10% of GDP to ~25% in the early 90s. Credit growth rose to ~15% in the US and ~10% in Europe ahead of the 2008 crisis. Thus, the overall scale of the credit overhang appears smaller in Europe. In Japan, credit growth adjusted slowly and did not turn negative before the late 90s. In the US, credit growth turned negative after 1.5 years, quickly reaching -3.7%. In Europe, it turned negative 3.5 years after the US reaching -1.1% (left graph below). Subsequently, the credit impulse in the US and Europe recovered, while it never turned sustainably positive in Japan (right graph below).

Figure 1: Credit growth was significantly higher in Japan and did not turn negative fast enough



Source : Deutsche Bank, Haver Analytics, ECB, Federal Reserve, Cabinet Office, BoJ

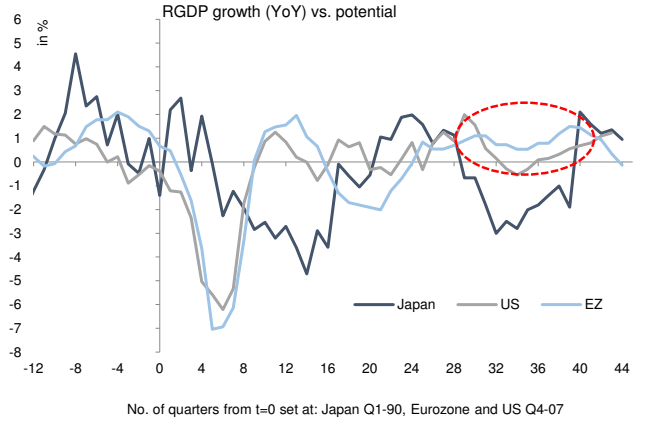
Figure 2: Unlike Japan, the credit impulse in Europe turned sustainably positive and outperformed the US for a few years



Source : Deutsche Bank, Haver Analytics, ECB, Federal Reserve,Cabinet Office, BoJ

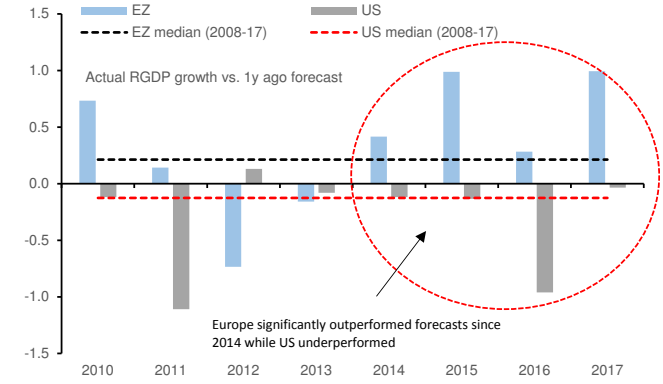
During the period of positive credit impulse, the economy is likely to be growing above potential, reducing the unemployment gap. In fact, for 3 years, the credit impulse in Europe was *higher* than in the US. During this period Europe outperformed its growth potential and consensus more than the US (graphs below).

Figure 3: Europe outperformed its growth potential more than the US over the three years of higher credit impulse



Source : Deutsche Bank, Haver Analytics, OECD, BEA, eurostat, Cabinet Office, BoJ

Figure 4: Europe outperformed growth forecasts from 2014 to 2017



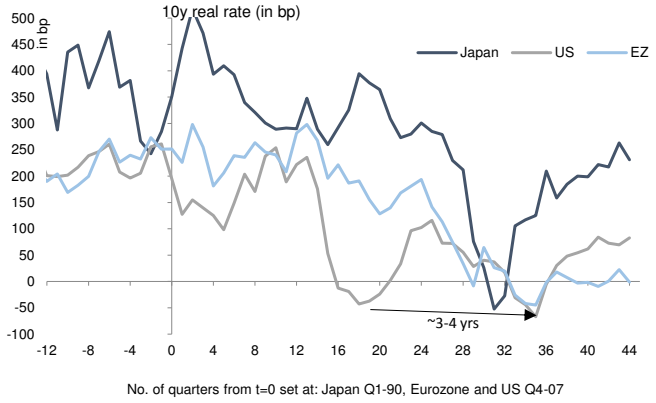
Source : Deutsche Bank, Haver Analytics, Consensus Economics, BEA, eurostat, Cabinet Office, BoJ

The policy response in Europe was closer to the US (with a lag) than Japan in the 1990s

To measure the effectiveness of monetary policy in supporting the deleveraging process, we focus on the 10y real rate and the real effective exchange rate. In Japan, 10y real rates stayed in a 2-3% range (save for a temporary distortion due to the VAT hike in 1997). In contrast, 10y real rates in the US declined by 300bp relative to pre-crisis and went negative to -50bp after operation twist in late 2011. In Europe, 10y GDP weighted real rates also went negative with the announcement of QE in 2015. Thus, similar to the credit dynamics, the policy response in Europe lagged the US by 3-4 years (left graph below). The 300bp difference in real rates between Japan

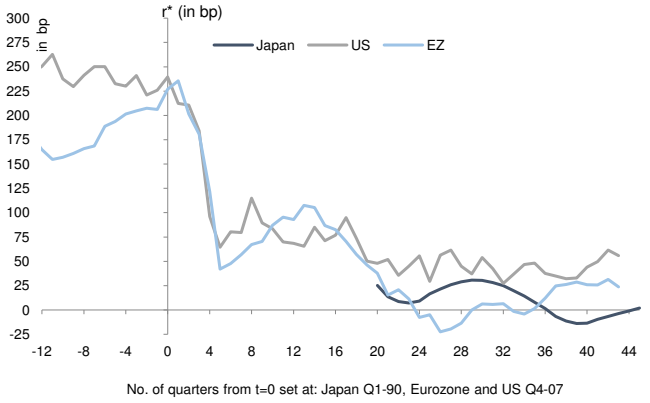
in the 90s and Europe is significant given that estimates of neutral real rates (albeit uncertain) are within 25bp of each other (right graph below).

Figure 5: Real rates in the Eurozone are 2-3% below real rates in Japan in the early 90s



Source : Deutsche Bank, Haver Analytics, Bloomberg Finance LP, BLS, eurostat, Cabinet Office, BoJ

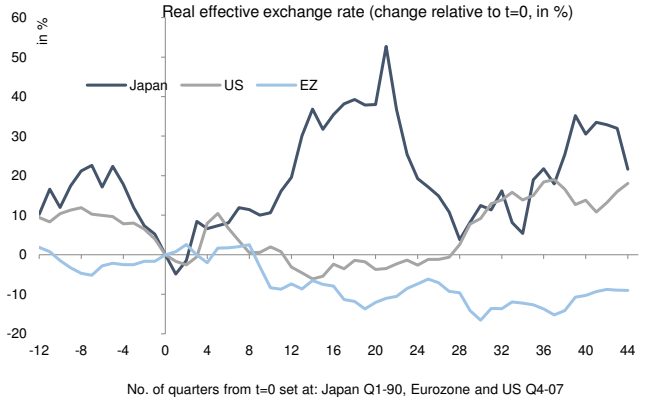
Figure 6: Estimates of r-star in the Eurozone today and Japan in the 90s are within 25bp of each other



Source : Deutsche Bank, Bloomberg Finance LP, Holston-Laubach-Williams r-star estimates , DB estimates

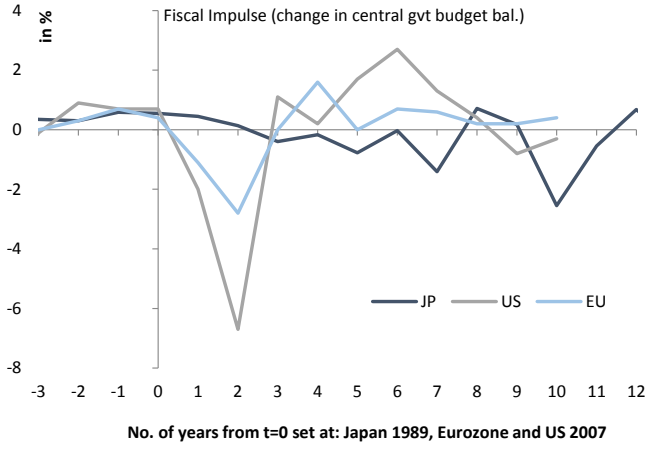
Japan had to suffer a significant appreciation in its currency with a peak 50% appreciation of the yen on a real effective exchange rate (REER) basis. In contrast, the euro depreciated by more than 15% in 2015, vs. a trough for the USD REER of -6% (left graph below).

Figure 7: The yen appreciated significantly, while the euro depreciated



Source : Deutsche Bank, Haver Analytics, OECD

Figure 8: The Eurozone and the US loosened fiscal policy earlier and more aggressively than Japan



Source : Deutsche Bank, Haver Analytics, OECD

Initially, fiscal policy in the Eurozone was very reactive (as it was in the US), which accommodated the private sector deleveraging . However, the Eurozone crisis resulted in a sharp fiscal tightening. The same occurred in the US following the debt ceiling issues, but the adjustment of the private sector was already well advanced by then and monetary policy was more aggressive. Japan was slower to loosen fiscal policy. It then allowed fiscal policy to be easier for longer, but the VAT hike of

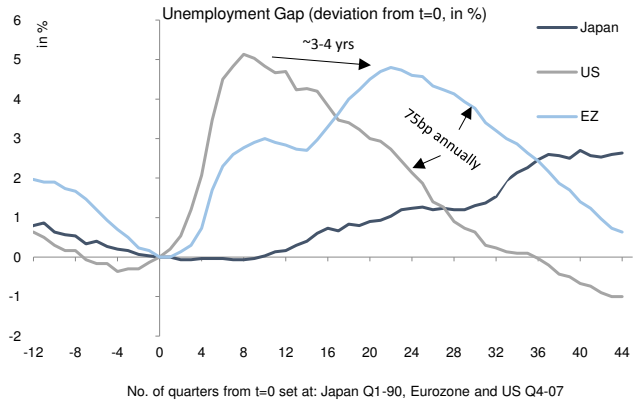
1997 plunged the economy in a more entrenched deflation (right chart above).

The Taylor rule inputs: evolution of the unemployment gap and core inflation

So far, we have some evidence that (1) the size of private sector imbalances in Europe were materially smaller than in Japan, (2) the deleveraging process and monetary policy response in Europe was closer to the US with a lag than Japan and (3) fiscal policy was more supportive than in Japan, even if (like in the US) it tightened too early. To measure the impact of the policy setting on the economy, we focus on the Taylor rule variables: the unemployment gap and core inflation.

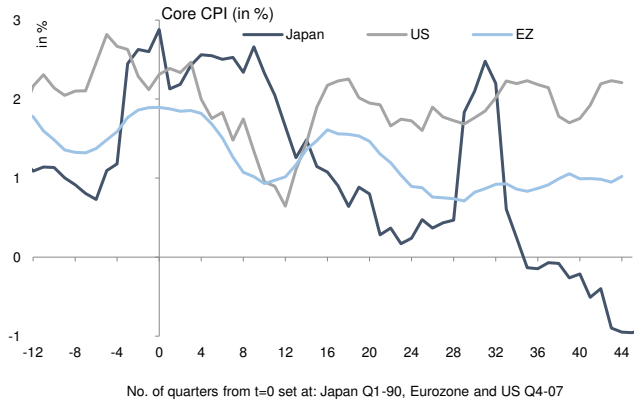
In Japan, the unemployment gap initially did not rise as the economy was not adjusting. In contrast, the unemployment gap rose sharply in the US before declining at a steady pace of ~75bp/year. In Europe, and in line with the other variables, the unemployment gap peaked 3-4 years after the US (and at roughly the same level), before declining at the same pace. This confirms that during the period of positive credit impulse, the economy was growing above potential in Europe.

Figure 9: The unemployment gap in the Eurozone followed the US with a 3-4 year lag rather than Japan in the 90s



Source : Deutsche Bank, Haver Analytics, eurostat, BLS, Cabinet Office, BoJ

Figure 10: Eurozone core inflation did not decline as much as in Japan but has not recovered as much as in the US

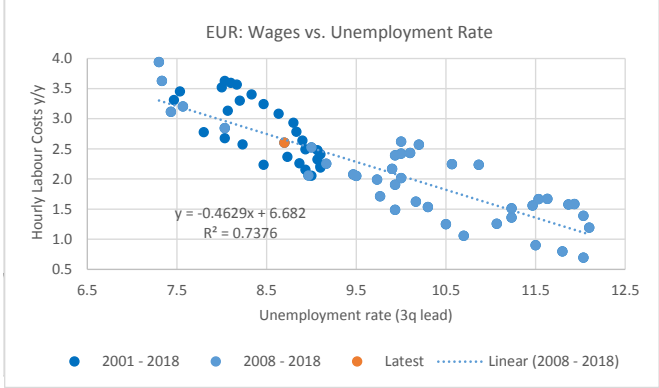


Source : Deutsche Bank, Haver Analytics, eurostat, BLS, Cabinet Office, BoJ

In Japan, core inflation initially held up, which is consistent with a delayed economic adjustment. However, after 3 years it started a downward trend which was only briefly interrupted by the 1997 VAT hike. In the US and Europe core inflation initially declined before bouncing back to 1.5-2%. Following the debt ceiling episode, eurozone crisis and supply shock to oil prices, core inflation declined in both the US and Europe. The scale of the decline in Europe was larger (~1% vs. ~0.5% in the US) and the recovery in US core inflation has been more pronounced. The behaviour of Europe's inflation is markedly better than Japan. However, so far, its performance is worse than simply lagging the US.

The underperformance of core inflation is somewhat at odds with wage dynamics. Indeed, the tightening of the unemployment gap discussed above has translated into a commensurate increase in wages, with no obvious dislocation of the wages Phillips curve in Europe (left graph below). In fact unlike inflation, wages in Europe are moving in line with the US (right graph below).

Figure 11: The tightening of the unemployment gap has translated into a commensurate increase in wages



Source : Deutsche Bank, Haver Analytics, eurostat

Figure 12: Wages in Europe are moving in line with the US

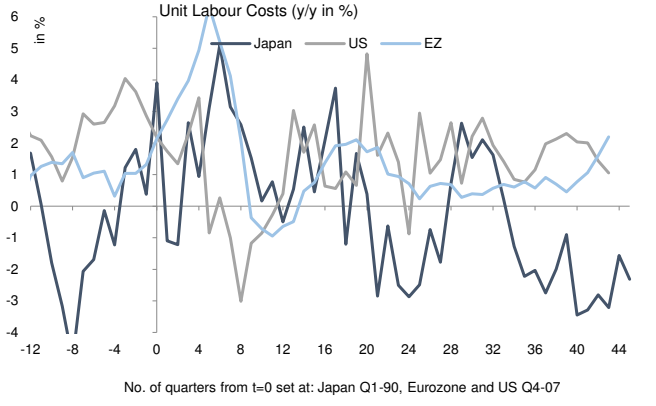
Source : Deutsche Bank, Haver Analytics, eurostat, BLS, Cabinet Office, BoJ

Similarly, unit labour costs in the Eurozone did not turn negative and recently have risen back to pre-crisis levels (left graph below). In contrast, in Japan they turned sustainably and deeply negative (save for the temporary impact of the VAT hike).

In short, inflation in the Eurozone has underperformed the US, but this is at odds with the fact that growth was above potential and surprised to the upside, the tightening of the unemployment gap and corresponding pick up in wages and unit labour costs. Europe remains quite far from the Japan experience. However, even if inflation is not as low as in Japan, the fact that it is far enough from target will determine the ECB's monetary policy.

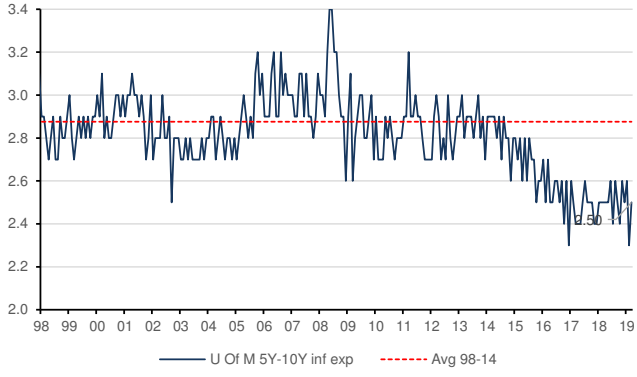
Finally, it is worth noting that the tame inflation dynamic is a global phenomenon that took hold after the supply shock to oil prices that started in 2014. For instance, the university of Michigan 5-10y inflation expectations has dropped 30bp post the oil shock and never recovered (right graph below). This decline in the perception of inflation risks is also reflected in the risk premium in USD breakevens.

Figure 13: Unit labour costs in the Eurozone did not turn negative as in Japan and have been rising recently



Source : Deutsche Bank, Haver Analytics,OECD

Figure 14: 5-10y inflation expectations dropped ~30bp post the oil shock



Source : Deutsche Bank, Haver Analytics, University of Michigan

Conclusion

Overall, Europe's experience is different from Japan's experience in many important respects. First, the size of the credit bubble was smaller and the adjustment to credit was faster. Second, the policy response was closer to the US experience (with a lag) than Japan. Third, growth and the unemployment gap did follow more closely the US precedent (with a lag) than Japan. The prognosis for core inflation, which is arguably the most important variable, is more nuanced. It is clearly above the levels observed in Japan, but it has failed to match the recovery observed in the US. This is the case despite the fact that the standard wage Phillips curve in Europe has been less distorted than in the US.

As a teaser for the third part in this series it's fair to say that in an imperfect union, Europe's weakest link (Italy) will matter. Italy does share more similarities with Japan than the rest of Europe. For instance, its real rates have remained close to Japanese levels, while arguably its neutral real rate is even lower. Second, the exposure of Europe to global growth will make it more sensitive to other large economies. In that context, China does share troubling similarities with Japan. Credit growth is higher than the levels observed in Japan in the early 90s and its real effective exchange rate has appreciated significantly as it did in Japan. Could China more resemble Japan than Europe on this measure?

We will discuss these issues in greater detail in our forthcoming third note on the topic.

Appendix 1

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