The Yo-Yo Years

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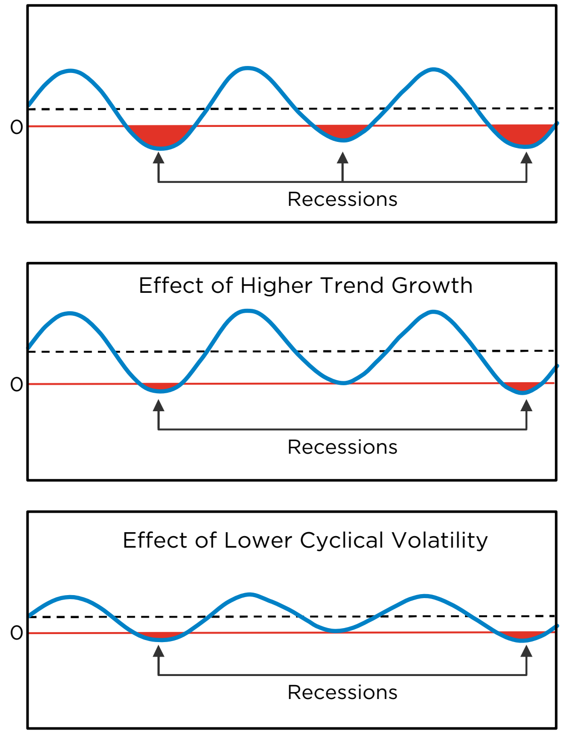
In the larger policy debate about getting to sustainable debt levels in most developed economies, people are making critical assumptions that, when we consider the business cycle, are highly questionable. If such assumptions, like those about long-term growth and the likelihood of recession, don't hold, *a lot of bets are off*.

For years we've been honing in on a very ominous pattern in the United States. Actually this goes back to the summer of 2008 (before Lehman), when we realized that we were entering an era of more frequent recessions than anyone was used to.

Further research shows that these patterns also hold for much of Europe – let me explain.

A Stylized View of Recession



Top Panel: For starters, think about the business cycle in the abstract. The blue line (top panel) shows economic growth cycling up and down like a sine curve. Every time it dips below zero you get negative growth marked off by those red areas which are recessions. The dotted line shows the long-term trend growth rate, with economic growth cycling above and below.

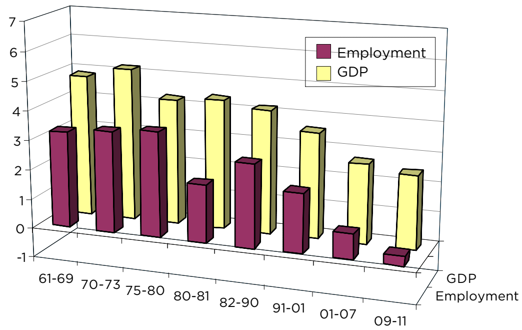
Middle Panel: Suppose all this stayed the same except that *trend growth was shifted up*. Now economic growth (blue line, middle panel) dips below zero less often, resulting in less frequent and milder recessions. This is what we see today in some of the emerging markets with strong trend growth.

Lower Panel: Now, suppose that, with the top chart as the starting point, this time we keep *trend growth unchanged*, but instead *tamp down the cycle volatility* so that we have smoother, tamer business cycles. Again, economic growth (blue line, bottom panel) dips below zero less often, and we get less frequent and milder recessions.

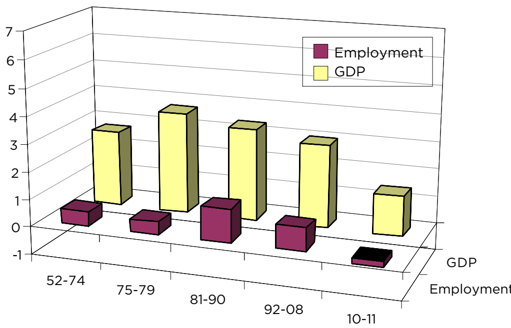
So, there are two fundamental ways to get less frequent recessions: raise long-term trend growth or tamp down cycle volatility. The latter is what happened in the U.S. from the mid-80s through 2007, the so-called Great Moderation of the business cycle, during which we had long expansions.

Let's turn from stylized concepts to real data.

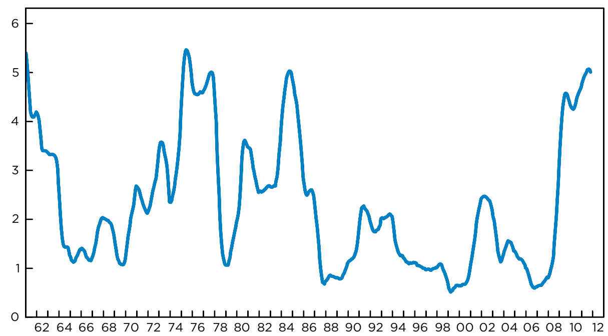
Trend Growth (%) in Output and Employment During U.S. Expansions



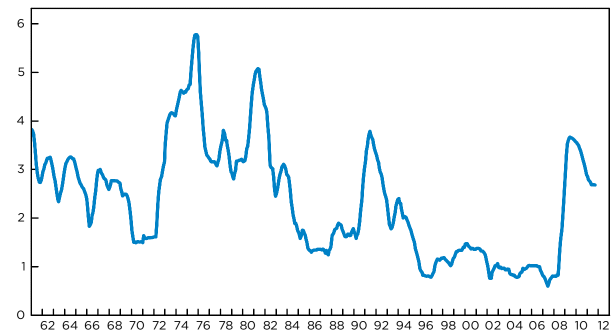
Trend Growth (%) in Output and Employment During U.K. Expansions



Cyclical Volatility of U.S. Coincident Index Growth



Cyclical Volatility of U.K. Coincident Index Growth



Upper Left Corner: So in the summer of 2008 (pre Lehman), we were looking at a version of the bar chart (upper left corner) showing growth in U.S. GDP and jobs during each business cycle expansion over the past half-century, and saw a compelling pattern of growth stair-stepping down in successive expansions starting from the 1970s. We couldn't think of any good reason for that long-standing pattern to reverse itself, so we expected we'd get a weak expansion this time around, *and then we got Lehman*.

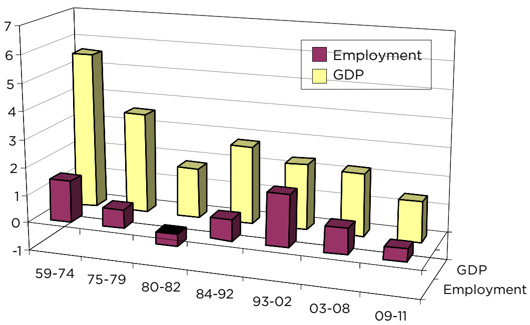
Bottom Left Corner: Many know how following financial crises you tend to get unusually weak growth anyway. But there's more. The bottom left corner chart shows that economic cycle volatility has spiked up to multi-decade highs after being muted from the mid-80's through 2007 (3-year standard deviation of U.S. Coincident Index).

So, recalling the charts from the previous page, these two patterns virtually dictate more frequent recessions. Where we want to see higher trend growth we have the opposite, a pattern of lower and lower trend growth during expansions for decades now. And where we want lower cycle volatility we have it running up to multi-decade highs.

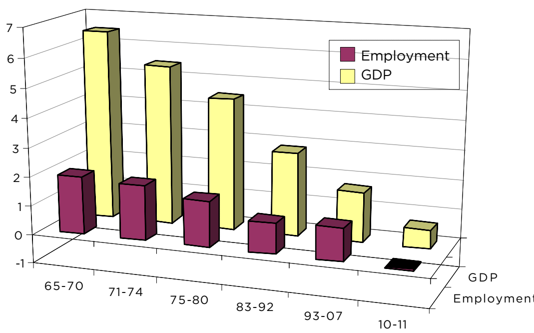
The U.S. is hardly alone in this respect. The right-hand charts show similar patterns for the U.K.

Let's turn to France and Italy.

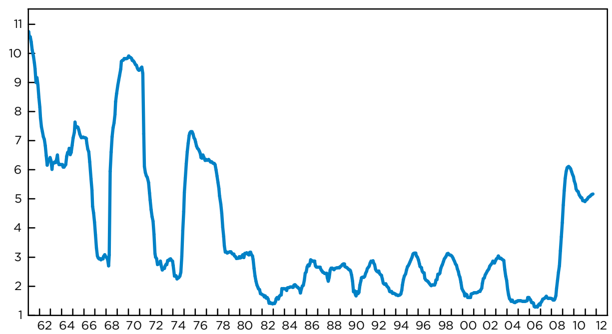
Trend Growth (%) in Output and Employment During French Expansions



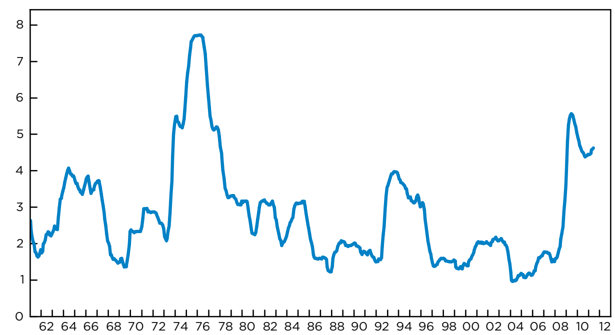
Trend Growth (%) in Output and Employment During Italian Expansions



Cyclical Volatility of French Coincident Index Growth



Cyclical Volatility of Italian Coincident Index Growth



You can see France and Italy have the same challenge, even more so, let alone Spain (not shown). In Germany we don't see a similar pattern of falling growth during successive expansions, but they do have a similar spike in cyclical volatility (not shown).

Once you have falling trend growth alongside increased cyclical volatility, the inference is clear - this combination virtually dictates more frequent recessions. So for the next 5-10 years we're going to have to deal with this challenge.

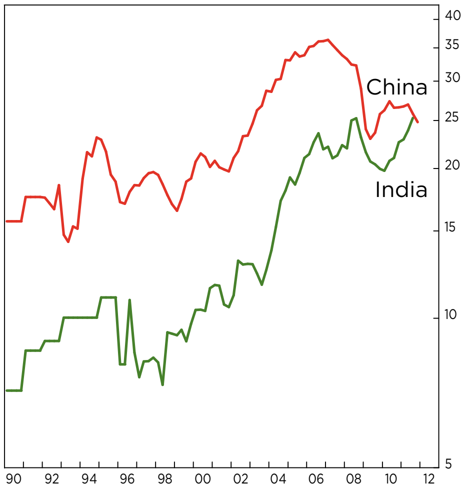
Starting in the early 1980s, we got three relatively long U.S. expansions (8yrs, 10yrs and over 6 years) back-to-back so many people think that's the norm. But as we see, we now have extraordinarily low trend growth, while the Great Moderation of the business cycle is history. So, more frequent recessions should not be a surprise, nor is it unusual. For example, from 1969-82 the U.S. had four recessions in less than 13 years. Going back a bit further, from 1799-1929 almost 90% of expansions lasted three years or less.

Regarding Europe, it's understood that austerity alone cannot put Greece in a tenable fiscal position any time soon because its growth prospects are so horrible. But these charts tell us that for Italy, France, and the U.K., leave aside Spain, longer-term growth prospects are dismal; essentially modest growth during expansions, punctuated by frequent recessions with negative growth, averaging out to very anemic overall trend growth. There's no way to square the standard fiscal assumptions with such growth prospects without radical structural changes that result in a quick reversal in these patterns of multi-decade declines in the pace of growth. This raises serious questions about the idea that Europe can muddle through by keeping markets afloat on a sea of liquidity until growth picks up in a few years.

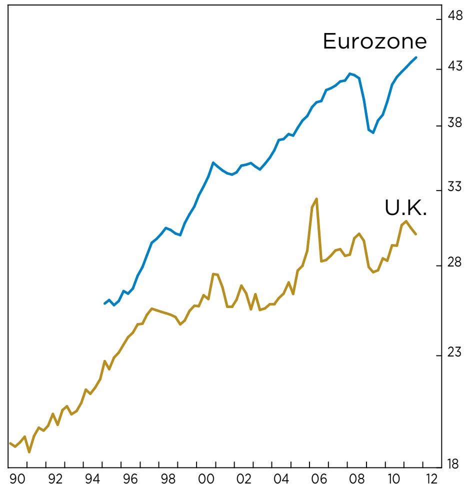
The U.S. is not that different, and faces the same chronic growth challenges – essentially slow growth punctuated by more frequent recessions.

This is about developed economies, but what about cyclical dynamics for the developing world?

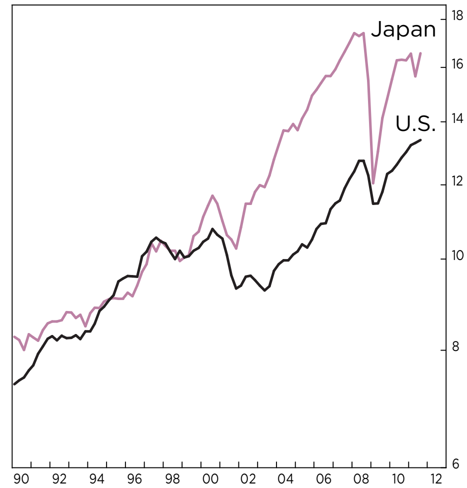
Exports as a Percentage of GDP in Asia-Pacific Region



Exports as a Percentage of GDP in Europe



Exports as a Percentage of GDP in U.S. and Japan



The idea of "decoupling" often comes up as a way for one part of the world to dodge weakness elsewhere. But, over the last two decades, a key driver of the greater *coupling* of economic cycles had been the increasing interdependence of world economies, with more openness in the flows of capital and trade – especially merchandise trade.

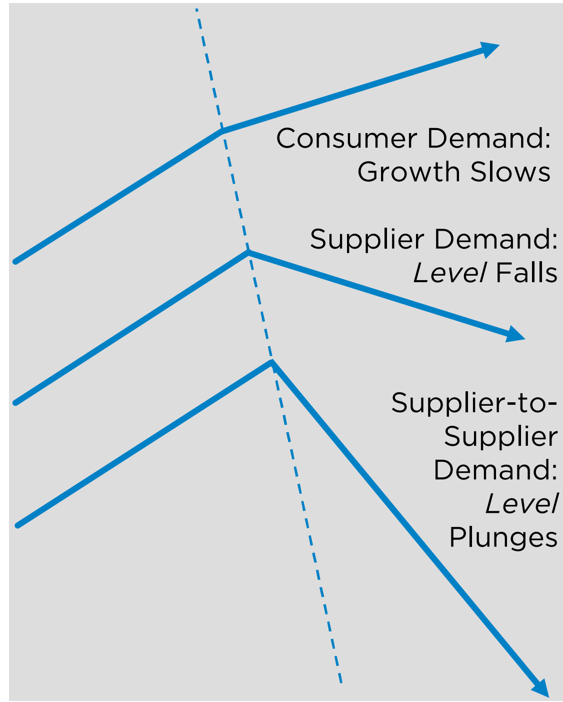
Indeed, the export dependence of most economies has risen dramatically in this period. We see that export/GDP ratios have increased sharply since the early 1990s across all countries, which is evidence of the intensification of global integration through trade. In the Asia-Pacific region, this proportion roughly doubled for Japan, more than tripled for India and Korea, and advanced to roughly 75% from 42% for Taiwan. In China, the share of exports relative to GDP had also doubled by about 2007. Since then, there has been a gradual decrease, with exports still accounting for about a quarter of Chinese GDP.

Meanwhile, in the Eurozone, exports as a percentage of GDP have jumped to 44% from 26% in 1995. In the U.K. the proportion increased from 19% in 1990 to 30% at present. In the Americas, the proportion of Canadian exports increased from 25% in the early 1990s to 45% in 2000, before falling back to around 34%. Similarly, Brazilian exports almost doubled as a share of GDP from roughly 7% in early 1991 to around 14% in late 2006, only to fall back and settle at around 12% recently. Meanwhile, Mexican exports have tripled their share of GDP, while the U.S. ratio of exports to GDP has almost doubled from 7% in 1990 to nearly 14% now.

The implications of this increased interdependence based on trade linkages are magnified by the workings of the Bullwhip Effect – let me explain.

Shoe-Leather-Hide Sequence: The Bullwhip Effect

- **End user demand is moderately cyclical.**
- **Supplier demand is more cyclical.**
- **Supplier-to-supplier demand, furthest up the supply chain, is most cyclical. But supply is relatively insensitive, so *prices* become highly cyclical.**



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We agree with the consensus that developing economies have become a key driver of long-term secular global growth. *But*, in cyclical terms, developing economies are very much subject to the Bullwhip Effect, where small fluctuations in consumer demand growth get amplified up the supply chain into big swings in demand as we move away from the consumer.

So, smaller shifts in end consumer demand growth translate into larger fluctuations in intermediate goods demand, and even bigger ones in input material demand, and especially, raw material prices.

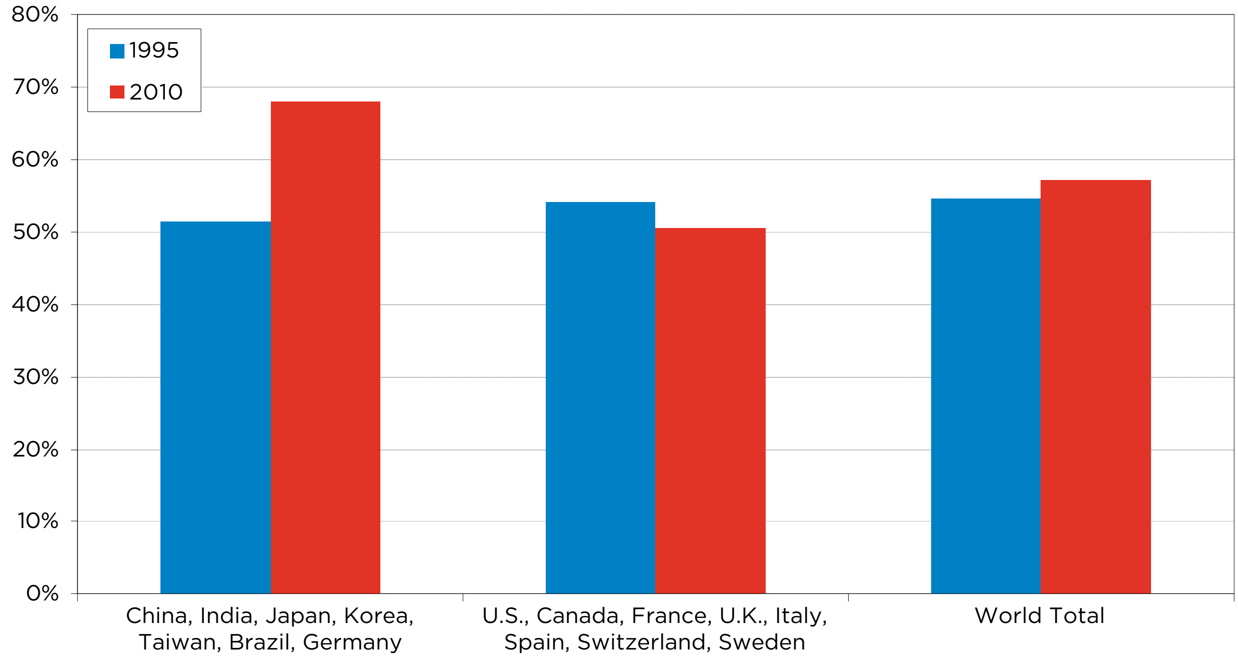
Even a modest decline in consumer spending growth in developed economies like the U.S. and Europe can help trigger a significant downdraft in the level of demand from suppliers and, in turn, a serious downturn in the level of demand for "suppliers to suppliers."

Meanwhile, the development of global supply chains and the rise of several economies, such as Taiwan, Korea and China, as supplier economies, and others such as Canada, Australia and Brazil as commodity suppliers to those economies, leaves them highly vulnerable to the Bullwhip Effect.

Indeed, a look at industrial growth cycles in the countries examined earlier suggests a good degree of synchronization across all country pairs. Essentially, cycles in industrial growth are highly synchronized, and this synchronization is likely to broaden and deepen as global supply chain networks expand further.

But that's not all.

Early-stage Goods Share of Total Imports



Trade in intermediate goods now accounts for the bulk of total world trade – one recent study estimated it to be as high as 77% of overall trade – making it increasingly difficult for countries to decouple, especially for supplier economies deeply embedded in global supply chain networks, placing them at the mercy of final consumer demand in developed economies.

The past two decades have seen increased interdependence among world economies, especially with the export dependence of most major economies jumping during this period with the development and evolution of international sourcing and the creation and integration of global supply chains. In Korea and Taiwan, which have emerged as "suppliers to suppliers," exports are respectively about half and three-quarters of GDP.

This chart presents imports of intermediate and crude goods, also called early-stage goods (ESG), as a percentage of total goods imports in 1995 (blue bars) and 2010 (red bars). The world import share of ESG, already over 50% in 1995, has risen even further, approaching 60% in 2010. A closer look at the breakdown of individual-country import shares is quite instructive: China, India, Japan, Korea, Taiwan, Brazil and Germany (left bars) have all seen their shares of ESG imports rise from around 50% to almost 70%, with Germany and China registering the largest increases (note: increase in the German share was almost double that of China).

The rising export dependence of these economies, with growing involvement in global supply networks, makes it increasingly difficult for economies to decouple, especially for suppliers of early-stage goods that have embedded themselves *further up* the supply chain and farther away from the final consumer. This makes them highly vulnerable to the Bullwhip Effect and at the mercy of cyclical fluctuations in end-user demand growth. But these largely stem from developed economies, which have entered an era of more frequent recessions that involve larger fluctuations in consumer demand growth.

This adds up to the "yo-yo years" for growth in both the developed and developing economies.

Conclusions

- More frequent recessions
- Decoupling is a mirage
- "Yo-yo years" for both developing and developed economies

So cyclical ups and downs in asset prices are hardly going away.

This warns against a complacent buy-and-hold mentality. In fact, the world is a much more dangerous place than many appreciate, but there are still going to be opportunities for investors, as long as they consider the timing of cyclical risk.

Thank you.

Thank you.

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