Examining capitalism’s Achilles heel

Excessive credit growth and rising debt service costs make economies vulnerable to an abrupt correction. Neither of those conditions are apparent in developed economies today, but warning lights are flashing in the emerging world.

Back in 1989, the Nobel prize-winning economist James Tobin, described excess leverage and credit growth as the ‘Achilles heel of capitalism’: a point of acute vulnerability for the global economy and markets. In this edition of Fundamentals, LGIM Strategist Chris Jeffery focuses on that weakness in the world economy by investigating the global credit cycle.

Our analysis shows that the credit cycle operates at a slower tempo than the standard business cycle, producing infrequent but spectacular busts. It puts particular attention on early warning indicators of those costly events: namely the ‘credit gap’ and the debt service ratio. Neither signal is particularly concerning today for major developed markets, but there are clear warning signs in emerging markets (notably China).

THE BUSINESS CYCLE IS RELATIVELY EASY TO MEASURE AND UNDERSTAND...
Business cycles are relatively well understood economic phenomena with rhythms and regularities which tend to repeat through history. Economic expansions typically see simultaneous growth in employment, income, sales and production that endures for several years. Such expansions are interspersed by short-lived recessions as spending on capital and consumer durable goods collapses and unemployment rises.
As discussed in several previous editions of Fundamentals, such business cycle inflection points are critical factors in the evolution of asset prices. In particular, recessions are almost always characterised by rising defaults, faltering corporate earnings and declining equity prices.

... BUT THE CREDIT CYCLE IS MORE DIFFICULT TO GRAPPLE WITH

However, overlaid over the waxing and waning of the business cycle is a harder-to-spot financial (or credit) cycle. In highly stylised terms, the credit cycle captures the fluctuations in the appetite for and provision of credit over time. Those fluctuations can amplify normal business cycles into the more destructive boom and bust cycles seen in 2008/9. During periods of credit expansion, rising debt levels allow greater spending on capital and consumer goods and permit investment in a range of assets. During periods of credit contraction, households and corporates are forced to cut spending to make debt repayments and incentivised to rapidly pay down debt over time. Those that can’t are pushed into bankruptcy, triggering chains of default.

The credit cycle typically operates at a lower frequency to the standard business cycle and credit busts are typically much more severe than ‘normal’ recessions.

Jorda et al (2012) provide a comprehensive study across 14 advanced economies over 140 years of data. Figure 1 and 2 summarise some of the results of that work.

The average business cycle runs for about eight years, compared to the average credit cycle which runs for roughly four times as long (figure 1). Typical recessions see a 1.5% drop in GDP per capita followed by a quick recovery; credit busts see an average drop in GDP per capita of 3% followed by a more drawn-out recovery process (figure 2).

MAPPING THE CREDIT CYCLE

The credit cycle sounds like an intuitively appealing concept. However, the difficulties in mapping that cycle through time are revealed by looking at the data. The Bank for International Settlements (BIS) provides the most comprehensive global dataset which, importantly, covers both loans provided by banks and debt financing via the bond markets\(^2\).

Figure 3 shows the global credit-to-GDP ratio since the early 1950s. The most striking thing is that private credit has risen steadily as a share of global GDP from less than 40% in the early 1950s to more than 140% today. There is less of an apparent cycle and more of a structural trend.

An increase in private credit to GDP is not necessarily a bad thing. Corporate credit facilitates investment; mortgage financing facilities house purchases; trade finance facilities exports. From that perspective, the steady increase over time is simply consistent with financial liberalisation and financial deepening.

However, a more bearish interpretation is that the world has gone on an out-of-control credit binge for several decades. Under that world view, vulnerabilities to a credit downturn are now more acute than ever before: avoiding capitalism’s Achilles heel has become a Herculean task.

How can we think about these two competing descriptions of the steady rise in credit penetration?

In our view, worries about debt cannot be as blunt as “debt is high relative to history”. That has been true in every single decade since WW2. Equally, nor should they be
as blasé as “debt has always been rising”. That would imply that debt is never a problem.

Ben Bennett, LGIM’s Head of Credit Strategy, argued in a recent edition of Fixed Income Compass, that it is important to focus on the productivity (or lack thereof) of assets associated with the debt build-up\(^3\). A related focus is on the pace of credit creation and the burden of debt on corporate and household cashflows.

**FOCUS ON THE PACE OF CREDIT CREATION**

We can have a reasonable argument about whether the level of debt is a serious problem, but there can be little debate that a rapid pace of debt accumulation is dangerous. When credit shoots higher, it implies that due diligence on potential debtors is unlikely to have been particularly thorough and that debt has been used to finance investment projects of dubious merit. Decisions made in haste are often regretted at leisure.

With that in mind, the split between emerging and developed markets in the pace of recent credit accumulation is revealing (figure 4). In developed markets, the private sector has been deleveraging steadily for the last five years. This process has been led by households in the US, UK and parts of Europe paying down mortgage debt. In emerging markets, the last five years have seen a massive increase in private sector debt driven by the debt-fuelled housing and infrastructure boom in China.

Following Drehmann and Juselius (2014)\(^4\), we can transform measures of credit/GDP into the ‘credit gap’: defined as the deviation of credit/GDP from its recent trend. Spikes in credit/GDP of more than 5% above its prevailing trend have been a clear early warning indicator of trouble ahead. Figure 5 looks at these measures for the emerging and developed market aggregates. The EM spike in 1997 served as a timely warning of the Asian financial crisis; the DM spike in 2007/08 was a forerunner to the global financial crisis.

The emerging market credit gap has been in the danger zone persistently since 2009. This does not necessarily suggest that a crash is around the corner, but it clearly highlights the increasing fragility of a growth model built on debt accumulation.

**FOCUS ON THE CASHFLOW IMPACT OF CREDIT**

A large credit gap, consistent with recent explosive growth in debt, is a good indicator of an underlying problem. However, for the credit burden to be transformed from a chronic problem to an acute crisis, we typically need to see a detrimental impact on corporate and household cashflows.

Such a ‘cash crunch’ can develop due to any exogenous factors which prompt creditors to decide not to roll over their exposure as debt falls due. However, it can also develop due to any endogenous increase in debt service ratios.

Debt service ratios (DSRs) are measures of ‘income gearing’: the proportion of income devoted to meeting the claims of debtholders. Debt service ratios are driven by the interaction of interest rates payable by the private sector, debt maturities, and the amount of debt outstanding. Declining debt maturities, increasing rates or increasing debt all drive the DSR higher. An increase in the debt service ratio for either households or corporates implies that the burden of meeting debt repayments is starting to put the squeeze on other forms of expenditure. It also increases the likelihood of debtors failing to make good on their obligations.

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Figure 3. Global private credit to GDP

![Figure 3. Global private credit to GDP](image)

Source: BIS, IMF, Macrobond & LGIM

Figure 4. EM vs. DM credit accumulation

![Figure 4. EM vs. DM credit accumulation](image)

Source: BIS, IMF, Macrobond & LGIM
In major developed markets, debt service ratios have trended down since 2009. Ultra-low official interest rates have fed into low effective interest rates for the private sector, debt maturities have been term out in response to market conditions, and the debt burden has steadily decreased. In contrast, relatively high inflation has kept interest rates fairly high in emerging markets and the explosion in debt outstanding has pushed DSRs to worrying levels. Figure 6, adapted from the BIS Quarterly Review from March 2015, summarises the vulnerabilities across the major developed and emerging markets. There are few, if any, warning lights flashing across the G7, on those metrics. However, a much more concerning picture is apparent across emerging markets. China has an uncomfortably large credit gap and an uncomfortably high DSR today. Brazil and Turkey have both seen a worrying build-up in private sector credit over recent years and look vulnerable to a sudden increase in interest rates. CAUTION IN EMERGING MARKETS Downturns in the credit cycle have typically generated recessions that are deeper and longer than those seen in normal business cycles. It is therefore sensible to pay particular attention to indicators of credit excesses and vulnerabilities.

The private sector in developed markets has deleveraged steadily in recent years. However, the opposite is true in major emerging markets. The ‘credit gap’ (i.e. the deviation of credit/GDP from its recent trend) is high, and debt service ratios are at risk of spiking higher on any increase in interest rates.

If excessive leverage and credit growth is the Achilles heel of capitalism, then developed markets investors may feel comfortable in sandals but those with large emerging market exposure are well advised to consider protective footwear.

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2The private non-financial sector includes non-financial corporations, household and non-profit institutions serving households (i.e. charities). See BIS for details: http://www.bis.org/statistics/credtopriv.htm


5http://www.bis.org/publ/qtrpdf/r_qt1503b.htm. The credit gap score is amber/red when the credit-to-GDP ratio is more than 2%/10% of GDP above its trend. The debt service ratio score is amber/red when DSRs are more than 4%/6% above their long-run average.
Market overview:

Chinese challenges

With China’s economic slowdown intensifying and an agreement reached in Greece, the focus of investor concerns shifted as the summer wore on. What began in June as a relatively contained fall in local Chinese equity markets morphed into something altogether more global as China took the decision to devalue its currency. Commodity prices slumped, with both oil and copper falling to new post financial crisis lows, while emerging market assets succumbed to growing investor nervousness. Even major global equity markets, having proved resilient for much of the summer, dropped sharply in late August. Credit markets were also weak, weighed down by high levels of corporate issuance. Meanwhile, safe haven demand returned and yields on major government bonds fell back from their early summer highs.

UK

Global outperformance continues

The UK economy showed further signs of strength over the summer. Productivity levels picked up markedly, more than compensating for a slight increase in overall unemployment rates. The combination of rising wages and subdued inflation provided a particularly favourable backdrop for the UK consumer, and contributed to a rise in overall retail sales. July’s government finances added to the positive picture, with the UK Treasury announcing its first summer surplus for three years following a sharp rise in tax receipts. As a result, sterling remained resilient, although the international nature of the FTSE meant that UK-listed stocks did not escape the rise in global risk aversion.

US

Market volatility clouds Fed policy

Investor expectations were for the Federal Reserve to hike interest rates in September as recently as mid-August. However, a return of global growth fears resulted in a sharp reappraisal of views and pushed back the likely date of any monetary tightening. From an economic perspective, the picture in the US remained broadly positive over the summer, with lower prices at the pump feeding through into higher disposable incomes. The US housing market remained buoyant, with household formation increasing and rental rates rising. Overall consumer price levels also rose slightly. In terms of US equity prices, markets moved sideways for much of the summer, before falling sharply in late August as investor fears over China spread.

Source: Bloomberg L.P. chart shows price index performance in local currency terms.
**EUROPE**

**Greece reaches an agreement**

The Greek crisis reached a crescendo early in July following a referendum vote to reject the creditors’ bailout package. However, this was quickly followed by capitulation from Greece’s political leaders, who chose to accept more austerity and avoid a potentially catastrophic exit from the euro zone. Peripheral bonds and equity markets rebounded in response. From an economic standpoint there were some positive signs, with European manufacturing surveys pointing to a modest expansion in activity levels. Individual country economic sentiment surveys also painted a broadly positive picture, led by Germany and Spain. In addition, retail sales remained robust, with low inflation and an increase in bank lending providing a favourable backdrop for European consumers.

**ASIA PACIFIC/EMEA**

**Growth fears take centre stage**

China’s economic woes and the government’s decision to devalue the yuan created a ripple effect across Asia. Major exporters to China such as Taiwan, Korea and Vietnam suffered, as did Australia, given the country’s particular sensitivity to falling iron ore prices. Chinese economic data readings painted a mixed picture, with weak manufacturing figures being balanced by a rise in house prices in most provinces. Emerging market currencies and risk assets also fell across the board with investors assessing the implications of sharply lower commodity prices and weaker prospects for global growth.

**JAPAN**

**Economic progress stalls**

The rebound in Japanese growth following Prime Minister Shinzo Abe’s huge stimulus programme suffered a setback over the summer. A reduction in demand from China was compounded by poor domestic weather conditions and government data covering the second quarter of the year pointed to a sharp contraction in economic activity levels. A drop in most Asian currencies relative to the yen also put pressure on Japan’s export-centric economy. Recent price rises lost momentum, prompting investors to anticipate increased government stimulus in the months ahead, which in turn led domestic stock markets to outperform from a global perspective.

**FIXED INCOME**

**Government paper back in vogue**

As global growth fears increased, so did the demand for safe haven assets. Core government bond markets were the primary beneficiaries of this, with UK gilt, US treasury and German bund prices all rising sharply, particularly towards the end of August. A second factor behind the rally in government bonds was a change in expectations surrounding the timing of the first interest rate rises in the US and UK. Given the sharp rise in risk asset volatility levels across the globe, investors effectively discounted the possibility of a rate hike in either country during 2015, and government bond yields fell accordingly.

**US issuance weighs on credit markets**

July saw unseasonably high issuance of corporate bonds in the US. Firms continued to offer deals in large volumes, taking advantage of historically low interest rates to issue debt and boost shareholder returns by buying back their own equity. This led US credit markets to underperform over the summer, although all corporate bond markets weakened as global risk aversion rose. European credit was a relative outperformer following the agreement between Greece and its creditors, while more volatile areas of the fixed income universe such as high yield bonds and emerging market debt underperformed.

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*Figure 2. 10-year government bond yields*
**Snapshot:**

**Manic miners**

Sharp falls in commodity prices over the past year have ignited market concerns over the Chinese economy, which is not surprising given that China’s investment boom drove commodity demand over the past decade. A smooth transition from investment to consumption would hurt commodity demand, let alone a credit-crunch induced slump.

We looked at the oil sector in January (Beyond Goldilocks) and concluded that the collapse in oil prices was driven by excessive supply rather than demand. That conclusion still holds. Oil supply has accelerated over the past year while demand continues to grow. We still see parallels with 1985/86 when Saudi Arabia cut prices to take on non-OPEC producers.

What about metal prices? They have fallen sharply over the past year – by 1.5 standard deviations. Not as much as energy prices (2¼ standard deviations) but close to the 1¾ standard deviation appreciation in the US dollar (inverted in Figure 1). You can see that historically there is a very close correlation between the dollar and commodity prices. The causality is unclear. Because commodities are priced in dollars, if the dollar weakens, producers might want to raise their dollar prices because any goods they want to import from Europe and Japan would be more expensive. In other words, commodities should be priced in a global exchange rate. But we find the sensitivity of commodity prices to the dollar is too large for that pure price-translation effect.

**Figure 1. Energy and metal prices are both correlated with the US$**

As well as the dollar, our models find pure demand and supply variables affect metal prices. In particular, we look at the growth and acceleration of world industrial production and estimates of global metal supply and Australian mining capacity. Figure 2 shows that metal supplies have grown rapidly since 2012, but slowed over the past year. Demand has also slowed, but only to an average pace. So it’s unclear these variables have driven the recent slump in prices.

Falling metal prices could signal weaker production growth ahead. This would be driven by investment, given that global consumer confidence has risen since oil prices peaked. But metal prices might also be unduly affected by a stronger dollar. The blame might also lie with lower oil prices as they reduce the cost of extracting and transporting metals.

**Figure 2. Global industrial production has only slowed modestly**

Source: Macrobond, LGIM estimates
UK forecast:

Keeping it on the level

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Legal & General Investment Management

| 0.10 | 1.30 | 2.50 | 2.30 | 2.35 | 2.70 | 0.50 | 1.00 | n/a | n/a | n/a | n/a |

Source: Bloomberg L.P and LGIM estimates

*Forecasts for end of Q2 2016
**Forecast for end of 2016

For many months, there has been a broad expectation that the Federal Reserve would be the first major central bank to put up interest rates. A strong recovery and a central bank committed to rate ‘normalisation’ fed this expectation – something that helped the US dollar strengthen in the second half of 2014 against a range of currencies.

But through 2015, the likelihood of a Fed increase has fallen substantially. We could categorise this change as one driven by hearts and minds. On a fundamental basis, pushing back rate hikes when data releases have generally been softer is entirely rational. On a sentiment basis, we think that the recent sell-off in many markets makes imminent rate hikes less likely as the Fed has continually shown that it doesn’t want to spook markets.

The Bank of England is less constrained. When the Fed raises rates, the world watches and thinks about the consequences. When the BoE does the same, it’s more of a side issue unless you live in the UK and have a mortgage. For Governor Mark Carney and the rest of the MPC, there is still no rush to raise rates though. UK growth is solid, and the expectations for growth this year and next are far from spectacular.

More importantly, inflation remains low. At current levels, inflation is in letter-writing territory (the MPC has to write to the Chancellor explaining a deviation of more than one percentage point from its 2% target). The recent low inflation figures have been driven in large part by falling energy prices: with Brent back below $50 per barrel, energy price effects will help keep a lid on inflation in the near term and could have second-round effects on wage settlements next year. The MPC is therefore watching wage, productivity and import price data closely. It’s noticeable that wage growth has remained resilient in recent months, allaying some of the MPC’s fears.

Forward curves show that the market is not expecting a first rate increase until quite a lot later in the year. However the MPC continues to see inflation higher than target in three years’ time, despite effectively including a Q1 2016 rate rise in that inflation forecast. For now, the MPC seems happy to wait and see what happens in the UK economy and with potential sources of volatility such as China and Greece. But markets may be overly complacent that this state of affairs will continue.

The forecasts above are taken from Bloomberg L.P. and represent the views of between 20–40 different market participants (depending on the economic variable). The ‘high’ and ‘low’ figures shown above represent the highest/lowest single forecast from the sample. The median number takes the middle estimate from the entire sample.

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