

## The Outlook for Countercyclical Macroprudential Policy

- 1 In 1909, Albert Einstein received his first honorary doctorate from the University of Geneva. In 1905, in his mid-twenties, Einstein published four papers which ushered out the Newtonian age of physics and changed forever our view of the Universe in which we live.
- 2 It is an interesting experiment to think what Einstein might have accomplished had he chosen the world of economic policy rather than physics. Would he have brought to our world the same brilliant simplicity and achieved the same lasting change in our understanding?

3 Economic policy of course is rather different to physics even in central banks. We may aspire to the same rigour, the same evidential base, the same level of proof. And we may apply many of the mathematical tools. But our world is more indeterminate and shot through with the vagaries of human behaviour. As policy makers, we have on a daily basis to take decisions on the basis of both imperfect information and imperfect understanding.

4 The subject I want to talk about today, the credit cycle and how policy makers charged with financial stability should take it into account, is a very good example of this world. The concept itself is a difficult one. History suggests that there are periods in which credit in the economy builds up and periods in which it declines – often after an explosive turning point. But these are not I suspect something a physicist would be prepared to accept as proven to be cyclical.

5 And though they are associated with the economic cycle (which also, I suspect, would be thought of as unproven in the world of physics), the relationship between the two is unclear and much disputed. The build-up of credit in the economy is not always associated with higher growth nor does it always match the economic cycle. The long build-up of credit in the UK economy between 2000-2007 – from 125% to 170% of GDP – does not seem to have much affected economic growth which was little more than its long-run average.

6 We do know, however, that a build-up of credit that ends explosively can trigger a rapid reversal – a spiral of ‘deleveraging’ – that drives the real economy into a very deep decline, more severe and more persistent than the usual business cycle. Not only is this a lesson from the empirical literature. GDP in the UK fell around 6% in the crisis and the recovery since has been slower than our recovery from the 1930s recession.

- 7 Policy makers in the UK have spent much of last 8 years trying to halt and reverse headwinds to the recovery, including from disorderly deleveraging. But, together with their counterparts in other jurisdictions, they have also spent these years designing and implementing reforms to prevent a recurrence of such an episode.
  
- 8 Some of these have been to broaden and reinforce the underlying, the non-varying framework of regulation to make both financial firms and the financial system more resilient. Some of these reforms, however, have been to create the institutions, the macroprudential authorities such as the Financial Policy Committee (FPC) of the Bank of England, charged with assessing time-varying risk in the financial system and to give those institutions the tools to address such risks.

9     Much of the FPC's focus over the first four years of its existence has been reinforcing the underlying regulatory framework. While there remains much work to be done, the design of the main elements of the framework – addressing capital, liquidity, too big to fail – is essentially completed. We are now increasingly moving into the implementation stage. As the UK economy continues to expand, and as monetary policy normalises – which we expect to be limited and gradual – we will more and more need to think about the time-varying element of our mandate, how the associated credit cycle is developing and whether and how we apply our reforms to address this.

## Aggregate credit

- 10 After a very deep recession and slow recovery, the UK economy regained its pre-crisis level of output in the middle of 2013 and has since been expanding steadily. It has now been growing around its average historic rate for 11 quarters. Our forecast is for it to continue to expand at around these levels for the next few years, driven by private domestic demand.
- 11 Credit conditions clearly played an important part in the recovery and expansion of the economy so far. Indeed, the lift off of the economy around the middle of 2013 was, I think, due in part to the easing of credit conditions as a result of the Funding for Lending Scheme. I would also note that this easing happened at the time that the interim FPC actually raised the amount of capital in the banking system – to the accompaniment of some dire warnings about what would happen to credit and growth.

12 Looking forward, credit conditions also play an important role in the prospects for the UK economy. In the Monetary Policy Committee's forecast, accommodative credit conditions alongside rising pay support the private domestic demand that drives economic growth at a rate around historic rates of 2.6%. In my own view, it looks as if we have entered into a more normal phase of the credit cycle. For the macroprudential authority the question is how we should establish where we are in the credit cycle and assess what risks it might engender? As I said at the outset, the credit cycle is a useful concept but you cannot measure it directly nor calibrate it easily.

13 The credit to GDP ratio is obviously a good starting place. For the UK that is now around 140%, 35 percentage points lower than in 2009. But is that a good number in macroprudential terms? The virtues of credit – facilitating consumption smoothing, house purchase, investment and risk management mean that more credit is not always bad. And the credit intensity of an economy can increase as intermediation becomes more efficient. But at 140% of GDP it is high by historic standards and higher than the G7 average.

14 One useful leading indicator of financial crises in the past has been the credit-to-GDP gap – that is, the gap between the credit-to-GDP ratio at a given point in time and its trend. For the UK that gap now stands at minus 25%. Does that suggest that credit in the economy is 25% below where it should be? The problem of course is that the credit-to-GDP gap measures the stock of credit in the economy relative to an historic average. For the UK, that average includes a sustained build-up of private non-financial credit from 115% of GDP in 1989 to 175% of GDP in 2009.

15 For this reason we have not attached too great a weight on the credit-to-GDP gap to date. Looking at the flows rather than the stocks, private non-financial sector credit growth has begun to increase but is growing slowly in historical terms at around 2.5%. Of course, it is worth emphasising again that history is not something I necessarily want to repeat. Private non-financial sector credit grew by an average of 10% a year in the 20 year period before the crisis.

16 Looked at through another lens, the level of indebtedness, the aggregate debt to income level of UK households is around 135%, some way below its crisis level of 160%. It dropped sharply after the crisis and has hovered around its current level for the last few years. But though it is below its pre-crisis level, it is again high by historical standards; average household debt to income between 1990 and 2006 was 110%. It also remains high by international standards; household debt to income is around 85% in Germany, 110% in the United States and 120% in Spain.

17 Putting all of these high-level aggregate indicators together, the level of credit in the economy is beginning to grow again. It is not at pre-crisis levels and indeed looks below averages that include the long build-up of credit in the economy before the crisis. But if you look further back, it is high by historical standards. And it is high by international standards.

18 The high-level picture, of course, can only tell you so much. It is clear that important though they are, these high-level indicators cannot be linked mechanically to the assessment of risk or to action to address it. To build a fuller picture of how credit is affecting the level of risk in the financial system, it is necessary to drill down into the sectoral components of credit and their counterparts in the economy.

## **Household credit**

- 19 The largest component of bank credit in the UK economy is of course lending to households and within that the great bulk, around 90%, is secured on dwellings. Mortgage lending is the single largest asset class on lenders' balance sheets and stock of lending secured on dwellings is around 70% of GDP. Net secured lending to households is rising at nearly 3% - the highest rate since the end of 2009.
- 20 Mortgage rates in the UK are now at very low levels – average quoted rates on two-year (75% LTV) fixed-rate mortgages are below 2%. Some of this of course is because the Bank of England's official Bank Rate has been close to zero since 2009. But over the past three years, as banks' funding costs have reduced and as competition in the mortgage market has intensified, on average mortgage interest rates have fallen by 2 percentage points.

21 Unsecured lending to households is a much smaller proportion of credit; it accounts for only 12% of lending to households and around 10% of GDP. And the stock of consumer credit remains £30 billion below its peak in 2008. But it is growing at around 8% a year, much faster than secured lending. Again, this is significantly lower than pre-crisis – annual growth in unsecured lending was around 12% in the decade before the crisis. But it has picked up quickly and advertised rates on some products are close to historical lows. Much of the increase has been non-credit card unsecured loans such as personal loans and car finance – the majority of car finance is provided by non-banks.

22 And, not surprisingly, alongside the pick-up in secured lending and lower mortgage rates there has been an increase in the growth rate of house prices and a pick-up in housing market activity. After a lull in 2014, house prices are now growing at just under 6% a year – more than twice the rate of earnings growth. Mortgage approvals for house purchase have increased by 10% over the year to an average of 69,000.

23 I do not think that the role of the macroprudential authority should be to control asset prices including house prices. But increases in house prices and housing market activity can give rise to macroprudential concerns. If they are debt financed this can in turn lead to vulnerabilities in bank balance sheets, excessive increases in aggregate debt to income ratios or adverse changes in the distribution of debt. It was this concern that led the FPC in June 2014 to limit the flow of high debt to income mortgages; those limits have not been reached but, as the housing market begins to heat up again it is prudent that they remain in place.

24 The key development in the housing market however has been the rise of mortgage lending to 'buy to let' purchasers – ie landlords – rather than to owner occupiers. The private rental sector in the UK has been growing rapidly over the past 15 years partly due to structural reasons. The stock of mortgage lending for buy to let has increased from £65bn to £200bn over the last decade. And it is growing quickly now, by around 9% a year. Buy to let now represents 16% of the overall mortgage stock and accounted for 80% of net lending over the past year.

25 Buy to let mortgages pose different risks to owner-occupied mortgages. Buy to let mortgages are typically interest-only, so loan to value reduces more slowly than for owner occupiers. New owner-occupied mortgages are now almost entirely amortising. There is normally a larger initial equity cushion as buy to let mortgages in the UK are typically at lower loan to value ratios at origination than loans to owner occupiers.

26 It is not clear how buy to let investors will behave when interest rates go up or if house price growth moderates. The greater initial equity in buy to let may mean that investors are more resilient to small falls in house prices and higher servicing costs than owner occupiers. But they may prove more vulnerable to larger falls in house prices and increases in rates that stretch their rental cover. The majority of buy to let investors in the UK are small landlords; 78% of landlords have only one rental property and the majority of buy-to-let landlords are lower rate taxpayers. It is not in my view at all impossible that sharp movements in prices and a loss of confidence in future capital appreciation, in combination with interest rate increases, could cause a substantial number of buy to let landlords to seek to exit the market. This could put material downward pressure on house prices. Though buy to let investors are very different to owner occupiers, there is in the end only one housing stock and housing market in the UK. So the risk is that they could amplify an adverse shock to the housing market.

27 Rapid growth in any type of debt financed activity should always lead a macroprudential regulator to have a closer look. At present there does not appear to have been a general fall in lending standards. Indeed, a number of lenders have tightened their interest coverage ratio criteria over the last 12 months. But we should in my view at the least be monitoring activity and underwriting standards in this market closely and carefully.

## **Corporate credit**

28 In contrast to household lending and the housing market, lending to corporates remains more subdued though it is recovering. Bond issuance has accounted for most of the recent increase in debt. In the two years to June 2015, UK PNFCs increased their level of borrowing from capital markets by £22.9bn and reduced their borrowing from banks by £1.4bn. Overall, UK PNFC's net debt is still some 30% below its 2009 peak. The stock of lending to SMEs, which had been declining for over five years, now seems to have stabilised, though it is some way from growing in line with the economy.

- 29 The commercial real estate (CRE) component of credit growth in the UK has often been a source of vulnerability. UK banks have suffered large losses on CRE portfolios in most of our severe recessions and the post crisis recession was no exception.
- 30 On the face of it the UK CRE market is simmering. Transactions reached a record high of £81 billion in the 12 months to June this year. Prices have risen by 10% over the same period. As prices rise, average yields are deteriorating and are now around 2005 levels.

31 The credit element of the story, however, which is most relevant from a macroprudential perspective, has been much less pronounced than in past episodes, CRE activity has been financed more with equity than debt; the share of equity financing of CRE investment increased from about a third pre crisis to three quarters in the years following the crisis. And particularly in London, much has been financed by foreign flows which reached £40 billion last year. But leverage has started to creep back up in the past year or so as we have seen the return of more leveraged investors.

32 That is not to say that there is no macroprudential interest in the UK CRE market at the moment. A rapid fall in CRE values could affect the UK economy through other channels. About 60% of lending to SMEs and smaller corporates is secured on property collateral so a fall in values could well constrain investment. And there are important initiatives in train to develop a database of CRE debt and to explore the use of ‘through the cycle’ valuations<sup>1</sup>.

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<sup>1</sup> See Brazier, A (2015) 'Nurturing resilience to the financial cycle' available at <http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech850.pdf>

33 In my view, the overall picture of the credit cycle in the UK suggests that it is entering into a more normal phase. Credit terms remain easy for both households and corporates and credit is readily available. At an aggregate level, credit in the economy is growing below pre-crisis levels though to me that might well be a misleading metric. Aggregate indebtedness is considerably below pre-crisis levels though it remains high. At a more granular level, credit is growing fastest in the areas of unsecured lending to consumers and lending to buy to let housing investors. The stock of credit in each of these areas is reasonably material at around 10% of GDP. But it is a relatively small component of the overall stock of credit. While we are seeing competition between lenders pushing down on rates, particularly in the mortgage market, we have not yet seen evidence of a general deterioration in underwriting standards.

## **Countercyclical macroprudential policy**

- 34 As we move forward in the credit cycle, the FPC will need to consider whether and how risks are building in the financial system and how they should be addressed. This is of course already a regular and important element of the FPC's discussions. But my guess is that it will become even more so in the next phase of the cycle.
- 35 With that in mind I want to turn now from the conjunctural assessment of credit in the UK to what may look like a more theoretical question but one that is going to be increasingly important to us – what is the objective and the framework for time-varying macroprudential policy?

36 Here I think one can distinguish a number of different strategies. The first is not to attempt time-varying macroprudential policy at all. The second is to set policy to aim to maintain a constant degree of resilience relative to risk. And the third is to use policy actively to lean against the credit cycle. I want to look at these three approaches for the core and riskiest part of the financial system – leveraged banking – and in particular the use of countercyclical capital buffers for banks.

37 I have some sympathy for the ‘don’t do it at all’ approach.

While central banks have, throughout their history, tried to take some account of risks building up in the financial system, explicit and transparent macroprudential authorities like the FPC with mandates and objectives distinct from monetary policy and macroeconomic management are a new development. We have little experience in advanced economies with complex financial systems of operating regulatory policy in a way which varies with the credit cycle. As I pointed out at the outset, the credit cycle can be an even more elusive and difficult to track animal than its cousin the business cycle.

38 And in some jurisdictions where, unlike in the UK,

macroprudential policy is done by a number of regulators, with distinct and differing mandates and without clear single authority over the use of macroprudential tools. In those circumstances, time-varying policy may be more difficult to operate.

39 For those reasons, it can be argued that rather than try to operate time-varying policy, the better course is to ensure that the regulatory framework is set to prevent the build-up of risk over the credit cycle and, to the extent it cannot achieve this, to have enough spare resilience in the system to cope with all eventualities.

40 I see however two drawbacks to this approach. The first is that because policy cannot be varied through time, to achieve financial stability it probably has to be set at all times at a higher level. That may not only be inefficient in economic terms. It also means the macroprudential authority has no framework and tools for loosening regulatory policy to prevent the self-reinforcing deleveraging spirals that kick in in the downturn of the cycle. Second, it is difficult to know ex ante how strong the next credit cycle is going to be and so where to set underlying policy.

41 The FPC faced some of these issues in the design of the UK's 'leverage ratio' capital framework which the Committee agreed last year. Our conclusion, informed by an assessment of the economic costs and benefits, was that provided we had the ability to vary leverage-related capital requirements countercyclically, in the same way that we could vary the risk-weighted capital requirements, we could set the minimum leverage requirement at a lower point.

42 The second approach is to try to maintain the overall resilience of the system over the cycle. The underlying regulatory framework is of course intended to cope with a wide range of risks. It is intended to keep such risks firmly located in the tail of the distribution. But the distribution of risks changes through the cycle. One approach to time-varying macroprudential policy is to aim to ensure that tail risks do not increase with the credit cycle – ie that the resilience of the system is maintained over time and does not change with the distribution of risks.

- 43 Stress testing of banks can play an important part in making an assessment of resilience through the cycle. Stress tests provide an assessment of whether the capital buffers held by banks are sufficient to absorb losses in a stress. So they are well suited to guide the calibration of countercyclical capital buffers.
- 44 The Bank of England is developing a countercyclical approach to annual stress testing of banks. Rather than applying a constant level of stress from year to year, the severity of the stress would vary with the cycle. It would increase as risks build up and decrease after they have abated or crystallised. The parameters of the scenario – falls in GDP, asset prices, employment etc – would be most severe during periods of exuberance when credit and asset prices were growing quickly and the financial system was least concerned with risk. The parameters would be less severe when exuberance had evaporated and prices had corrected, which is often the time when the system is most risk averse.

45 We aim to develop this approach over the next three years, starting with the 2016 stress test. Along with a regular assessment of data and indicators it will be a key part of a forward looking, data driven approach to setting the UK's countercyclical capital buffer for banks. We have set out more details in a recent Bank paper.<sup>2</sup>

46 As always, one issue will be assessing the costs and benefits through time in so far as that is practicable. Another is where to set the countercyclical capital buffer in normal parts of the cycle to enable it to be relaxed at times of stress. A third will be how far in advance one needs to act. If you thought that the impact of changes in the CCB happened with a lag, that there were benefits in a CCB above zero that could be relaxed, that risks were building or that there were benefits to moving policy gradually, these would point to moving earlier rather than later in the cycle.

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<sup>2</sup> See 'The Bank of England's approach to stress testing the UK banking system', October 2015, available at <http://www.bankofengland.co.uk/financialstability/Documents/stresstesting/2015/approach.pdf>.

47 This approach is intended to maintain the resilience of the system over the cycle. But, clearly, requiring banks to hold more capital will very probably also have a dampening effect, leaning against the cycle. The third approach to time varying macroprudential policy I mentioned would take this further. It would set policy with the explicit objective of pushing back on the cycle until the level and perhaps the composition of credit was judged to be more acceptable in risk terms.

48 This of course would be a bigger 'call' for the macroprudential authority than targeting resilience. Again it requires a very careful assessment of costs and benefits. I do not think the macroprudential policy framework should 'start' there; the starting point should be maintaining resilience.

49 But given the history and the objective of maintaining financial stability, I do not think that the macroprudential authority can foreswear making such calls when necessary. Indeed, the FPC has implicitly already done this in taking action on the flow of high loan to income mortgages. In taking this action, the FPC took a view on the risks if the distribution of mortgages shifted towards a large share of high loan to income loans. We intended to limit the risks arising from increasing household indebtedness and the macroeconomic vulnerabilities this creates. The action was forward looking – limits were set at a level above the proportion of such mortgages being issued at the time and indeed have not subsequently been reached.

50 And that brings me to my final point. The literature and theory of macroprudential policy is as yet relatively under-developed and concentrates on prudential regulation of banks and their role in the credit cycle. But it is apparent from my short time on the FPC that the time-varying risks we need to address go wider than the banking system. The action I have just described on housing is one example. The growing attention being paid to potential risks from market as opposed to bank-based finance is another. The time-varying macroprudential policy maker needs to look wider than the banking system.

## Conclusion

- 51 To conclude. While the credit cycle remains hard to identify with the precision of a physicist, a key element of macroprudential policy is try to assess it and to address the risks that build up in the financial system over the cycle. This is becoming a more pertinent issue in the UK as we move into a more normal phase of the credit cycle; credit is beginning to grow again albeit at rates below the pre-crisis peaks. And within the aggregate numbers some sectors are growing relatively quickly.
- 52 Time-varying macroprudential policy is hard and there is much new ground to be broken. But there is a benefit in ensuring that the financial system maintains resilience as the distribution of systemic risks moves through the cycle and where necessary trying to ensure that such risks do not build up unchecked.

53 I am conscious that I have spent the last half hour talking about the role of policy through time. Einstein, of course, taught us that time was in the end indistinguishable from the dimensions of space: "for us physicists believe the separation between past, present and future is only an illusion, although a convincing one". There is I am afraid only so much brilliant simplicity an economic policy maker can take. So I fear that for the immediate future at least we will need to maintain that convincing and indeed convenient illusion and set policy accordingly.