Jon Cunliffe: Macroprudential policy – from Tiberius to Crockett and beyond

Speech by Sir Jon Cunliffe, Deputy Governor for Financial Stability of the Bank of England, at TheCityUK, London, 28 July 2015.

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Historians still argue about the exact causes of the financial crash of AD 33 that rocked the Roman Empire. The commentators of the day did not unfortunately have, let alone record, the vast amounts of data that we have become used to today. But in a world still painfully extricating itself from the crash of 2008, the key features look eerily familiar, as a number of modern day commentators have observed. An extension of credit across the empire, a sudden deleveraging, debtors failing and bank closures in a number of Roman provinces, the total drying up of liquidity in the financial system and widespread panic.

The remedies look familiar too. The Emperor Tiberius was not able to rely on a modern independent central bank with the ability to print money to staunch the crisis. But notwithstanding that immense shortcoming, Tiberius took effective action, injecting into the system a huge amount of liquidity stored in coin in his treasury, setting interest rates at zero for a three year period – an early example of forward guidance – and doubling loan to value requirements for property loans. He also executed those he thought most responsible: though some might advocate that today, I think in that respect at least we have moved on from AD 33.

Systemic financial crises, as this episode shows, are not new. The invention of credit and the development of banking and financial systems have been key to the improvement of human living standards throughout history. But they bring with them the boom and bust extremes of the credit cycle, driven by greed and fear, and the risk of systemic crises which can badly damage the real economy.

As financial systems have developed and spread, public authorities, from Tiberius' administration to the Financial Policy Committee (FPC) of the modern Bank of England today, have had to adapt both to deal with financial crises when they occur and to try to prevent them occurring in the first place. It has often been an unequal struggle.

I want today to review a little of that history from the Bank of England's perspective. I will draw out the development of what – following the great financial crisis of 2008–9 – has become known as "macroprudential" policy. Put simply, this is the regulation and supervision of the financial system as a whole rather than just the "micro" regulation and supervision of the firms and the markets that go to make up the system.

In doing so, I want to review the progress of macroprudential policy and the FPC of the Bank, which is the UK macroprudential authority. Have we built a more resilient financial system and one that can provide the financial stability that is essential for sustainable economic growth?

I hope I will be able to show that while many of the problems we face and the tools we have are familiar, the development of macroprudential policy and the FPC since the crisis is not just old wine in new bottles. There is new and important wine here also.

The Bank and financial stability

The Bank of England is not, of course, a newcomer to this scene. In the centuries following the Bank's creation in 1694, the British financial system mushroomed as the industrial revolution took hold and the empire grew. As the financial system grew, so did the incidence of crises and panics that required the Bank – often reluctantly – to intervene. In the financial crisis of 1825 – a crisis attributed by many to low interest rates, abundant liquidity and a

search for yield that drove investors into emerging market bonds – England was said by one observer to be "within 24 hours of a state of barter". To get liquidity into the system and restore confidence, the Bank according to one of its directors "lent money by every possible means and in modes we had never adopted before".

Again, much of this sounds eerily familiar. The Bank since its inception has been at the centre of the response to every financial crisis in the UK. And since its inception, the Bank has played a role in shaping the development of the financial sector in the UK and using its influence to promote financial stability. For much of its history, that role was not one of statutory regulation and supervision. The Bank exercised its influence behind the scenes on the small club of actors that dominated the financial system. Indeed, the UK came rather late to the idea that banks and financial firms needed to be regulated by law rather than steered by the eyebrows of the Governor of the Bank of England.

The Macmillan Committee (1931), which inquired into financial policy in the wake of the Wall Street Crash, did not advocate statutory regulation. Rather it endorsed the informal role of the Bank in guiding the banking sector, commenting that "financial policy can only be carried into effect by those whose business it is".

30 years, a Great Depression and a world war later, the 1959 Report of the Radcliffe inquiry into the monetary system concluded similarly that "it is on this relationship, and on the mutual trust and confidence that are the basis of the relationship, rather than on formal power…that the Bank has relied in seeking to inform itself about and influence the policies of the clearing banks".

In the immediate post war period it was not necessary to do a great deal to promote financial stability or the supervision of financial firms. In the post war economy with closed capital and current accounts the banking system was tightly controlled by government. It was an instrument of macroeconomic management and of financial repression in order to repay the national debt. As the Chairman of Lloyds Bank at the time described it, "It was like driving a powerful car at twenty miles an hour. The banks were anaesthetised – it was a kind of dream life".

But, from the beginning of the 1970s, as the financial sector was increasingly liberalised and globalised, the old risks returned. It became apparent by 1979 that the Governor's eyebrows needed to be bolstered with statutory regulation and supervision of banks. As capital accounts were increasingly opened up and cross border competition grew, the need for a more level playing field between internationally active banks became more apparent. Liberalisation led to a shift towards more explicit prudential standards starting with the 1975 Basel Concordat – the forerunner of today's Basel standards.

The focus was very much on promoting the safety and soundness of individual firms. Much less attention was given to the fact that the risks in the financial system are greater than the sum of the risks in its parts. Central banks were no strangers to such systemic risks. Indeed, they were recognised at the time – the forerunner of today's Basel Committee identified them and even coined the term "macro-prudential" risks to distinguish and separate them from "micro-prudential" or firm specific risks that were the subject of the Basel Accords. They then concluded it was for someone else to address macroprudential risk.

The trail of macroprudential policy goes rather cold at this point. The prevailing view seems to have been that if the regulation and supervision of individual firms was right and if central banks had the necessary Tiberius-like instruments to intervene in crises, sufficient stability could be ensured. It was the realisation in the last years of the last century that an ever more liberalised and globalised financial sector was generating ever more difficult financial crises that led to the reawakening of interest in macroprudential policy. This was led by Andrew Crockett, then the General Manager of the Bank for International Settlements and a former Executive Director of the Bank of England.

The development of macroprudential policy

As set out by Crockett and others[1], the basic principles of macroprudential policy are that:

- assuring the stability of individual financial firms will not by definition assure the stability of the overall financial system; indeed there will be times in which what makes good sense for a specific firm makes bad sense for the system as a whole;
- the underlying prudential standards – the reserves of capital and liquid assets that individual banks and other firms need to hold to enable them to withstand bad times – should be set not simply in relation to the risks in the individual firm, but also to reflect the importance of the firm to the financial system and the cost to the economy as a whole if the system fails;
- the financial system does not simply respond to the economic cycle, growing as the economy grows and vice versa. It also feeds on its own exuberance in good times and on its fear in bad times which can in turn drive the real economy to extremes, as we have witnessed in recent years. The underlying causes of this phenomenon are interactions, feedback loops and amplifiers that exist within the financial system that can act as turbo chargers in both directions;
- the aim of macroprudential authorities should be to prevent these dynamics from driving up financial stability risks in good times and driving the system down in bad times. That requires not only setting the overall framework of standards and regulation in the right place to address systemic risk; it requires also adjusting the framework in response to the buildup of risk as the turbo chargers inherent in the financial system begin to kick in; and
- a recognition that what distinguishes "macroprudential" from "microprudential" and from "macroeconomic" is its objective of financial system stability rather than the instruments it deploys. Macroprudential authorities like the FPC use many of the same instruments as microprudential regulators such as bank capital standards. And in the very final resort, monetary policy may need to be used to counter financial stability risk. But the objective of ensuring the financial system as a whole is stable is different to the objective of promoting the safety and soundness of individual firms or that inflation is kept at target.

With the benefit of hindsight, policymakers and regulators should all have paid a great deal more attention to these ideas in the early years of the century while the great financial crisis was in the making. In fact, it is difficult to find any newspaper reference at all to macroprudential policy in those years. The opposite is true today. Last year there were over 350 newspaper references in the UK alone. The great financial crisis validated these ideas for many policymakers world-wide.

It was clear with hindsight that we had not only mis-estimated the risks in individual institutions. More importantly, we had not really understood the risks created by the dynamics of the system including from outside the core banking system, namely the amplifiers and feedback mechanisms that drove the system down in the same way that they had driven it up. Or the devastating effect all of this would have not just on the financial system but on the broader economy.

The dynamics of the system itself create risks and costs that markets and firms do not – and cannot – take fully into account in their decisions and their pricing. For example, in a financial crisis individual banks will try to cut lending – to deleverage – to preserve their funds. But if

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[1] See Crockett, A (2000) 'Marrying the micro- and macroprudential dimensions of financial stability, *BIS Speeches*, 21 September. Also, see Borio, C (2003) "Towards a macroprudential framework for financial supervision and regulation?", BIS Working Papers, No.128.

all banks do that then, as we saw, the economy will suffer which damages all banks. I suspect central banks over the centuries had an intuitive understanding of these risks. But they were never so great before the development of a truly global, liberalised financial sector in a digital age. And they were never clearly identified but instead were wrapped up with many other risks in the historically opaque world of the central banker.

One key outcome of the crisis was the recognition that in the modern global economy, there is a need for international standards to cover macroprudential as well as microprudential risk. These have been developed and coordinated by the Financial Stability Board, which was itself created in response to the crisis.

And there is likewise a need for national public authorities that are clearly responsible for managing these risks. Macroprudential bodies, in various shapes and sizes, have been set up in around 40 jurisdictions. In the UK, the FPC of the Bank of England was formally established in 2013 having existed in an interim form since 2011.

How well have we done?

Seven years on from the crisis and four years from the establishment of the FPC in the UK it is fair to ask: how well have we done so far? Have we put in place the machinery – the institutions and the rules – to manage macroprudential risk? Have we, as some argue with increasing volume, gone too far and achieved stability at the expense of growth?

The first area to look at is whether the framework of regulation has now been set to address systemic as well as firm specific risks. The new framework has largely been set by international standards, and for the UK by the incorporation of those standards in EU law. The Basel reforms to bank capital and liquidity standards have very materially strengthened the protection of capital and liquidity reserves that individual banks hold to meet bad times. Regulatory capital requirements are set to be up to ten times higher than before the crisis for the most systemically important institutions and banks will face internationally agreed liquidity ratios for the first time. In the UK and other jurisdictions, leverage ratios have been introduced in advance of an international standard that is in train and structural separation measures are being implemented. These reforms have strengthened the position of individual firms and in doing so the resilience of the system as a whole.

But the Basel and other reforms have also recognised explicitly that these levels of protection need to be set not only to protect investors in individual firms but also to protect all of us, the whole economy, from the damage to the system that can be done when systemic firms get into trouble.

Banks that are globally systemic are now required to hold more resources – equity capital – that can absorb losses if and when things go wrong. The extra protection is graded by the systemic importance of the firm. The aim is that these systemically important players can continue to operate within the system, serving the real economy, even in bad states of the world.

And if, despite all the extra protection they do fail, we need to ensure they can be "resolved" – by which I mean revived or sold or broken up or wound down – in a way that does the least damage to the economy and that does not require taxpayer bailouts. We are now close to the agreement of an international standard requiring systemic banks to hold a set amount of debt in a form that can be readily "bailed-in" to recapitalise and stabilise the firm if it fails, so that it can be resolved over time without doing wider damage.

Macroprudential policy is about more than banks. Other parts of the financial system can drive up booms and amplify busts. Derivatives traded between financial firms acted as an amplifier of the crisis when their values changed very quickly and the firms did not have the resources to compensate each other for the change. We are now shifting bilaterally traded derivatives onto central counterparties where there is better identification and protection against the risks of sudden changes in value. Similarly, minimum standards on lending

against securities, another amplifier in the crisis, are being introduced to reduce the impact on firms when the value of those securities changes quickly.

Seven years on from the crisis, the contours of the new regulatory framework are clear and in the main agreed; we are well into the implementation of many of its main standards. The standards not only reinforce the safety and soundness of individual firms. In contrast to the development of prudential framework before 2007, we now endeavour to address specifically the risks generated by the financial system as a whole. In other words, the framework is not just stronger. It is macroprudential in a way that was not true at all before the crisis.

Of course, knowing where to set the detailed prudential standards that make up the framework is as much an art as a science. It is one thing to know that before the crisis systemic banks were not holding enough capital to absorb losses and keep functioning – one has only to look at the failures, the bailouts and the impact on the real economy. It is quite another to determine how much capital a systemic bank needs to hold to be able to continue to operate through a crisis. As with most things in life, policymakers have looked to the past – for example to the losses suffered by banks and others in this and in previous crises – to guide the future. But we know that it is a useful but an imperfect guide. To paraphrase Mark Twain, history only rhymes, it does not repeat itself.

That brings me to the second main element of macroprudential policy. The standing framework can only go so far in addressing risk. The role of macroprudential authorities, like the FPC, is not just to ensure the framework addresses systemic risk. It is to monitor and identify the buildup of risk and the development of new types of risk. And to take action to address them.

Here I think macroprudential policy is at a much earlier stage of development. In part this is probably because having crystallised in the crisis, the risks in the core banking system have been muted in the aftermath. And because the development of the new framework of regulation has consumed so much of policymaker and regulator energy. The FPC has certainly spent much of its short life so far on the development and implementation of the new framework of regulation.

But it is also due to the fact that there is still a great variety of views as to how macroprudential policy should identify and respond to changing risks in the financial system. There is no consensus about which risks it should care about and which instruments are most effective in addressing them. There is not yet the extensive body of practice and of theoretical and empirical research that exists, for example, in the world of monetary policy.

As I mentioned, there are now macroprudential authorities in around 40 jurisdictions. But there are very different views among policymakers as to what time-varying, countercyclical macroprudential should and could do. Some believe macroprudential policy should actively tighten regulation to lean heavily against the powerful dynamics of the credit cycle as the amplifiers in the financial system drive up credit booms and risks. A more restrained approach would be to use countercyclical policy not so much to lean against the cycle but to increase the resilience of the system further by putting in more protection as risks build up in exuberant times. Others remain unconvinced that there is much of a role for time-varying macroprudential policy at all and argue that it is better to bake all the necessary resilience into a very strong standing framework of standards and rules. There is certainly no easy way to estimate where we are in the credit cycle and the impact of macroprudential tools – while there are guides there are no simple rules.

Against that background, I want to highlight some of the steps the FPC has taken in this area.

First, using macroprudential policy to address changing risks depends upon a clear assessment of risks and of the action necessary to address them. The institutional incentives will inevitably tend to drive macroprudential authorities to the identification of all possible – and if we are not careful, some impossible – risks. Failure to spot a risk is worse than

spotting one too many. The outcome of this dynamic, however, can too easily be a lack of clarity and focus: an assessment that identifies everything but actually identifies nothing.

With this in mind, the FPC has changed the structure and content of its bi-annual *Financial Stability Report (FSR).* The FSR aims to set out publicly the FPC's view on risks, its assessment of the resilience of the system and to explain its policy. In its new form, the FSR will focus on no more than a handful of risks, the ones the Committee judges are the most important and the most prominent.[2] And it will then set out what, given the level of resilience in the system, the Committee thinks should be done about those risks. The intention is that such a shorter, more focused report will create a discipline for the FPC's thinking, help to communicate what the FPC is truly concerned about and make it easier for others to hold us to account.

Second, the Committee is developing the use of stress testing to assess macroprudential as well as microprudential risk. Last year, the FPC, together with the PRA ran the first ever stress test of the UK banking sector as a whole. The aim was to test not just the resilience of individual banks but what happened to the system if all of the major banks faced a severe but plausible stress scenario at the same time. We are conducting a similar test this year.

The Committee intends to set out later this year how we want to develop macroprudential stress testing to help us respond to the ever changing level of risks in the financial system. At present we are using stress testing to help us judge how resilient the banking system is to different severely adverse, but plausible, scenarios. A development of this approach would be to use stress testing more countercyclically. Rather than testing every year against a scenario of constant severity, the severity of the test, and the resilience banks need to pass it, would be greater in boom times when credit and risk is building up in the financial system and it has further to fall and then reduced in weaker periods when there is less risk in the system and the economy needs the banking system to maintain lending.

Third, macroprudential risk goes wider than the banking system. Risks can arise in other parts of the financial system and in the real economy. A year ago, the UK housing market was clearly developing significant momentum. Prices were growing much faster than incomes. Borrowers were increasingly driven to borrow a greater amount relative to their annual income. The amount of such new mortgages at high loan to income (LTI) ratios – borrowers borrowing over 4 times their annual income – had exceeded its pre-crisis peak.

The risk the Committee saw was that if the number of high LTI mortgages continued to grow, there would be increasing numbers of highly indebted households very vulnerable to a change in economic circumstances. This would increase both macroeconomic volatility and systemic risk. The Committee came to the view that this was a macroprudential risk that needed to be insured against. It recommended the introduction of limits on the proportion of new mortgages at high LTI ratios.

The momentum in the housing market cooled and the limits have not so far been reached. It is impossible to say how much this was a result of the Committee's action; a number of other important factors were also in play. But it is an example of the FPC's approach to adjusting policy to respond to changing risks. And it is also an example of the Committee taking a broad view of financial stability that goes wider than direct risks to the banking system.

A further example of how macroprudential risk can develop outside the banking system is the lending and investment that happens through financial markets rather than through banks. To take one example, the global asset management sector has grown by 60% since 2003 and is now a similar size to the global commercial banking system. This will probably be one

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[2] The July 2015 FSR identified the following major risks facing the UK financial system: the global environment notably Greece and China; market liquidity; UK current account deficit; UK housing market; misconduct; and cyber risk.

of the new frontiers of macro (and micro) prudential regulation. The FPC is exploring whether there are significant risks from changes in these markets and in particular how asset managers manage liquidity to meet redemptions in times of stress. There is also work underway on this internationally.

Macroprudential policy is still a work in development. Over the past few years much of the FPC's work has been learning by doing. As we learn, we will have to set out clearly and publicly the development of our overall policy framework – how resilient we believe the system needs to be, how we think about macroprudential risk, what risks we believe fall into the domain of macroprudential and how we will use our policy instruments. As part of this, the Committee intends to set out by the end of the year our view on the adequacy of the overall capital framework for banks, now that the main post crisis reforms have been set.

Have we gone too far?

Financial crises are unruly affairs. The great crisis of 2008–9 was certainly no exception. Risks crystallised in unexpected ways and moved between parts of the financial system that we had not appreciated were connected. A large number of regulatory reforms were launched to address the many and dangerous

fault-lines that the crisis exposed.

It is only now, as we move through the implementation of these reforms, that we can start to see the whole picture of how they work together in practice. Inevitably, as the new framework starts to bite, the question is asked whether the reforms, as they interact in practice, produce "unintended consequences" that are worse than the risks they are trying to reduce. And, more fundamentally, with economic activity still below pre-crisis trends, whether we have gone too far and whether regulation is now preventing the financial system from doing its job to support growth in the real economy?

I imagine this debate will be widespread internationally and will last for some time. In the light of how and why macroprudential policy has developed and where we now are, I would make the following observations.

First, we should accept that the complex, interlocking set of reforms of recent years will need fine tuning and adjustment as they are implemented. There will be issues we have to revisit. Indeed, this process is already beginning. The Bank of England and the ECB have together launched a review of the treatment of securitisation. The FPC and the international community is looking at the issue of liquidity in financial markets which many argue has been adversely affected by regulation. Following up the Fair and Effective Markets Review, the Bank of England will host an Open Forum to take stock of the reform agenda in financial markets. And the European Commission has just launched its review of the EU regulation on bank capital.

Indeed, given the depth and complexity of the financial crisis and the corresponding depth and complexity of the reforms, we should expect rather than be surprised that we will need to refine and adjust some of the regulatory reforms.

Second, however, while we may need to look at how the key elements of the reforms work in practice and interact, we should not change our overall appetite for the risk of financial instability or seek to trade off between financial stability and growth.

Indeed, the more time that elapses since the crisis the more we learn about its cost, not just in financial terms but in terms of lost economic activity and, perhaps even more important, loss of growth potential.

The financial system plays a crucial role in a modern economy directing resources to where they can be most productive and can generate the greatest return. When the dynamics of the system itself distort incentives and judgments of risk and return, there can be a huge misallocation of resources in the economy. And when the bubble bursts and the economy

has to adjust, a damaged financial system cannot guide the necessary reallocation of resources – indeed, as we have witnessed, it can slow it down.

The overall economic cost is well known. As we now know, the impact of the crisis on UK productivity growth as well as economic growth has been devastating. Seven years on and output per person has only just reached its pre-crisis level. We have not even recovered the pre-crisis rate of annual growth in productivity of around 2.3% and the level of productivity of our economy is around 15% lower than it would have been on pre-crisis trends. There is now a growing body of evidence on the very damaging impact of financial crises on the productive capacity of economies.

Third, we should not imagine that there is some recent halcyon world of banks supporting the real economy to which we can quickly return if the regulatory straitjacket is loosened. The system was badly distorted in the long run up to the crisis. The post crisis world requires a major adjustment in bank business models. This is not some unintended consequence of overzealous regulation. It is a necessary, if painful adjustment to a new reality.

Some numbers from the UK illustrate this point starkly. In the long upswing of the credit cycle, the stock of domestic lending by UK banks in the UK grew enormously from 95% in 1997 to 170% of GDP in 2008. The stock of non-property lending to companies as a proportion of GDP, however, grew only modestly from 19% in 1997 to 23% in 2008. Meanwhile, mortgage lending increased from 45% to 70% of GDP; lending to real estate tripled from 5% to 15% of GDP; and lending to the UK non-bank financial sector – including institutions like hedge funds, securities dealers and insurance companies – shot up from 25% of GDP to 60%. And these numbers do not count the explosion in UK-owned banks' overseas exposures which more than quadrupled between the end of the 1990s and 2008.[3]

In other words the massive increase in the stock of lending – an increase of £1.7 trillion in absolute terms – did not lead to very much of an increase in productive investment at all. Of course there are benefits in enabling people to buy their homes. And much of the financing of financial markets almost certainly came back to productive investment in the form of market investments in business. But as we discovered in the crisis much of the lending appears to have financed the increase in house prices and a large part of the market investment was simply misallocated and lost.[4]

Nor did this increase in lending drive a commensurate increase in economic growth in this particular credit cycle. Over the period 2000–2007 GDP growth averaged little more than its long-run average of around 2.8%. In fact, business investment over the period averaged just 1.3% a year and it appears that most of this was related to commercial real estate.

Conclusion

The financial system can be a powerful engine for growth and prosperity. But its ability to generate systemic crises means it can also be a powerful destroyer of those as well. This has been true throughout history but never more so than for today's highly complex, globalised and digitalised financial system.

We should not therefore see economic growth, or productivity as somehow opposed to effective financial regulation. Strong sustainable growth requires not only a strong and vibrant financial system; it requires the controls and safety buffers to ensure that the

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3 For more information on UK-owned banks' overseas exposures see Broadbent, B (2012) 'Deleveraging', speech at Market News International, 15 March.

4 The Chancellor has recently asked the Governor of the Bank of England, working with HM Treasury, to initiate research to create better measurement of 'finance for productive investment' covering all asset classes and all stages of finance, with a view to publishing the data on a regular basis. See "Fixing the foundations: creating a more prosperous nation", HM Treasury, July 2015.

dynamics of the system do not generate periods of illusory growth and prosperity followed by periods of destruction of the same.

The financial system has come a long way since the time of Emperor Tiberius. While we have relearned some familiar lessons in recent years, we have also learned some new ones. We have had to develop a new regulatory framework, macroprudential institutions like the FPC and new policy approaches.

Over the next few years we will certainly need to refine all of these. The implementation of the detailed reforms will inevitably throw up unforeseen effects in particular places and where it is justified we will need to revisit issues. But we should be careful about talking about turning back the overall regulatory dial or trying to trade off the risk of financial instability for short term growth.