BANK OF ENGLAND

Speech

Monetary Policy From End To End: Define, Decide, Deliver

Speech given by

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End to End Monetary Policy

This is my first speech in my new role as Deputy Governor for Markets and Banking, and as a member of the Monetary Policy Committee (MPC). It is a pleasure to be giving it in the newest part of King's College London and in my position as a visiting professor here at King's. And I'm delighted it's the 25th Strand Group event, showing how this flagship series of policy relevant events has already become well established.

One of the key differences between my old and my new role is the level of accountability. As Chief Economic Advisor to HM Treasury for the past 10 years, as would be expected under the civil service code, I was generally responsible for giving evidence-based advice to ministers who were ultimately accountable for their decisions to parliament and the public. That is very different in my new role in which I am directly accountable to parliament and public for decisions taken as a member of the MPC, Financial Policy Committee (FPC) and Prudential Regulation Committee (PRC). I also have a direct set of prescribed responsibilities under the Bank's application to itself of the Senior Managers Regime – a framework developed to improve accountability at the top of financial services firms.

As a key part of that accountability, over the coming years I look forward to giving many talks and speeches such as this one to set out the thinking behind decisions and their delivery across the full range of my and the Bank's responsibilities. The Bank has quite rightly placed emphasis on the role of communication as a policy tool in its Vision 2020 strategy; describing our work to as diverse a range of people as possible.

Of course I start this new role at an interesting point in time. It is nearly 17 months since the UK voted to leave the EU, and just over 16 months until that decision takes effect in March 2019. In the period since the referendum we have learned that while Brexit was at one level a binary decision, there are many potential outcomes, and paths to those outcomes. Perhaps reflecting this multidimensionality, uncertainty about Brexit seems to be increasing rather than diminishing over time (Slide 1). In the Bank's Decision Maker Panel Survey (which is run jointly with Nottingham University), the share of firms who placed Brexit among the top sources of uncertainty rose from 35% in a survey taken in September 2016 to 40% in August this year. While those who say it is not an important source of uncertainty fell from 23% to 13% over the same period.

Brexit has an important bearing on the Bank's pursuit of monetary and financial stability, and it is taking steps to help ensure the necessary adjustment is as smooth as it can be. The Prudential Regulation Authority is engaging proactively and intensively with banks and insurers to ensure their plans are robust to the full range of potential outcomes. The FPC is focussed on its statutory responsibility of identifying and monitoring and taking action to reduce risks. The MPC's focus has been on balancing the trade-off, as required by its remit, between the speed at which inflation returns to target, and the support that monetary policy provides to jobs and activity during the adjustment process. In the Markets and Banking areas of the Bank, for which I have direct responsibility, we are undertaking a series of initiatives which, although not directly related to Brexit,

will help ensure stability, improve effectiveness and enable innovation in key parts of the UK's financial system through this period of challenges and opportunities.

It is the work of the MPC and of the Markets and Banking areas that I would like to focus on today. In particular the role they play in 'end to end' monetary policy, which for the purposes of this lecture I will split into three phases: *Define, Decide, and Deliver.* Respectively, they refer to the clear specification of the objectives of monetary stability; the setting of policy appropriately to meet those objectives; and the implementation of monetary policy through the Bank's operations in financial markets.

Define

Let me start with Define. The Bank's responsibility for monetary stability dates back to at least the Bank Charter Act of 1844 when it was given a monopoly on issuing notes in England and Wales. In the intervening period the Bank's monetary policy objective has taken many different forms that have varied in their degree of formality, clarity and success – including the gold standard, membership of Bretton Woods, monetary targets and the Exchange Rate Mechanism.

For much of that period, the Bank's monetary stability aims lacked definition. As the Governor has recently noted[1], this changed with the Bank of England Act of 1998 which clarified – for the first time in three centuries – the Bank's responsibilities. The 'end' for monetary policy was defined as maintaining price stability (specified in subsequent Remits as the pursuit of a symmetric 2% CPI inflation target) and, subject to that, supporting the economic policy of the government including its objectives for growth and employment. The means for getting there is the independent setting of monetary policy by the MPC. This represented a major step forward for the clarity, accountability and efficiency of monetary policy, as assessed by the 2013 review of the monetary policy framework by the Treasury.

By de-politicising the short run trade-off between inflation and activity, this arrangement has provided the grounds for the most successful monetary policy regime for the UK thus far. The MPC's flexible inflation-targeting framework was further strengthened by the 2013 Treasury Review and the following Remit update which effectively 'completed the contract' by further specifying the relationship between the MPC's primary objective for price stability, and its secondary objective to support jobs and growth. Though, having overseen the 2013 Review, I must declare an interest in judging its contribution.

Since then, the Remit has explicitly acknowledged that, in exceptional circumstances shocks to the economy may be particularly large or the effects of shocks may persist over an extended period. In such a period the

[1] Carney M (2017), remarks given at a conference to mark 20 years of the MPC's operational independence, notes that Governor Eddie George once remarked that in the half century that followed the Bank's nationalisation in 1946 it "operated under legislation which, remarkably did not attempt to define our objectives or functions."

MPC must balance the trade-off between the speed with which inflation is brought back to the target and the consideration that should be placed on the variability of jobs and economic activity.

Of course we didn't have Brexit in mind when updating the Remit in 2013, nevertheless the Bank headed into the EU referendum last year with arguably the most clearly defined objective for monetary policy in its 323 year history. And it has been the foundation of the framework the MPC has used to set monetary policy since the referendum result. Although I only joined the Committee in September, the analytical approach in the framework is one that I fully sign up to. So I would like to spend a minute setting it out.

Fundamental to the way in which the MPC has reacted to Brexit is that monetary policy cannot prevent either the necessary adjustment – such as that implied by the movement of the exchange rate - as the UK moves towards its new international trading arrangements, or the weaker income growth that is likely to accompany it. These are real phenomena likely to play out over many years – exactly the kind of thing that monetary policy cannot affect, no matter how often it is asked by some commentators to do so.

What the MPC can do is support the economy during the adjustment process. But even in doing that the Committee has faced a trade-off between stabilising inflation on the one hand and output and employment on the other. I would note this is something the Committee was able to anticipate before the referendum, the minutes of the MPC's May 2016 meeting stating that "[t]he implications for the direction of monetary policy will depend on the relative magnitudes of the demand, supply and exchange rate effects." And my colleague Ben Broadbent has recently set out in more detail what this means in the particular context of Brexit.

True to this statement, the MPC has set monetary policy since the referendum on the basis of its assessment of how those effects are interacting. This is made difficult by the large, uncertain and sometimes offsetting implications of the decision to leave the EU. So it is not surprising that even though all Committee members sign up to the framework I have laid out, their individual assessment of the economic outlook has differed along the way.

Decide

Which brings me to the second phase of 'end to end' monetary policy: Decide. In the MPC's meeting at the start of this month, a majority of its members thought that the evolution of supply and demand was such that the margin of slack in the economy now seemed fairly limited, and that underlying inflationary pressures had shown some signs of picking up. As a result, they judged that this reduced the degree to which it was appropriate for the MPC to tolerate an extended period of above-target inflation, and that a small reduction in stimulus was warranted. Notwithstanding this 25bp increase, Bank Rate remains close to its lowest rate its 323 year history (Slide 2).

I wasn't in that majority. That was not because I disagree with the overall framework for setting monetary policy in this exceptional period, but rather because I have a somewhat different assessment of the economy.

By way of framing my own decision, let me give a few comparisons to how things might have turned out in the absence of Brexit, for which I will use the MPC's May 2016 forecast as a proxy (Slide 3). GDP growth in the year to 2017 Q2 (the latest quarter for which we have a full set of both expenditure and labour market data and the latest data available at the time of the November MPC decision) was 0.8pp weaker than the MPC's May 2016 forecast, within which business investment growth was a full 5.2pp lower. Despite the weakness in output, employment and hours have actually been stronger than expected, meaning productivity growth per hour was been 2.2pp weaker in the year to 2017Q2. Nominal wage growth was 1.5pp weaker than in the pre-Brexit forecast, which, coupled with the effects of the depreciation on inflation, meant real wage growth was 2.6pp weaker.

So, how does this nexus of data fit into my assessment of the economy? Let me start with demand, which is arguably the most straightforward to explain. Although the economy confounded the initial expectations embodied in usually-reliable surveys taken immediately after the referendum – which implied that growth was headed for negative territory - there is no doubt that demand has now slowed.

This can primarily be accounted for by a sharp slowdown in consumption growth, from 3.1% as recently as the middle of 2016 to 1.5% in the year to 2017Q2, the weakest four quarter growth since 2012. The primary driver of this weakness has been the weakness in real income, itself reflecting the 18% depreciation of sterling from its pre-referendum peak as financial market participants have reacted to the prospect of Brexit.

Working in the opposite direction, we have witnessed a rotation toward other components of demand. While this is a positive development, it hasn't been enough to offset an overall slowing in GDP growth.

- Business investment has picked up a little to grow at 2.5% in the last year, though this is weaker than the 3.9% growth on average across our G7 counterparts, and the strength of future investment implied by capital goods orders in the US and euro area (Slide 4). In addition to the Decision Maker Panel survey and findings of the the Bank's own Agents, a range of survey results suggest that Brexit related uncertainty is an important factor weighing on investment in the UK despite otherwise favourable conditions for capital expenditure (Slide 5).

- Relative to other components of demand, exports have benefited from sterling's depreciation and stronger than expected global demand. At the same time and not withstanding their role in increasingly integrated global value chains, growth in imports has been sluggish, meaning that net trade has provided support to GDP growth.

Taking all of these together leads me to conclude that, although the resilience of growth in the wake of the referendum has been welcome, the broad channels through which we would have expected demand to adjust to a vote to leave the EU are now operating. As a result, GDP growth has slowed from average quarterly rates of 0.7% in 2014 and 2015 to 0.4% more recently. For those of you who, like me, have had to assess and categorise past UK slowdowns as either U- or V-shaped, I consider what we are witnessing as more of a saucer-shaped slowdown and pretty unusual for that (Slide 6). Given the long horizon over which the effects of Brexit could play out, we are likely to be on the flat part of the saucer for some time – as embodied in the MPC's forecast for GDP growth which remains at 0.4% per quarter over the 3-year forecast horizon, conditional on households and companies basing their decisions on the expectation of a smooth adjustment to new trading arrangements.

If realised, that will leave the economy about 2% smaller by 2020 than the May 2016 MPC forecast would have implied. And that growth shortfall is in spite of the fact that global growth has strengthened more than expected in the May 2016 MPC forecast.

The biggest risk I see to that outlook for demand is around the resolution of the current uncertainty about our eventual trading arrangements and the path that will be followed to reach them. Were that uncertainty to be lifted, I can see a case for why UK whole economy demand could grow more strongly, more in line with, for example, recent manufacturing indicators. Equally, were uncertainty to persist at current levels or even increase further, I could see a case for demand growth, and in particular investment growth, being weaker.

The reaction of the supply side of the economy since the referendum is more open to interpretation and given the uncertainties is something informed people can have divergent views on. The combination of weak investment, strong growth in employment, weak wage growth and low productivity growth (Slide 7) lends itself to two potential explanations – and they are neither mutually exclusive nor exhaustive. In either case the sign of the response of key variables is the same, making it difficult to pick between them, but the implications for the outlook for spare capacity and inflation differ.

The first is that since the referendum there has already been a material hit to the supply side of the economy in the form of a reduction in Total Factor Productivity (TFP), which is the efficiency with which companies put their labour and capital inputs to use. This would reduce output per worker, and hence real wages. It would also reduce future profitability, thus deterring investment. A reduction in TFP would have a lasting effect on productivity and hence the supply side of the economy, reducing the rate at which it can grow without generating above-target inflation.

Like most economists I expect Brexit to have a negative impact on TFP for a variety of reasons, including the need to reallocate resources toward supplying new customers or new products, and the general effect of

reduced openness[2]. But these are effects that, like the effects of capital deepening on productivity, will tend to either build over the long run or only really take hold after our trading arrangements have changed. So, while they can be expected to have a material impact on productivity by the end of the MPC's forecast horizon, I'm not convinced they can fully account for the additional weakness in productivity we have already seen. It shrank by 0.2% in the year following the referendum compared to growth of 0.5% on average in the preceding seven years.

A second potential explanation for how the supply side data have evolved is that since the referendum workers have responded to uncertainties about the outlook by showing even more flexibility in their wage demands. People's willingness to accept lower real wages would encourage firms to hoard labour, and shift away from capital expenditure toward more labour input for a given unit of output. Such a further increase in labour market flexibility would imply that part of the recent renewed weakness in productivity growth is cyclical, meaning there is a bit more room for the economy to grow without generating above-target inflation in the medium term.

I attach some weight to the idea that workers have responded to the changing outlook by showing greater flexibility in their wage demands. This would be consistent with a trend I have observed throughout my career and in successive cycles in which peaks and troughs in unemployment have been lower in each cycle since the 1980s. Since the crisis, real wage flexibility has been particularly notable, and it may have intensified further since the referendum as the unemployment rate has fallen further to 4.3%. As supporting evidence I would point to the fact that the weakness in private sector real wage growth relative to the MPC's May 2016 forecast has been greater than would be required just to match the weakness in productivity growth[3], and that is in spite of the additional pressure on real income growth from higher import prices over the same period[4]. This may also be working alongside the level of uncertainty to encourage firms to meet output growth using labour rather than undertaking capital expenditure projects.

At the margin, the idea that workers are responding to Brexit by showing increased flexibility could mean that there is more room than headline measures of slack suggest for the economy to grow without generating above-target inflation in the medium term (Slide 8). Certainly, it would help explain why, despite unemployment being at its lowest level in 42 years, measures of domestically generated inflationary pressure generally remain below levels that would be consistent with inflation being at target in the medium term. That includes a wide range of measures, including unit wage costs, those derived from the Consumer Price Index, and those based on national accounts measures of value added.

In turn, the subdued nature of domestically generated inflation is evidence that the current elevated level of headline inflation is attributable to pressure arising from the pass through of the depreciation of sterling. In

[2] See Broadbent (2017) for a full discussion of these issues
[3] Private sector real wage growth, calculated by deflating nominal wage growth by output prices, was 1.8pp weaker in the year to 2017Q2 than expected at the time of the May 2016 forecast, while growth in productivity *per head* was 0.7pp weaker.
[4] For a full discussion of wage growth, see Cunliffe (2017)

judging the appropriate balance to be struck when faced with a trade-off between returning inflation sustainably to target and supporting jobs and activity, one must pay close attention to any sign that above target inflation is feeding through to 'second round' effects in domestic costs. So far that doesn't seem to be the case.

In summary, it is difficult to determine precisely why the supply side of the economy has behaved as it has in the period since the referendum. The weakness in real wage growth, and the subdued nature of domestically generated inflation mean I am not yet ready to discount the idea that labour market flexibility is continuing to intensify. If true it would mean there is a little more room than headline measures of slack suggest for the economy to grow without generating above-target inflation in the medium term. For that reason, in our November meeting I was willing to wait for more evidence on the evolution of wage and domestic cost growth before beginning to withdraw some monetary stimulus. So I voted for no change in Bank Rate.

Deliver

Once the decision is made, attention turns to the final phase of 'end to end' monetary policy: Deliver. A key part of being Deputy Governor for Markets and Banking is responsibility for delivering much of the Bank's monetary, and indeed financial stability, operations. That includes: implementing decisions; monitoring market developments; identifying and, where appropriate, addressing risks to resilience and effectiveness.

In many ways the November MPC decision was a historic change in policy – the first increase in Bank Rate in over a decade (Slide 9). I remember the previous increase in Bank Rate well as the July 2007 MPC meeting was the first I attended as the Treasury's representative. A lot else has happened in the intervening 10 years, but from an operational perspective it was a relatively straightforward change for the Markets area of the Bank to implement. Bank Rate, which is the rate paid on reserve accounts held at the Bank by 183 financial institutions, was changed immediately after the MPC's decision and used as the basis for calculating interest due for that day.

Because reserves held at the central bank are the ultimate liquid and risk-free asset in any currency, the rate paid on them serves as the reference point for all other overnight interest rates in the money market. As a result a range of key overnight market rates increased on the day of the MPC's decision including the Sterling Overnight Index Average (SONIA, a key benchmark for unsecured overnight borrowing and lending) and the Repurchase Overnight Index Average (RONIA, a key benchmark for overnight borrowing and lending secured against gilt collateral). In the period since the change in Bank Rate, both SONIA and RONIA have been on average 25bps higher than in the month preceding the decision (Slide 10).

But effective delivery extends well beyond mechanically changing parameters within our systems. The Bank's operations in money, gilt, corporate bond and foreign exchange markets, its operation of the Real Time Gross Settlement (RTGS) system, all supported by its comprehensive financial and operational risk

management framework, afford it a unique insight into the workings of the financial system. Markets and Banking staff are thus able to advise members of the MPC, FPC and PRC about key developments in monetary and financial conditions.

Our operations also leave us well placed to assess the resilience and effectiveness of markets and the infrastructure that underpin them. The Bank has always stood ready to use its convening powers or, where necessary, intervene directly in order to help ensure the smooth functioning of core sterling markets. But this has been given new impetus in recent years as initiatives such as the Open Forum and the Fair and Effective Markets Review made clear that the Bank considers scanning the horizon for emerging vulnerabilities as important as stepping in when risks have crystallised.

Working to monitor and improve resilience and effectiveness is something I consider to be a core part of delivering not only monetary, but also financial stability. And I believe the Bank's work in this area will play an important role in ensuring the UK has a resilient, effective and innovative financial system as it leaves the EU. There are two ongoing initiatives to enhance financial infrastructure that I would like to draw attention to today. Both demonstrate the Bank's willingness to define ourselves in terms of best practice of governance and transparency, and our ongoing commitment to working closely with end users of this infrastructure.

The first is the reform of the SONIA overnight interest rate benchmark. In April next year the Bank will take on end-to-end administration of this key market benchmark, which is also a critical input to the MPC and FPC's assessment of conditions in sterling money markets. The key outcome of the reforms will be to improve the sustainability and representativeness of this piece of infrastructure by using a broader dataset covering both brokered and bilateral transactions, collected as part of the Bank's Sterling Money Market data collection.

Following the implementation of SONIA reforms the Bank will publish an assessment of its compliance with IOSCO Principles for Financial Benchmarks, alongside an external assurance report. Consistent with those principles, a SONIA Oversight Committee comprising of a mix of Bank and independent members will provide scrutiny on all aspects of the benchmark.

A more robust SONIA provides markets with a credible alternative to sterling Libor as a key reference rate and benchmark. Indeed SONIA has recently been confirmed as the market's preferred alternative rate by the Sterling Risk Free Rate Working Group. That is a necessary step in ending the current over-reliance on Libor.

Developing alternatives to Libor and similar benchmarks and encouraging their use has been a key priority of the international financial community since the Financial Stability Board, chaired by the Governor, published its report on interest rate benchmark reform in 2014. But the importance of this work has grown as it has become apparent that transactions underlying Libor are at best scarce. Resulting concerns about the

medium-term sustainability of Libor, set out in a speech by Andrew Bailey in the summer, highlight the need for a transition away from Libor to alternative benchmarks.[5]

As we move to the next phase of benchmark reform work – a broad-based transition to SONIA – it is clear that active engagement will be needed from participants across all relevant sectors and markets. As a result, the Bank and FCA are currently finalising plans to broaden the mandate and membership of the Sterling Risk Free Rate Working Group.

The second ongoing initiative I would like to draw attention to is the renewal of RTGS - which is the means by which central bank reserves are transferred between banks big and small, and settles around £600bn of transactions per day. The world of payments is one which has undergone many changes in its long history – from the idea in the 1770s that a single central location (the Five Bells Tavern once of Lombard Street) should be nominated as a meeting point at which at which to settle obligations to the launch in 1996 of real time gross settlement in the UK. We are currently living through another period of innovation, as FinTech has enabled payments to be decoupled from traditional banking services.

The aim of the RTGS renewal programme is to deliver a more resilient, flexible and innovative sterling settlement system, and by doing so we will help ensure the UK remains a world-leader in payment systems. As well as providing a strong underpinning for monetary stability, RTGS will promote competition and strengthen financial stability. The programme will run over a period of years, but some key features have already been delivered including the opening up of access to RTGS to non-bank payment providers, who have been able to apply for accounts RTGS since July.

One particularly noteworthy milestone was reached last Monday, when the Bank began to provide the direct delivery of the High Value Payment System, CHAPS, the workings of which are shown in this Vision 2020 style graphic (Slide 11). This brought to an end the split of responsibilities between CHAPS Co, the private sector administrator of the scheme, and the Bank, which provides the underlying infrastructure in the form of the overall RTGS system. Although this split had its merits historically, the changing scale, nature and sophistication of cyber and other threats to the stability of payment systems mean there is a compelling financial stability case for being able to provide end-to-end risk management within one organisation.

In recent months the Bank has worked closely with the shareholders, users, management and staff of CHAPS Co to bring about a smooth and orderly transition and avoid any disruption to the service provided. On Monday last week, former CHAPS Co staff took their new seats in the Bank of England, and by 7am more than 22,000 transactions had been completed on the Bank's infrastructure with a value of £11bn. In the first week, approximately 862,000 transactions were completed, with a value of £1.5trn, including wholesale

[5] Bailey (2017)

interbank payments, mortgages, company invoices and much more. In short, it was business as usual for banks and their customers.

Like our administration of SONIA the combined RTGS and CHAPS service will benefit from best practice governance arrangements, including a new Board which will meet for the first time in December, chaired by me and with four independent members recruited through a competitive process. We will also continue to benefit from the voice of CHAPS users, through the establishment of a new Strategic Advisory Forum for senior industry representatives.

Conclusion

Let me recap on how I see end to end monetary policy. The well-defined objectives of monetary policy have provided a strong foundation on which the MPC can base its decisions over the course of the crucial period up to and beyond the UK's withdrawal from the EU.

But to be successful, monetary, and indeed financial stability, policy must be effectively delivered. That requires the efficient implementation of decisions. And it requires stable and effective core sterling markets and payments infrastructure.

The Bank has a long history of outstanding execution of decisions, of scanning the horizon for emerging vulnerabilities in markets, and of using its position to address them. In keeping with this history, these are things I will prioritise in my term as Deputy Governor for Markets and Banking.

Beyond Define, Decide, Deliver, there is of course 'Describe'. Improving our communications internally and externally is a key priority of the Bank's Vision 2020 strategy, because better communication will support our mission to deliver monetary and financial stability. A new focus of our communications is on schools. We started last week in Merseyside and over the next year Bank staff are visiting 200 schools covering 9% of the pupil population. But engaging with traditional stakeholders remains important, on which note let me take some of your questions.

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