

CENTRAL BANKS AND SLUGGISH GROWTH

The failure of monetary stimulus

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IN BRIEF

- Global central banks implemented conventional and unconventional monetary easing after the financial crisis. We assess its effectiveness in stimulating aggregate demand through six transmission mechanisms.
- Of these six mechanisms of transmission, the price effect reduces interest costs, encouraging borrowing and investment; the wealth effect boosts asset prices to create wealth and promote consumption; the currency effect reduces a currency's value, boosting exports and reducing imports; the income effect lowers income for savers and expenses for borrowers; the confidence effect impacts confidence in economic prospects; and the expectations effect discourages borrowing in anticipation of lower rates.
- We conclude that the price, wealth and currency effects of monetary stimulus are mostly positive and the income, confidence and expectations effects are mostly negative. In addition, the evolution of economies over time and a starting point of very low interest rates both tend to reduce the positive impacts of monetary stimulus and increase the negative impacts. These impacts also vary across regions, but generally we conclude that the net economic impact of monetary stimulus in today's global economy is, at best, low and, at worst, negative.
- We expect central bankers to take a different view, and believe they will consequently respond to future economic weakness with similar monetary stimulus tools. This is an important rationale for our developed economies forecast of slow growth, low inflation and low interest rates over the next 10 to 15 years.

INTRODUCTION

“The Failure of Monetary Stimulus” is a deliberately provocative title, highlighting both a dominant theme of recent economic history and a key driver of our long-term views. We should stress at the outset that we do not question the good intentions of central banks or their effectiveness as lenders of last resort in times of financial turbulence.

However, particularly since the financial crisis of 2008-09, most major central banks in developed countries have failed to raise inflation to their stated targets. In addition, while the global economy has expanded steadily, it has generally grown more slowly than in periods with less dramatic monetary stimulus. Finally, it appears that easy money has done a better job of boosting financial assets than the real economy—a benefit to investors but potentially at the cost of aggravating income inequality today and risking financial turmoil in the future.

To assess the efficacy of monetary stimulus, we review the recent conventional and extreme steps taken by the Federal Reserve (Fed), the European Central Bank (ECB), the Bank of Japan (BoJ) and the Bank of England (BoE), and analyze their effects through a framework of six transmission mechanisms.

We recognize that the view we espouse here is not widely accepted by central bankers. Consequently, we believe they will respond to future economic weakness with a similar array of monetary stimulus tools, which we expect to be no more effective than they have been in recent years. This is an important rationale for our developed economies forecast of slow growth, low inflation and low interest rates over the next 10 to 15 years.

POST-GLOBAL FINANCIAL CRISIS STIMULUS EFFORTS

Since the onset of the financial crisis, central banks have been more aggressive and imaginative in their attempts to stimulate economies than at any time in their histories. Each central bank cut rates effectively to zero, and in the case of the ECB and the BoJ, to negative levels (**Exhibit 1A**). As the scope for further rate cuts diminished, global central banks resorted to quantitative easing (QE), expanding their balance sheets by \$11.7 trillion (**Exhibit 1B**).¹ To support bank lending and liquidity, targeted longer-term refinancing operations (TLTROs) became a critical tool for the ECB starting in 2014, aiming to boost lending by extending cheap long-term credit to banks. The BoE introduced a similar scheme for the UK. Global central banks also employed “forward guidance,” an indication that they would not raise rates in the near term and in some cases until certain conditions were met. In each case, central banks hoped that a promise to maintain low short-term interest rates would result in lower long-term rates.

¹ Increase in assets at the Fed, ECB, BoE and BoJ from January 4, 2008, to June 30, 2019, using exchange rates on June 30 2019.

After the crisis, rates fell to near or even below zero and central banks significantly expanded their balance sheets

EXHIBIT 1A: SHORT-TERM RATES, 2007-19

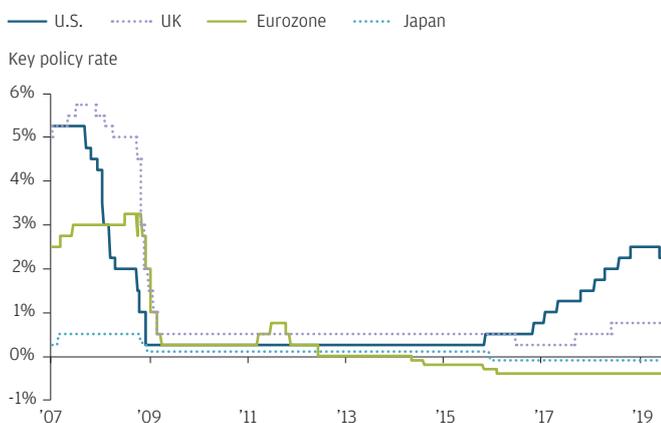
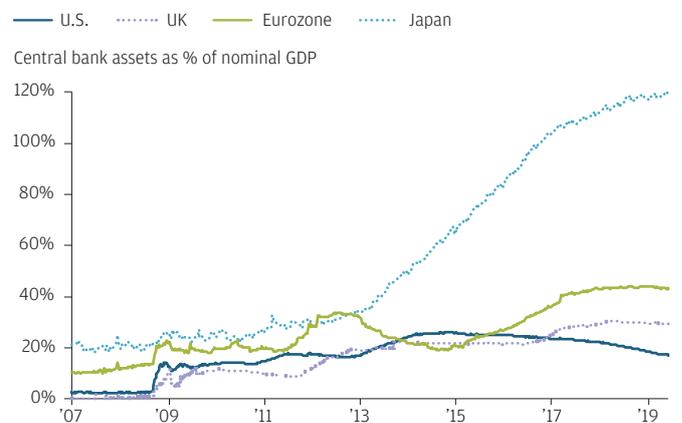


EXHIBIT 1B: CENTRAL BANK ASSETS AS % OF NOMINAL GDP, 2007-19



Source: Bank of England, Bank of Japan, European Central Bank, Federal Reserve (left), Bureau of Economic Analysis, Eurostat, Japanese Cabinet Office, Office for National Statistics (UK) (right), FactSet, J.P. Morgan Asset Management; data as of August 31, 2019 (left), June 30, 2019 (right).

A TRANSMISSION MECHANISM APPROACH TO ASSESSING THE IMPACT OF MONETARY STIMULUS

How successful have these measures been?

One approach to assessing success would examine real economic growth, unemployment and inflation in the wake of the global financial crisis. Historically, a severe recession has typically been followed by a strong bounce back in economic activity. However, across the developed world post-crisis growth has been mediocre and inflation has been surprisingly low, despite a relatively normal decline in unemployment. Yet this approach cannot clarify the effectiveness of monetary stimulus because other forces could have contributed to lackluster economic performance, including tepid fiscal stimulus and austerity in Europe and the UK, slower growth in the working-age population, regulatory tightening and the structural evolution of the economy itself. In addition, it is difficult to assess whether these forces simply slowed the economy, increasing the need for monetary stimulus, or actually undermined the effectiveness of the stimulus itself.

Another approach would be to use conventional, “black box” time-series econometric models. However, changes in interest rates impact economic agents through multiple transmission mechanisms that take time to play out, making their effects almost impossible to isolate, particularly when assessing both conventional and unconventional measures. Bluntly, we know of no way of torturing time-series data to get them to provide an accurate assessment of the impact of monetary stimulus on key economic variables.

However, an alternative approach opens up the black box and looks separately at each of the transmission mechanisms by which easy money should impact the economy, in either a positive or a negative way. Broadly speaking, these transmission mechanisms can be separated into six different channels:

- **THE PRICE EFFECT:** Lower long-term interest rates reduce the expected interest cost of servicing investment spending, inventory stockpiling, homebuying and consumer durable purchases. In theory, this should boost these areas of demand.
- **THE WEALTH EFFECT:** Lower interest rates should make income-producing assets more valuable, thus boosting asset prices and household wealth. Wealthier households should be more willing to spend more at any given level of income.
- **THE CURRENCY EFFECT:** Lower interest rates could make it less attractive for global investors to hold a national or regional currency, thus triggering a devaluation. This could increase exports and reduce imports, thereby boosting GDP.
- **THE INCOME EFFECT:** Households are generally net creditors, while corporations and governments are generally net debtors. Lower interest rates should thus reduce net interest income for households while increasing it for corporations and governments. To the extent that household spending responds more directly to net interest income than does corporate or government spending, lower interest rates may reduce aggregate demand.
- **THE CONFIDENCE EFFECT:** Central bank actions to stimulate the economy could be interpreted as a sign that the economy is in trouble, which could reduce confidence and thus spending among both households and businesses. On the other hand, if central banks are able to portray their actions as appropriate and preemptive, they could boost confidence.
- **THE EXPECTATIONS EFFECT:** In recent times, monetary stimulus has been doled out in a series of discrete moves. A move to cut rates will often foster speculation about further cuts. While this could lower long-term interest rates, it may also give economic agents a reason to hesitate to borrow money until rates have fallen further.

TRANSMISSION MECHANISMS IN PRACTICE

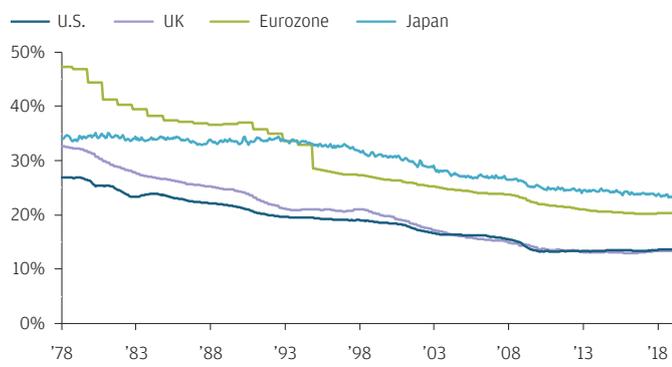
How have these effects played out across the U.S., eurozone, UK and Japan?

THE PRICE EFFECT: All else equal, lower interest rates should stimulate investment spending, homebuilding and consumer durable purchases by reducing the interest payments on these purchases. While this is generally true, the impact of the price effect on the economy can vary: first, over time; second, across economies; and third, at different levels of interest rates.

On the first issue, the importance of interest rate-sensitive sectors has diminished in recent years. This can be seen, for example, in the declining employment share of the interest rate-sensitive manufacturing and construction sectors across the developed world (**Exhibit 2**). This, on its own, should have reduced the positive price impacts of lower interest rates on aggregate demand.

The declining employment share of manufacturing and construction reflects the diminished importance of interest rate-sensitive sectors

EXHIBIT 2: MANUFACTURING AND CONSTRUCTION, % OF TOTAL EMPLOYMENT



Source: Bureau of Labor Statistics, European Commission Directorate-General for Economic and Financial Affairs macroeconomic database (AMECO) Eurostat, Ministry of Health, Labor and Welfare (Japan), Office for National Statistics (UK), FactSet, J.P. Morgan Asset Management. European data from 1978-94 was backfilled using AMECO data summed for individual countries that would eventually form the eurozone. Length of historical data coverage varies by country. Data from 1995 onward is computed for the eurozone by Eurostat; data as of March 31, 2019.

On the second issue, those economies with relatively high exposure to interest rate-sensitive sectors should benefit more from lower interest rates. In addition, other factors can limit the ability of low interest rates to incentivize capital spending. For example, in Europe up to two-thirds of corporate financing comes from bank lending, which can be constrained by stressed bank balance sheets.² Combating this issue in the UK, the Bank of England introduced a Special Liquidity Scheme, which helped remove illiquid assets from bank balance sheets, allowing for a more effective transmission of rate cuts to consumers. Meanwhile, a recent Bank of Japan report revealed that 41% of Japanese small- to medium-sized enterprises either don't borrow or have cash holdings that exceed borrowing, rendering lower rates less relevant.³

On the third issue, the initial level of interest rates is important because of the multiple constraints on investment and spending decisions that involve financing. For example, in the housing market a borrower must be able to make the mortgage payment but also accumulate a down payment and have an acceptable credit score. When rates are high, the mortgage payment is the biggest constraint. However, a long period of low interest rates can boost home prices, making the down payment more problematic. Further, in the wake of the financial crisis banks have demanded higher credit scores. As a result, when rates are low, interest payments are less of a binding constraint on homebuying, reducing the potential for rate cuts to boost demand.

² Source: "Funding the EU economy: The role of banks and financial markets," Association for Financial Markets in Europe (2014), using International Monetary Fund data from 2012.

³ Source: Bank of Japan, April 2019.

THE WEALTH EFFECT: Lower interest rates boost asset prices by increasing the value of any asset that pays a steady stream of income. That would tend to have a positive impact on aggregate demand, but the concentration of wealth among the very richest in society, whose spending is relatively unaffected by changes in their net worth, can dilute that impact (**Exhibit 3**). The wealth effect may also be diminished when counteracted by a belief that in a low rate environment you need a bigger stock of assets to finance retirement, particularly if you are averse to selling "principal."

The wealth effect of monetary stimulus has also likely varied significantly across different regions in recent years.

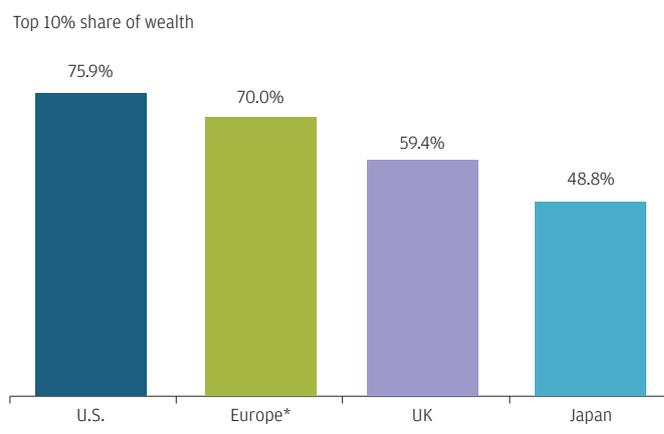
Since the onset of the financial crisis, the gain in net worth has clearly been strongest in the U.S. due to a booming stock market. However, only some of this is the result of easy money; much of the rest of the story reflects better corporate earnings growth and a substantial cut in the corporate tax rate.

Smaller wealth effects in Europe may also partly reflect the relatively defensive asset allocation of European households, who, on average, hold 39% of their assets in currency and deposits and just 22% in equities.⁴ They thus benefited less from the asset reflation that followed the implementation of the ECB's unconventional monetary policy measures.

The BoJ has very directly tried to engineer a wealth effect by buying riskier assets, such as equity ETFs and REITs, as part of its QE program.

Asset appreciation tends to boost aggregate demand, but wealth concentration can dilute that impact

EXHIBIT 3: CONCENTRATION OF WEALTH ACROSS DEVELOPED COUNTRIES



Source: Credit Suisse Global Wealth Databook, 2018, J.P. Morgan Asset Management; data as of October 2018. *Europe represents entire region, not just eurozone. Data as of October 2018.

⁴ Source: OECD (2019), household financial assets (indicator) as of 2016. Eurozone aggregate is based on a simple average of underlying constituents.

However, even though gains in wealth since the onset of the financial crisis have been more muted outside of the U.S., the impacts of improved wealth may be more similar, as wealth is much better spread across society in Europe, the UK and Japan than it is in the U.S., potentially boosting the impact on aggregate demand from an increase in wealth.

It should finally be recognized that the positive wealth effect of monetary easing has likely fallen in all countries over time because of an increasing concentration of income and wealth among the very richest households, who are less likely to spend their gains in either income or wealth.

THE CURRENCY EFFECT: In theory, lower interest rates can reduce exchange rates by making domestic currencies less attractive to global investors. This can, in turn, boost exports and reduce imports, thus increasing domestic demand. Over the past 20 years, however, the evidence for this is mixed. In particular, while lower relative short-term interest rates do appear to have resulted in weaker currencies, the effects seem to be relatively weak and have varied across countries, with sterling and the yen the most sensitive to rates and the dollar and the euro less so.

In addition, the potential for lower exchange rates to boost domestic demand depends on the size of the trade sector. In particular, the UK has a substantially larger trade sector as a share of GDP than the eurozone (counted as a single region), Japan or the U.S. (**Exhibit 4**). Finally, it should be noted that any positive effect on demand from lower exchange rates is, of course, a zero-sum game across nations.

In an economy with a larger trade sector, lower exchange rates have a greater potential to boost domestic demand

EXHIBIT 4: EXPORTS AND IMPORTS, % OF GDP



Source: Eurostat, OECD, J.P. Morgan Asset Management; data as of 2016.

THE INCOME EFFECT: Since households are generally net creditors while corporations and governments are generally net debtors, lower interest rates should reduce net interest income for households while increasing it for corporations and governments. As a result, the income effect of monetary stimulus is negative, counteracting the positive price effect. Throughout the developed world, households have more interest-bearing assets than interest-bearing liabilities, while corporations and governments tend to be net borrowers.

In addition, most U.S. household liabilities are in the form of fixed rate mortgages, while their interest income tends to be impacted by interest rate changes far more quickly. Consequently, lower interest rates, on net, reduce household discretionary income. Moreover, in recent decades the gap between interest-bearing assets and nonmortgage interest-bearing liabilities has risen sharply relative to GDP, increasing the negative income effect of rising rates.

While the eurozone has a greater exposure to adjustable rate mortgages than the U.S., household debt accounts for only 58% of GDP vs. 76% in the U.S., while European households hold 39% of their financial assets in currency and deposits compared with 13% in the U.S.⁵ As a consequence, European household income has also been negatively affected by the ECB's monetary policy.

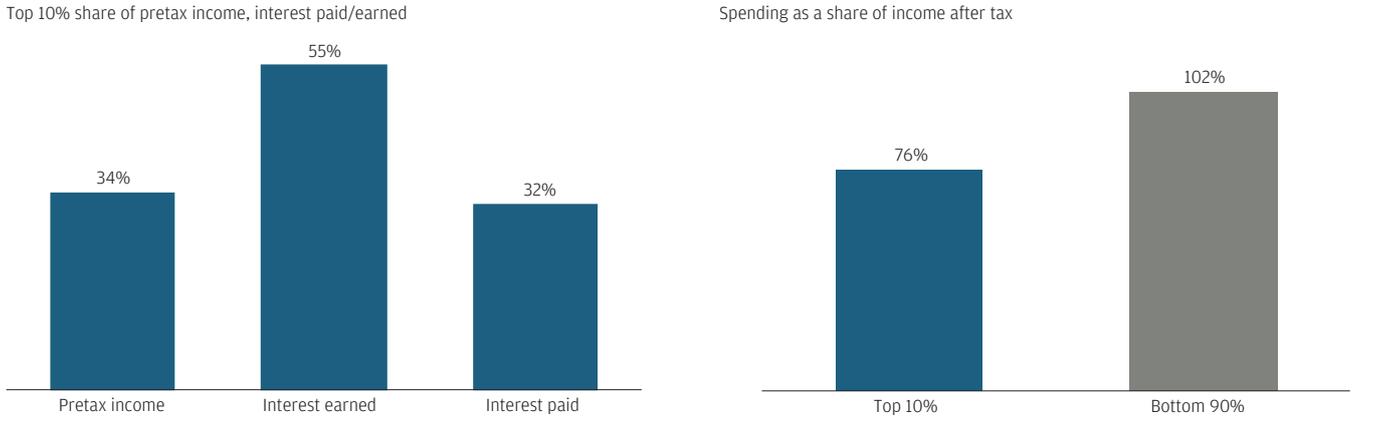
Interest rates on savings accounts in Japan have been almost zero throughout this century, highlighting the drag of low interest rates on a nation with traditionally high personal savings. The UK may have less exposure to negative income effects than other developed nations due to very high housing debt, most of which is financed through adjustable rate mortgages.

Across economies, distributional issues should reduce the negative income effect. Interest-bearing assets tend to be concentrated among the rich, while debt is more aligned with the overall income distribution. Just as in the case of the wealth effect, changes that impact the finances of the richest households are less likely to have knock-on effects on the rest of the economy due to these households' lower average propensity to consume (**Exhibit 5**).

⁵ Source: Bank for International Settlements (2018); OECD (2019), household financial assets (indicator) as of 2016. Eurozone aggregate is based on a simple average of underlying constituents.

Interest rate-bearing assets tend to be concentrated among the rich, who have a lower average propensity to consume

EXHIBIT 5: U.S. PRETAX INCOME, INTEREST EARNED AND PAID IN HIGHEST INCOME DECILE AND AVERAGE PROPENSITY TO CONSUME FOR HIGHEST DECILE AND LOWEST 90%.



Source: Bureau of Labor Statistics–Consumer Expenditure Survey 2017, J.P. Morgan Asset Management; data as of 2017. Interest earned is interest, dividends, rent income, property income; interest paid is mortgage interest and charges.

THE CONFIDENCE EFFECT: Monetary stimulus could boost confidence if it were seen as a clear answer to an economic problem that was already widely perceived. But because monetary stimulus is often viewed as an admission by monetary authorities that things are worse than they thought, it tends to diminish consumer and business confidence.

As evidence of this, in recent decades in the U.S. interest rate cuts have generally been accompanied by declines in consumer confidence (**Exhibit 6**).

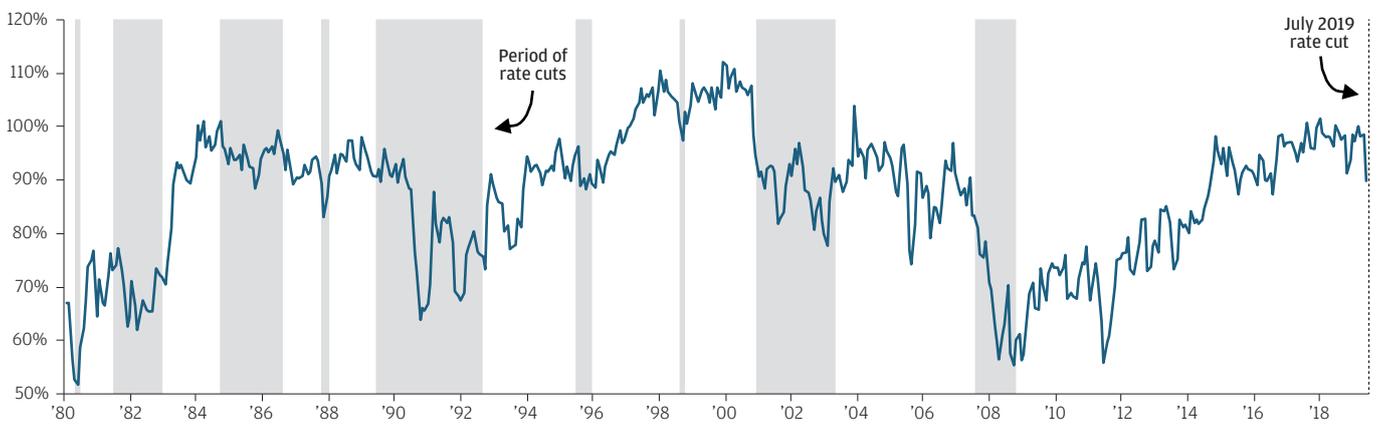
Immediately following the financial crisis, the ECB failed to boost consumer and business confidence in the eurozone. The fact that the European economy endured a double-dip recession didn't help, of course. In Europe, too, policy rate cuts have usually been associated with diminished consumer

confidence. In the wake of the financial crisis, the ECB failed to boost consumer and business confidence. However, during the sovereign debt crisis in 2012, when the fate of the euro was in question, the ECB deployed a range of unconventional policy measures and ECB president Mario Draghi delivered a crucial speech promising to do “whatever it takes” to save the euro. These actions seemed to have a positive impact on business and consumer confidence.

Similarly, the appointment of Haruhiko Kuroda as head of the BoJ, reflecting a new determination from both the government and the BoJ to achieve higher inflation, delivered an initial boost to consumer confidence. However, successive failures to stimulate inflation have eroded public confidence. At this stage, further monetary easing might well trigger a decline rather than an increase in consumer sentiment.

U.S. interest rate cuts have generally been accompanied by declines in consumer confidence

EXHIBIT 6: U.S. CONSUMER SENTIMENT AND FED EASING CYCLES

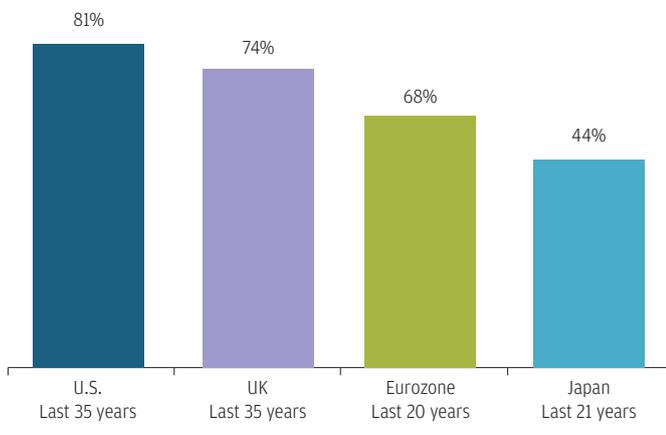


Source: Federal Reserve, University of Michigan, J.P. Morgan Asset Management; data as of August 31, 2019.

THE EXPECTATIONS EFFECT: Finally, there is the expectations effect. In recent decades, all major central banks appear to have adopted an incremental approach to changes in policy rates, with tightening and easing cycles stretching into years rather than months. Rate adjustments in one direction are often followed by further rate adjustments in the same direction, so a move to cut rates will often foster speculation about further cuts. Policy rate cuts thus tend to result in lower long-term rates as investors build in some expectation of lower rates ahead (**Exhibit 7**).

Policy rate cuts often foster speculation about further rate cuts

EXHIBIT 7: PERCENTAGE OF RATE ADJUSTMENTS (CUTS OR HIKES) FOLLOWED BY A FURTHER MOVE IN THE SAME DIRECTION WITHIN THE NEXT SIX MONTHS



Source: Bank of England, Bank of Japan, European Central Bank, Federal Reserve, J.P. Morgan Asset Management; data as of August 31, 2019.

However, the expectation of even easier monetary policy ahead probably has the impact of causing borrowers to delay borrowing and investing activity as they wait for even lower rates. This should partly offset the stimulus impact of lower rates on their own.

The price, wealth and currency effects of monetary stimulus are mostly positive, and the income, confidence and expectations effects are mostly negative

EXHIBIT 8: QUALITATIVE SUMMARY OF ALL SIX EFFECTS ACROSS FOUR REGIONS

✓ Boost to aggregate demand ✗ Drag on aggregate demand – Neutral to aggregate demand

EFFECT	DESCRIPTION	U.S.	JAPAN	EUROPE	UK
Price	Reduce interest costs to encourage spending/investment	✓	✓	✓	✓
Wealth	Boost asset prices, create wealth, promote consumption	✓✓	✓	✓	✓
Currency	Reduce currency, boosting exports and reducing imports	✓	✓✓	✓✓	✓✓
Income	Reduce expense for borrowers and income for savers	✗✗	✗	✗	–
Confidence	Boost confidence in economic prospects	✗	–	✗	✗
Expectations	Discourage borrowing today in anticipation of lower future rates	✗✗	✗	✗✗	✗✗

Source: J.P. Morgan Asset Management; August 31, 2019.

SUMMING UP THE TRANSMISSION EFFECTS

Exhibit 8 provides a qualitative summary of the six transmission mechanisms across regions. In broad terms, we continue to believe that the price, wealth and currency effects of monetary stimulus are positive and the income, confidence and expectations effects are negative.

Price effects from lower interest rates are probably pretty similar across developed nations, as the most interest rate-sensitive sectors of the economy account for similar shares of regional employment today. However, they are likely far less potent than in the past, both because of a declining share of interest rate-sensitive sectors over time and the very low levels of interest rates that have prevailed in these regions since the financial crisis. The wealth effect should also be positive across all regions and most potent in the U.S., given the generally higher levels of financial wealth in the U.S. However, that advantage should be somewhat reduced by the more unequal wealth distribution in the U.S. and the tendency of the wealthy to save rather than spend. The UK has the greatest potential to experience a positive currency effect from easy money due to its large trade sector. We note, however, that the sharp fall in sterling and the euro relative to the U.S. dollar since 2008 probably reflects differences in economic performance rather than monetary policy. Japan, which has implemented the most aggressive monetary stimulus, has seen little change in its exchange rate relative to the U.S.

Countering the positive effects of price, wealth and currency are the negative impacts on aggregate demand of the income, confidence and expectations effects. With holdings in interest-bearing assets outstripping holdings in interest-bearing liabilities, the income effect should have been significantly negative in the U.S., although less so in the UK, the eurozone

and Japan due to their higher use of adjustable rate mortgages. Finally, rate cuts and QE have tended to undermine consumer confidence and delay investment decisions across regions, by sending a negative signal on central bank economic expectations and a clear signal that borrowers will be rewarded for waiting.

On balance, it would appear that monetary stimulus has its greatest chance of having a positive impact in the UK and its greatest chance of actually dragging on growth in the U.S. Crucially, however, across regions the net economic impact of monetary stimulus appears to be very low and potentially negative.

THE FUTURE OF MONETARY STIMULUS

As we suggested in our 2016 article, “The Future of Monetary Policy,”⁶ we believe that central banks in the future will return to the policies first employed in this cycle, including quantitative easing. Simply put, what was once extraordinary and unconventional will likely become ordinary and conventional.

Policymakers will have learned from the experience of the last decade, and this should result in a greater emphasis on those policies that appear to have had the greatest positive impact. These could include more targeted lending schemes that directly incentivize banks to finance capital spending or homebuying.

Greater coordination with fiscal authorities would likely help as well, as would a commitment to avoid allowing too-tight lending standards to negate the impact of lower interest rates. Central banks could also adopt shock-and-awe tactics in place of incrementalism, by reducing interest rates very sharply at the outset of any bout of economic weakness.

However, policymakers will also face some greater challenges in the years ahead. While coordination with fiscal authorities is essential, years of low interest rates and low inflation have eroded public support for fiscal discipline. Although Modern Monetary Theory (MMT) seems unlikely to be adopted formally, central governments will be increasingly tempted, by low interest rates and a lack of negative near-term consequences, to expand deficits and dismantle central bank independence. At an extreme, of course, this could lead to hyperinflation. However, even when employed to a lesser degree, increased central government control of the economy would likely diminish productivity and potentially, by favoring political allies, erode democracy.

Assuming, however, that fiscal policy does not precipitate a crisis, the greatest challenge for monetary authorities in the 2020s will be the starting point. In an environment already characterized by low inflation and low interest rates, monetary stimulus will likely continue to be relatively ineffective. To the extent that it is, and to the extent that central banks do not fully recognize this, both the evolution of the global economy and the behavior of central banks could contribute to an era of continued slow growth, low inflation and low interest rates throughout our 10- to 15-year investment time frame.

⁶ Source: Benjamin Mandel, Thushka Maharaj and Michael Albrecht, “The future of monetary policy,” J.P. Morgan Asset Management Multi-Asset Solutions, May 2016.

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