Desperate Measures
The Next Downturn and What to Expect From Policymakers

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1. Why the Next Recession Will be Different

The current US economic expansion is now in its 36th quarter, making it the second longest in post-war history. Though business cycles do not “die of old age,” there are reasons why cycles eventually end and the economy contracts. This paper largely focuses on the US and developed markets, but the implications are global. The US dollar’s role as the global reserve currency makes the US economy the natural point of reference.

Conceptually, it is helpful to remember that recession triggers originate from either the real economy or financial markets. The 2008 recession was born of a financial crisis, and the downturn of 2000–2001 was also a financially-induced recession as the dotcom equity bubble burst. Both came as a shock to many.

Economically-driven recessions too can derive from shock scenarios, possibly triggered by geopolitical tensions or a breakdown in trading relations. In contrast, more traditional recession starters tend to appear on the horizon, e.g. tightening monetary policy. The Federal Reserve (Fed) is currently in the middle of a rate-hiking cycle. While cumulative rate hikes have thus far been quite measured, if rate increases continue into 2019, this hiking cycle will have been the longest episode of uninterrupted rate increases in post-World War II history (see Figure 1). In the past, such prolonged periods of rate increases have often been followed by a recession that has been blamed on the Fed.

Figure 1: US Federal Funds Rate

Source: St Louis Federal reserve; target rate from 2009 onwards calculated as the midpoint of the target range.
Whatever the cause of the next recession, we believe the potential policy responses could be very different from those of recent history for two reasons: first, the leverage of conventional countercyclical measures may be too weak, and, second, the politics of large economies now favours experimental and untested policy approaches. We therefore think it is important to consider what an ever-more unconventional policy toolkit might include.

**Reason 1: Conventional Countercyclical Stimulus is Too Weak**

When the next crisis hits, we believe the conventional policy toolbox will be largely empty. The current recovery has been relatively anaemic, with policy accommodation only gradually being removed and unlikely to reach pre-2008 levels. Looking ahead to the next downturn, it is hard to see how conventional US monetary and fiscal policy responses will be sufficient to the task.

The Federal Funds Rate will likely be hovering in the 2.5–3% range when the slowdown occurs. If we consider that the average cut in interest rates (post crisis) is about 5%, we can see the potential issue with entering a retrenchment period at such a low level. In the previous nine recessions, 476 bps of rate cuts were implemented. In the next one, there will be far less room for manoeuvre if the starting rate is below 5%.

Meanwhile, the Fed’s balance sheet is likely to be much larger than during previous crises. While it is shrinking, it is still nearly four times pre-crisis levels as a percentage of GDP. In Europe and Japan, the situation is much worse as rates will have barely budged from near-zero levels, making monetary stimulation even harder. As of today, the European Central Bank (ECB) and Bank of Japan (BoJ) are still expanding their balance sheets.

**Monetary Policy Response**

If central banks find that cutting rates to zero (or slightly below zero) fails to counter the effects of the next crisis, they could renew their quantitative easing (QE) programmes. In some instances, especially in Japan and to a lesser extent in the eurozone, the extensive use of this tool over the past number of years will make any future wave of financial asset purchases more constrained by market size and liquidity.

In addition, precise lessons must be drawn from previous QE exercises, as the macro effects of different QE channels (e.g. foreign exchange versus domestic debt, government debt versus credit or even equity, etc.) may develop very differently. As Ben Bernanke once said, “The problem with QE is that it works in practice, but it doesn’t work in theory.” The QE magic may indeed be hurt by diminishing returns, driving policymakers to look elsewhere.
The state of the financial sector creates an additional complication. While post-2008 regulation has been designed to make the financial system more robust, US and European banks are now weaker conduits of monetary policy impulses. Europe is in a worse position as banks are still repairing their balance sheets, and bank debt accounts for the majority of the credit market (Figure 3). The region is further hampered by the Brexit fallout which has put a brake on the deepening of the European debt market.

In China, credit generation had largely emanated from the shadow banking system until the authorities clamped down. This raises questions about how effective a restart of credit supply would be in future. All of the above factors could lessen the ability of central bankers to counter a cyclical slowdown via traditional means, creating incentives to explore unconventional tools.

**Fiscal Policy Response**

The potential for fiscal measures to alleviate a recession also appears limited. The US may face greater challenges with regard to fiscal capacity than other developed economies. Its fiscal debt burden has been exacerbated by the recent pro-cyclical fiscal policy of the Trump administration. Cutting taxes and increasing government spending late in an expansion cycle is antithetical to conventional fiscal management. The US would therefore enter any recession with the highest deficit level ever (see Figure 4). The general government deficit has widened by an average of roughly 4% through the last 10 recessions, suggesting headline deficits could go into double digits.

Such deficits have only been seen in wartime or during the financial crisis in 2008/9. During those periods, fiscal stress was a global phenomenon, but this time the US would be an outlier. This begs the question...
of whether the capacity for fiscal stimulus would be constrained, allowing for a deeper recession to take hold. Furthermore, the nature of recent US tax changes suggests that any stimulus would be heavily tilted towards increased expenditures. While the fiscal multiplier is higher for expenditures, the internal lag — the time it takes to approve and implement increased government spending — can delay its reaching the economy and aiding any recovery.

European sovereign balance sheets would start with lower headline deficits (Figure 5), but the fiscal space of most European fiscal authorities remains constrained by the debt overhang resulting from the eurozone sovereign debt crisis. Moreover, the legal and political architecture of the monetary union makes effective countercyclical fiscal action difficult. The UK would also have less room for manoeuvre due to legacy effects and Brexit fallout.

In contrast, emerging market economies generally have less indebted governments. However, EM corporate and financial sectors have been increasing their debt burdens and some of governments may need to bail out private debtors by taking their liabilities onto the sovereign balance sheet. This question is particularly pertinent to China. Even in a benign scenario, a strong global countercyclical fiscal stimulus is unlikely.

**Reason 2: Populism Could Aggravate Policy Weakness**

Conventional fiscal and monetary policy could also be constrained by nationalist and populist political environments, especially if these policies require international coherence and cooperation. As well as the size of the fiscal stimulus being insufficient, there is a risk that the quality of it deteriorates, as both left- and right-leaning populists typically shift spending toward less productive areas. As for monetary policy, central bankers are likely to face criticism from nationalist and populist government circles. They have already been accused of accumulating excessive economic might following their multi-dimensional monetary policies in the wake of the financial crisis.

In the eurozone, fiscal policy has become the battlefield of creditor and debtor countries. This could lead to paralysis and impotence due to the contradiction between the fiscal straitjacket imposed by the Maastricht Treaty and the populist pressures of national governments. The European institutional constraints are treaty-based and subject to a supranational court. But even here, public frustrations are mounting over the perceived loss of sovereign freedoms and could challenge the current institutional setup.

In the US, the Trump administration has demonstrated an ability and willingness to violate historical norms and push legal boundaries. There is little reason to believe this would not extend to its economic policies during a downturn. If the assumption holds that the US government has already exhausted conventional fiscal policy, its track record suggests we should expect interventionist and protectionist reactions to any recession. This could exacerbate existing imbalances and increase market uncertainty.

US monetary policy may have some room for expansion but faces a hostile political environment. The Fed has already witnessed some of its prerogative being curtailed by US legislative and executive powers, for example, through the partial roll-back of the Dodd-Frank Act. We do not expect the present political environment to be favourable for unconstrained monetary policies or for stronger international cooperation of central banks.

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**Figure 5: Changes in Fiscal Positions of Selected Markets**

![Figure 5: Changes in Fiscal Positions of Selected Markets](source)

Source: IMF World Economic Outlook. 2018 figures are IMF forecasts.

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2. Possible Policy Responses to the Next Crisis

Monetary Response: Quantitative Easing 2.0

In 2008–2009, central banks responded to the financial crisis with a set of unconventional policies which essentially fell into the category of ‘quantitative easing’ (QE). While opinions on the effectiveness of QE differ, we have clearly observed a post-crisis shift in money creation.

In normal circumstances, most of the money supply is created by the banking system leveraging the monetary base. In theory, it follows that small changes in central bank balance sheets can meaningfully change monetary conditions. But in practice, QE appears only to be a powerful instrument when its magnitude is substantial. While QE increases the lending capacity of the banking system, the latter is under no obligation to actually use that capacity. Lack of confidence in an economic recovery may prevent the private sector from demanding more loans, while capital constraints, regulation and overall uncertainty may prevent banks from issuing them.

In fact, this is exactly what happened post 2008. Between December 1999 and December 2007, the banking system created ten extra dollars for every dollar created by the Fed, while between January 2009 and July 2018, it created only two. As a result of this, central banks’ proportion of the monetary base in M2 aggregate (i.e. all current and short-term deposits) increased from 11.3% in December 2007 to over 25% in July 2018 (see Figure 6).

While commercial banks are now better-capitalised and have increased their holdings of safe assets, the fact that central banks are creating a greater share of overall money means they also require bigger balance sheets. While the Fed balance sheet is shrinking, some observers estimate that it will not go below $3.5 trillion. Meanwhile, other central banks have not even outlined their quantitative tightening (QT) programs. Consequently, central banks are likely to enter the next crisis as important capital market participants.

We presume that the nature of the next crisis will be disinflationary, in which case we would expect the policy response to be accommodative. With interest rates still at historically low levels, central banks would likely have to suspend QT and eventually re-activate QE under a new or existing framework. The exact amounts would depend on economic and market conditions, and QE may be supplemented by other measures.

We believe such accommodative policy could evolve into areas and forms that could fundamentally alter the governance of monetary systems and create considerable long-term risks. To enable this, central banks would likely require changes in their governance framework and in the key legislative documents that regulate their activities, which could have profound long-term consequences.

Redefining Central Banking:

Three Scenarios

Scenario 1: ‘Nipponification’ — Expanded QE and other Unorthodox Uses of Central Bank Balance Sheets

The Nipponification of central banking should be a relatively benign scenario where the primary change would come from the composition of QE. Central banks could widen the range of fixed income instruments they can purchase, or even start buying equities and other assets. They might adopt this course for the following reasons:
• An unwillingness to dominate government debt markets as an overly large player. The extreme case of Japan where the central bank holds 47% of central government debt, even within a diversified program, is telling.

• QE via alternative channels may be more effective in certain circumstances. During a crisis, investors queue up to buy government debt anyway, so central banks’ firepower may be better targeted at unlocking credit and reducing risk premia elsewhere.8

• A wish to limit wealth destruction and/or to ensure financial stability.

• A need to prop up specific sectors of the economy — a worst case situation accompanied by a considerable deterioration in the quality of governance.

The implications of such a scenario could outlive the crisis itself. The demographic backdrop of the Japanese economy contributed to the peculiarities of its monetary policy, and it may be a path which other countries would have to follow.

Whatever the motivation, the risks of such a policy would be twofold. First, it could introduce distortions into price discovery. It is well accepted, and indeed expected, that monetary policy affects key reference rates, but markets are relatively unaccustomed to that happening in credit and equity markets. Second, it would pose additional risks to the capital of central banks, chiefly through realised and unrealised capital losses. While it is not unknown for central banks to function with negative capital,9 it limits their room to tighten policy when necessary and erodes their independence.

One subset of ‘Nipponification’ could be ‘Helvetification’, where a central bank’s chosen asset for purchase is foreign currency. It is conceivable that some nations might renew interventions in foreign exchange markets in an attempt to redress trade imbalances or curtail capital inflows.

However, the genesis of such policies would not be monetary and the increase in central bank balance sheets would likely be a mere by-product.

Scenario 2: ‘Weimarification’ — Central Bank Funds Government Directly

In contrast to the ‘Nipponification’ scenario stands the possibility of Weimarification. In such a scenario, government debt remains the key instrument of QE, but the mechanics of its use change drastically, reshuffling the entire relationship between the government and the central bank. The starting point of this thinking is not illogical: if central banks, via the secondary market, play such a significant role in the funding of government anyway (see Figure 7), why not cut out the middle man and fund the government directly? After all, an expansionary fiscal policy requires debt issuance, which could be mopped up by an expansionary monetary policy seeking to purchase assets.

Figure 7: Central Bank Holdings of Central Government Debt

The reason the middle man is not cut out lies in the disastrous experience of the Weimar Republic’s hyperinflation in the 1920s following its attempt to monetise debt. As a result of this event, many countries explicitly prohibit primary market funding of governments by central banks. But if the legislative restrictions were to be removed, it would be quite easy to achieve. The central bank can credit the government’s deposit just as it credits bank deposits when it creates reserves. And there are plenty of historical examples. Up until the 1970s, central banks in many European states, including France and Italy, were heavily directed by their treasuries and engaged in the residual financing of their debt.
What would the effects of this be, all other things being equal? If it is done strictly in the context of an anti-crisis program, the central bank balance sheet would look much the same as after QE, with the same amount of government securities. The transmission mechanism, however, would be different. Instead of money entering the system when the seller of the asset to the central bank receives it into their deposit account, the money would enter the economy when the government spends the newly-printed money on goods, services or wages, and thereby credits private sector deposits.

A possible argument in favour of this is that money would reach a much wider range of agents, shortening the policy lag and mitigating the negative distributional consequences of traditional QE. The government could bypass the banks and reach the economy directly, similar to the ‘helicopter money’ approach.

There are, however, considerable risks to such an approach:

- It would be uncharted territory in modern economies, and it would be hard to calibrate such a powerful tool
- Bypassing the banking system would remove the gatekeeping role of commercially- incentivised banks in allocating new capital
- It would present numerous operational challenges and unknowns. Would the central bank participate in debt auctions alongside the private sector? Who would determine the price of the debt issued? How would central banks exit from such program? Would they seek to use secondary markets or negotiate bilaterally with the government?
- Most importantly, the creation of mechanisms for direct monetisation of debt would severely undermine central banks’ governance and would be extremely hard to reverse politically, even if the original intention is merely to ensure better coordination between fiscal and monetary policy.

The Complacent Politics of Low Inflation section of this paper looks at some specific issues around debt monetisation. The fact that populist politicians may be quick to abuse any unorthodox economic thinking does not negate the undisputable fact that money creation has changed. The current thinking on ways to extend QE, while including some highly questionable ideas which have been tested to failure, stems in part from inherent problems with monetary systems.

Scenario 3: ‘Sinification’ — State-led Management of Money Supply

The key doubt in making a prediction of ‘Weimarification’ is that the explicit monetisation of budget deficits through the primary market could hit political and institutional constraints. Even under a trend of deteriorating governance of institutions, this is one threshold which may be hard to cross. The governments which are willing to interfere in the monetary systems may choose to do so in a different way, through ad hoc measures which would use existing mechanisms but gradually undermine them.

We have established that, post-crisis, central banks have to create a greater share of money supply. Rather than forcing central banks to supply even more money, why not force the banks to do so? One way could be through fiscal policy by stealth, by providing various off-balance sheet guarantees onto bank lending. Another is to create incentives for banks through ‘inverse macro prudential policy’; for example, by trying to penalise banks holding too much in treasury assets. Yet another way is to set up state-owned investment entities, with a banking license, and create government- directed credit.

The appeal of such policies is their apparent lack of cost at initial stages. Why borrow money or scare the markets by printing it if you can do what commercial banks do and create new money against investment projects’ assets? At later stages, however,
Even if debt monetisation is introduced as a temporary anti-crisis measure, reversing it could be difficult given growing political support. ‘Modern Monetary Theory’ (MMT) has recently gained popularity on the left-wing of the US Democratic Party as well as in the UK Labour Party (‘People’s QE’ to fund the National Health Service). Broadly, the argument runs as follows: government spending decisions should not be constrained by its tax base as it can ‘spend the money into existence’\footnote{\textit{Desperate Measures}, State Street Global Advisors.} (to guarantee full employment, pay a universal basic income, or fund infrastructural projects). The (likely) side-effect of higher inflation can be dealt with by taxes, regulation and other measures.

To be exact, the way monetary systems are currently set up, the government does not have the ability to ‘spend dollars into existence’. Government receipts are credited with dollars, which have already been created either by the central bank or by commercial banks. However, the system can easily be reset to make it possible to ‘spend dollars into existence’. Central banks can buy bonds directly from the government or extend loans to it. The government can then use this cash to fund public spending.

In ordinary economic conditions, such policy is purely inflationary. It would, however, be unfair to dismiss it as merely an example of fringe far-left economic thinking. The responsiveness of inflation to traditional measures is an issue in many economies, and there are many questions around the sustainability of the modern monetary systems. Pre-crisis, the majority of money was produced by bank lending; post-crisis, more is being produced by central banks. For some on the left, this represents an opportunity for governments to play a greater role in money creation. For some on the right, the situation represents the lack of ‘sound money’, which, among many other factors, has fuelled interest in cryptocurrencies. Switzerland recently held a referendum on introducing \textit{Vollgeld}, a system which would abolish fractional reserve banking. This initiative was rejected by the Swiss voters by a margin of 76\% to 24\%.

In fact, all deviations from current bank-based money creation, whether by deliberate design (People’s QE) or by attempts to resolve other concerns (fractional reserve banking), increase the role of the government in credit allocation and, more broadly, in capital allocation. If the share of central bank money in total money supply is higher, the central bank needs a larger balance sheet. For that, it needs more assets. At the very least, it creates a large permanent funding base for the government, even without breaking central banks’ independence.

Another question then arises: if the bank lending channel plays a smaller role in money creation, how do you actually inject money into the economy? One way is through government spending (as per ‘People’s QE’); another is to let the public have accounts with the central bank, broadening the base for regular QE.
it will become clear that such projects are frequently politicised, and their investment performances are often disappointing. And such failures are ultimately picked up by with fiscal or monetary balance sheet. While that could continue to be acceptable in contemporary China, this could be very destabilising in developed economies. Furthermore, even though such mechanisms bypass central banks, they would eventually clash with central bank independence, not least with its supervisory role of these newly-created institutions.

While the above scenarios may represent accelerated versions of existing countercyclical instruments, their utilisation could have profound long-term consequences. They would change the fabric of the monetary system and are likely to accelerate inflation in the long term, as their construct undermines many of the defences previously built against it. However, we cannot be certain about the scale of that effect as inflation has already stopped responding to other factors which previously caused it. But even if inflation does not increase, such policies would lock in highly inefficient mechanisms of allocating capital and would ultimately be unfriendly to growth.

**Regulatory Response: Financial Repression and Capital Controls**

**Financial Repression**

If a government wishes to introduce expansionary policies but is unwilling to tamper with the monetary system itself (perhaps in a higher inflation scenario), then it could use methods other than changing the characteristics of QE. For example, it has considerable regulatory power to direct the asset allocations of regulated institutions: bank treasuries, insurers, pension funds and, of course, the central bank itself. It is important to note that governments can either use explicit levers such as regulatory tools or indirect measures such as peer pressure, moral persuasion and overlapping ownership networks (see Figure 8). Notably, the toolkit has advanced in recent years as the field of macro-prudential regulation has become ever more sophisticated. In the post-crisis era, this has been used to de-risk the financial sector, but the ability to engineer financial sector behaviour has undoubtedly grown.

Overall, financial repression is an option for sovereigns to help ensure a considerable funding base, at the expense of other asset classes and other debt issuers. In fact, European governments engaged in mild forms of financial repression during the eurozone crisis via the banking sector, leading to the crowding out of corporate lending in favour of funding the sovereign.\(^\text{13}\) This has been one of the reasons behind Europe’s subsequently low growth rates. But for such measures to be truly effective in expanding the government funding footprint significantly, they would have to be accompanied by capital controls (see next section).

**Capital Controls**

Technically, capital controls are a form of financial repression, but we believe it is more useful to consider them separately. Developed economies are unlikely to implement the most extreme form of capital controls, namely those regulating and curtailing access to

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<tr>
<td>Non-bank portfolio restrictions</td>
<td>A requirement for certain asset owners (e.g. insurers, pension funds) to hold a minimum share of assets in domestic government bonds</td>
<td>Depressed returns and associated actuarial consequences; crowding out of private sector credit; weakening of market discipline for the government as well as other sectors</td>
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<tr>
<td>Bank portfolio restrictions</td>
<td>A requirement for banks to either hold a minimum share of treasury assets or a minimum share of all assets in government debt; narrowing the range of collateral deemed acceptable by central bank</td>
<td>Weakening of diversification; crowding out of private sector credit; weakening of market discipline for the government as well as other sectors</td>
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<td>Lending caps</td>
<td>A cap on the amount of lending rather than its characteristics</td>
<td>Rationed lending, weaker investment growth</td>
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<tr>
<td>Loan or deposit guidelines</td>
<td>Restrictions on the amount and composition of loan and deposit books of banking system</td>
<td>Suboptimal quality and quantity of lending; distorted credit channel</td>
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<td>Abolition of cash</td>
<td>Abolition of physical cash, with only electronic commercial bank money accessible to the public</td>
<td>Near-impossibility of system-wide bank runs, easier implementation of negative interest rates</td>
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Source: SSGA Research.
foreign exchange. Given that the US, Europe and Japan enjoy reserve currencies, this is a virtual impossibility. However, there are a range of subtler capital controls that could come to the fore. These would presumably be a mix of taxes that encourage or discourage international transactions. In particular, they can be structured to raise or lower incentives of investment into particular asset classes or financial instruments. The objective here would either be to affect the pricing or liquidity of certain markets.

Traditionally, capital controls have been considered as a defensive move among emerging markets to prevent rapid capital outflows. Highly-indebted sovereigns in developed markets could be tempted to engage in similar policies in the future. For example, the eurozone might tolerate such programs to create ‘stickier’ funding bases for government financing.

Alternatively, certain taxes could be designed to make outward capital flows unappealing and thereby steer capital into other areas. The most obvious targets would be large domestic investors, such as pension funds and insurance companies. Given their actuarial needs, subtle changes in taxation can dramatically affect their asset allocation. Governments could therefore aim to change incentives in order to limit outward portfolio investment, leading to higher domestic investment. This would simply be another form of financial repression as excess liquidity would help to keep rates lower or expand the investor base for domestic sovereign or corporate debt.

Capital controls could also be applied in pursuit of a new industrial policy that heavily politicises private investment. Already, both the US and Europe have established a tighter inbound investment regime (2017–2018). The rules are geared toward restrictions on foreign direct investment by foreign companies with government links. The specific impetus has been a fear of Chinese companies acquiring Western technology firms in an effort to consolidate advanced industrial technologies in China. This is ostensibly framed around national security concerns in areas of sensitive technology, though it could easily be interpreted as a governmental intervention to preserve national champions. The threat is primarily economic and the concern is that sources of economic competitiveness would be eroded in the event of technology transfer to China.

Similarly, what may not come in shall not go out. If certain types of inbound investment are not permitted, perhaps certain types of outbound investment could also be curtailed. While the pretext cannot be national security for stopping outbound investment, governments could easily change tax and regulatory incentives to prevent investment outflows and enhance a home bias. The Obama administration changed the tax code to deter ‘corporate inversions’ where US firms acquired a smaller foreign rival but structured the deal as a reverse acquisition in order to shift tax headquarters to a cheaper domicile. Other examples include the elimination of tax loopholes that permit the shifting of production or revenue recording to lower tax jurisdictions. These are very legitimate motivations, but the approach could easily be expanded solely to lower incentives for foreign direct investment.

**Industrial Response: Protectionism, Onshoring and Price Controls**

**Protectionism and Onshoring**

The politics of the next recession make state control of industry more likely as well. In a severe scenario, governments may act to reverse the globalised nature of many corporations. In developed economies, this could lead to a governmental push for ‘onshoring’ of global supply chains. Protectionism is not only about restricting future trade and capital flows, but about reversing past flows. The Trump administration is not alone among developed governments to have called on domestic corporations to repatriate production to their home economies. The difference in the future is that governments may pass legislation or change regulation to actively promote ‘onshoring’. This is more likely to be through punitive incentives that lessen the efficiency of global supply chains than through positive incentives that improve the competitive appeal of home regions.
Instead, we believe the expansion of the regulatory apparatus establishes the precedence for governments to engage in more active industrial policies. While this may seem resonant of the failed policies of the 1970s, it is critical to understand that the public mood in developed economies is far more receptive to such nationalist overtures today than before the outbreak of the 2008 crisis. Moreover, it can be justly framed as a rebalancing of the uneven effects of the recent wave of globalisation. In particular, any downturn is likely to see resurgence in unemployment, and these measures can be portrayed as preserving employment, even if at the cost to profit margins or economic competitiveness.

Recent US domestic rules have stabilised the small US coal industry. Similarly, other regional industries could secure government support for national champions even if it distorts market forces. For example, existing government oversight of cross-border mergers and acquisitions could easily be extended to the domestic market. The institutionalisation of governmental boards weighing on the risks and benefits of cross-border activity could be revamped to create state-led investment boards that coax local companies into merging. The aim of such policies would be to ensure economies of scale, create national champions or more likely, to prevent the collapse of failing industries and companies. During the 2008 financial crisis, the US government used informal levers to induce consolidation among US financial institutions, and intervened in the US auto industry. There could be parallels in other industries in the years to come.

**Price Controls**

Inflation, which reflects the growth rate of aggregate price levels, is a macroeconomic phenomenon, but prices of individual goods and services are in essence microeconomic. It was customary in the past for governments to try and control individual prices, either in a misguided attempt to reduce inflation or to alleviate social pressures stemming from specific markets. Given that the next crisis is likely to be disinflationary, however, why consider this policy at all?

There are two specific ways by which price controls may return to the agenda. First, some of the QE 2.1 scenarios above may produce an inflationary impact well beyond the levels necessary for a countercyclical stimulus. We could envisage populist governments attempting to control prices administratively, leading to eventual shortages. However, such a scenario is far-fetched and in the 21st century, there are very few countries who have ever attempted to do this on a significant scale.

A second and more likely scenario could occur irrespective of where inflation was headed. Under the same rate of overall inflation, different groups

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<tr>
<td>Nationalisation of current or former natural monopolies&lt;sup&gt;46&lt;/sup&gt;</td>
<td>Typically utilities (e.g. railways, water, electricity, postal services, etc.)</td>
<td>Lower cost to consumers, improved service or wider availability</td>
<td>Fiscal costs and technological standards</td>
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<td>Nationalisation or imposed public sector role in other industries&lt;sup&gt;17&lt;/sup&gt;</td>
<td>Wide range possible but likely mining, manufacturing or technology related</td>
<td>Secure employment or advancement of national security objective, dilution of monopolistic positions, redefinition of public goods</td>
<td>Fiscal costs, weaker investment climate, misallocation of capital, less competition</td>
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<tr>
<td>Widening of state-directed lending and investment activity</td>
<td>State guarantees on lending, forced lending by state-owned lenders, active state-backed investments</td>
<td>Improve competitiveness of strategic sectors, political channel to pick ‘winners and losers’</td>
<td>Fiscal costs, inflationary pressures</td>
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<td>Market-shaping regulatory intervention (e.g. to promote on-shoring)</td>
<td>Re-align specific markets on new parameters (e.g. fixed share of on-shore production in manufacturing, green fuels in energy, coverage for health insurance)</td>
<td>Industrial policy view to override private sector dynamics, imposition of non-economic targets, i.e. make sectors comply with political will</td>
<td>Highly idiosyncratic, risk of technocratic misunderstanding of sector, erosion of competitiveness</td>
</tr>
<tr>
<td>Preferential regional or demographic policies</td>
<td>State support for specific communities or regions</td>
<td>Rebalance economic growth geographically or demographically, much more explicitly than in previous decades</td>
<td>Undermining of economic growth engines, weakening of tax base</td>
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Source: SSGA Research.
of consumers may face different effective inflation rates, and some prices may be growing quickly even as other are falling. For consumers who do not live in an overall high-inflation environment, sudden price increases may appear unfair and they may expect the government to respond. But the average voter is also aware, at some level, that forcing bakeries to sell bread at below-market rates would immediately result in bread shortages — so the scenario would be more relevant to complex sectors with a few large companies and a degree of existing government oversight. Consequently, it can be politically attractive to try to introduce price controls in those sectors where:

- prices are rising faster than inflation
- a significant (or small and well-organised) proportion of the population are consumers
- the sector is monopolistic or oligopolistic, with the producers having some pricing power in the first place
- fixed costs are relatively high, so depressed prices would reduce investment rather than supply in the short-term
- the government has a degree of influence already by having substantial regulatory powers, or being a major customer

The notable examples of such sectors, depending on the country, are: housing, healthcare (both pharmaceutical products and medical treatment), energy and utilities, transportation and higher education.

Price controls may be exercised through existing regulatory powers (by pressuring independent regulators to curb regulated price increases), additional legislative or executive measures or formal or informal agreements with the key players in the sector. The latter form of price controls, exemplified by recent public pressure put on the US pharmaceutical industry by President Trump, is particularly detrimental to governance; such controls would have a shaky institutional foundation and be highly politicised in nature. They could coincide, for example, with an extended use of discretionary investigative and regulatory powers to pursue those players who do not subscribe to such agreements.

Some of these sectors are plagued by genuine inefficiencies, unjustified market powers or the ability to extract regulatory arbitrage. However, as with other policies we have considered, the political environment following the next crisis would be conducive to haphazard policy responses that address the symptoms rather than tackle the underlying structural problems.

**International Response: Fracture and New Structures**

Most of this paper has focused on the expected shift in the domestic policy framework of developed economies. In addition, there may be a parallel shift in the international economic order. While a domestic shift would originate from the inability to deliver a conventional countercyclical stimulus and therefore trend towards increased activism, the international reverberations are harder to predict. Nonetheless, we foresee three potential changes:

1. **Fragile supra-national economic structures could be at risk of collapse.** In Europe, renewed sovereign stress could prompt the exit of a member state from the monetary union. Currently, Italy appears the most likely candidate. Post crisis, an Italian government would want to pursue increased activism to help relaunch the economy, but would be limited by treaty obligations and market expectations. The resulting tension between national sovereignty and euro membership could escalate to the point at which Italy left. Such an event would have dramatic ripple effects, necessitating major changes in the European architecture.

2. **The policy stance of the US government and geopolitical realities could help dilute the prominence of the US dollar in the global economy.** While there is no foreseeable substitute to the US dollar as the global anchor currency, large numbers of countries could deepen their mutual swap lines or allow for increased mutual convertibility. There have already been serious calls to create alternative payment systems that can function with non-USD currencies alone. This would eliminate the routing of transfers through the Federal Reserve of New York or through the SWIFT payment system, both of which exposes actors to US law or sanctions.
3. New international organisations, especially in Eurasia, could take on new responsibilities, particularly if legacy organisations experience paralysis. Most notably, the erosion of the World Trade Organisation could accelerate, delegating dispute resolution to regional bodies. Even some of the Bretton Woods organisations could struggle to fulfil their core roles due to geopolitical tensions among their key board members. In such a scenario, alternative finance and development vehicles would come to the fore. Such organisations may well be more supportive of an interventionist approach, thus solidifying the overall trend of policies shifting away from market-friendly outcomes.

3. Implications for Investors

We expect the first-order capital market implications of any crisis to be similar to those of previous recessions. The initial interest rate cuts would ‘manipulate’ the risk free rate, influencing other asset classes whose price discovery uses the risk free rate as a reference point. As bond yields fall and treasuries become less attractive, investor sentiment should recover and equity markets rally. Re-launched QE programs could exacerbate bond rallies through direct central bank injections, as they did before, and will likely weaken currencies in the medium term.

There are, however, three important issues stemming from the policymakers’ unorthodox responses which investors should look out for.

First, some of the unorthodox policy responses may prompt different market reactions from those in the past, or even completely unpredictable ones if they have not been tested for decades. For example, a ‘Weimarification’-type QE may actually lead to a bond sell-off due to fears of inflation, and investors may flock to equities, real estate and gold for protection. Interventionist policies such as directed lending or price controls may calm specific markets in the short term, but could translate into lower asset return through weaker growth due to capital misallocation. Capital controls, in particular, would block the channels for market clearing and price discovery, and introduce cliff-edge risks around the times of their (almost inevitable) removal.

Second, governments will seek to intervene beyond adjusting the risk-free rate. Even after the last crisis, the Fed used ‘Operation Twist’ to explicitly compress the long end of the yield curve. Meanwhile, the Bank of Japan targeted 10-year government bond yields and sought to reduce risk premia in other markets. In the next round of policy responses, investors will have to assess not just the impact of a government’s macroeconomic policy, but the likelihood and scale of interventions in each specific market. Moreover, if governments become prone to intervene in specific companies, this impact channel will trickle down all the way to security selection.

Finally, such a wide set of capital market disruptions may introduce challenges to the asset allocation process on top of those faced by individual asset classes. Correlations may break down, and optimizing portfolios may become harder. The Swiss National Bank’s decision to peg the franc to the euro in 2011 — a comparatively small event for a global economy — led to significant disruption for currency hedging. Events of this kind could happen more often, forcing investors to focus on the likelihood and timing of government intervention, in order to generate future returns, rather than just on fundamentals.
APPENDIX: Money Creation in the Modern Economy

In a modern market economy, a new unit of domestic money can only be created in two ways:

- **By a central bank:** it credits the deposit of a commercial bank and creates reserves, though creating a claim (loan) on the commercial bank or through outright purchase of an asset. In the same way, the central bank can destroy money when it sells assets back and debits commercial banks’ deposits.

- **By a commercial bank through lending:** when a loan is extended, the commercial bank credits the customer’s deposit and creates a loan asset. Money is destroyed when the loan is repaid.

The withdrawal of physical cash from or depositing it into commercial banks does not in itself alter the quantity of money, as it merely exchanges one unit of commercial bank money into one unit of central bank money held directly by the public, or vice versa. Any transactions between two private sector counterparts merely reallocate the monetary base between their two respective commercial banks.

The only non-bank entity to maintain a central bank deposit is usually the government. In a modern market economy, the government predominantly funds itself from taxation and through debt issuance. Neither results in money creation — a purchase of government bonds or a tax payment merely re-allocate the monetary base from the private sector to the government.

The pre-crisis conduct of monetary policy was far more concerned with the price of money than its quantity. Central banks pursued their policy goals (typically price stability) by changing interest rates and affecting the incentives of borrowers and lenders, but the actual money creation was mostly outsourced to commercial banks, which ex-BoE Governor Mervyn King famously called ‘the alchemy of money’. The creation of central bank money - central bank reserves and physical cash — was usually driven by the demand of commercial banks. For example, in mid-December 2007, central bank money in the US constituted only 11.3% of the M2 money stock.

Post-crisis, interest rates were cut to near-zero levels very quickly, and for the purposes of further monetary loosening, central banks adopted various forms of ‘quantitative easing’ — that is, setting upfront targets for expanding the monetary base far beyond its usual levels by purchasing assets on the financial market. It is very important to note that the unique feature of QE was not that central banks purchased certain assets. Pre-crisis, central banks also purchased assets with newly printed money. The big difference is that while pre-QE, these purchases were driven by the demand of the banks of reserves, the post-crisis money-printing became supply-driven.
This report expands on the op-ed authored by Elliot Hentov in the Financial Times on 25 September 2018, “Half-empty policy toolbox is alarming ahead of the next downturn.”

Calculated as: fed funds rate at the end of the last quarter of expansion, minus the trough at the end of or after the recession.

Various studies estimate the equivalent of QE in terms of interest rates anywhere between 75bps and 400 bps; see, for example, R. De Rienzo, A. Ristinami (2018): A shows rate without a lower bound constraint.

There were many examples of this right after the 2008–2009 crisis, notably Term Rate, the distributional effect of quantitative easing/

There is no consensus in the academic community about the problem, for summary of key points of view see, for example, http://brueg.org/2014/10/the-distributional-effect-of-quantitative-easing/.

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1 The views expressed in this paper are the views of Louis de Montpellier, Elliot Hentov and Alexander Petrov as of 20/11/2018.

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