

It's Time to Look More Carefully at "Monetary Policy 3 (MP3)" and "Modern Monetary Theory (MMT)"

This article is for folks who are interested in economics, especially about how monetary and fiscal policy will work differently in the future. It will focus on Monetary Policy 3 (the new type that we will see more of around the world) and Modern Monetary Theory (a recently proposed new approach that has received a fair amount of attention). It comes in two parts. The first part is important for folks who care about such stuff but it's a bit wonky and the second which shows historical cases is very wonky so feel free to wade into this in whatever depth suits your interest.

Part 1: Understanding MP3 and MMT

When I look at economies and markets I look at them in a mechanical way much like an engineer would look at cause-effect relationships of a machine. To me the economic machine has a limited number of basic cause-effect relationships (see "[How the Economic Machine Works](#)") that can be put together in numerous ways that can lead to an infinite number of combinations, just like the 26 letters of the alphabet can be combined to make up an infinite number of words. More specifically there are two basic building blocks of economic policy, which are monetary and fiscal policy, and under these there are a few ways (taxing and spending for fiscal policy, and interest rates and quantitative easing and tightening for monetary policy) and under each of these there are various ways they can be configured. At the big picture level, monetary policy determines the total amount of money and credit (i.e., spending power) in the system, and fiscal policy determines the government's influence on where it's taken from (i.e., taxes) and where it goes (i.e., spending).

To me the most important engineering puzzle policy makers around the world have to solve for the years ahead is how to get the economic machine to produce economic well-being for most people when monetary policy does not work. I don't mean that monetary policy won't work at all; I mean that it won't work hardly at all in stimulating economic prosperity in the ways that we are used to having it stimulate economic activity, which are through interest rate cuts (what I call Monetary Policy 1) and through quantitative easing (what I call Monetary Policy 2). That is because it won't be effective in producing money and credit growth (i.e., spending power) and it won't be effective in getting it in the hands of most people to increase their productivity and prosperity. Hence I believe we will have to go to Monetary Policy 3, which is fiscal and monetary policy coordination that is of a form that we haven't seen before in our lifetimes but has existed in various forms in others' lifetimes or faraway places. It is inevitable that this shift will happen because it is inevitable that central bankers will want to ease when interest rates are pinned at 0% and when quantitative easing will be ineffective in achieving the goal. I recently refreshed my prior exploration of past cases and future possibilities of such coordination, which I will share below.

Modern Monetary Theory is one of those infinite number of configurations that is in my opinion inevitable and shouldn't be looked at in a precise way. For those of you who don't know what Modern Monetary Theory is, it's described here ([link](#)). It's described differently by different folks so it has slightly different configurations. For example, some might change fiscal policy so that there is a wealth tax that is used to eliminate student loans, and others might change taxes and spending in other ways, and there are an infinite number of ways these changes can be configured that we shouldn't delve into at this stage because that will drive us into the weeds and the particulars that will stand in the way of seeing the big important things. Also, people who are focusing on MMT as a package will limit their thinking to the specifics of that package rather than thinking about the wider range of MP3 policies to find the best one.

MMT's most important configuration is the fixing of interest rates at 0% and there is the strict controlling of inflation via the changing of fiscal policy surpluses and deficits, which will produce debt that central banks will monetize. In other words, whereas during the times we have become used to, interest rates moved around flexibly and fiscal deficits (often) and surpluses (rarely) were very sticky so interest rates were more important in producing buying power and the cycles, in the future interest rates will be very sticky at 0% and fiscal policies will be much more fluid and important and the debts produced by the deficits will be monetized. In case you didn't notice, that is by and large what has been happening and will increasingly need to happen. In other words, interest rates are now pinned near 0% in two of the three major reserve currencies (the euro and the yen) and there is a good chance that they will be pinned there in the third and most important reserve currency (the dollar) in the next economic downturn. As a result, fiscal policy deficits that are monetized is the contemporary stimulation configuration of choice. That existed long before there was a concept called "Modern Monetary Theory," though MMT embraces it. Putting labels aside, it is certainly the case that the configuration of having 1) an interest rate fixed at around 0%, 2) more flexible fiscal policies with debt monetization to fund the resulting deficits with 3) rigorous inflation targeting exists and is increasingly likely, necessary, and possible in reserve currency countries. An added benefit of this approach is that the money and credit created can be better targeted to fund the desired uses than the process of having the central bank buy financial assets from those who have financial assets and use the money they get from the central bank to buy the financial assets they want to buy. There are many historical cases of this happening (see the 1930s-1940s prewar and war periods which, as you know, I think are analogous), which offer worthwhile lessons about how this was and could be engineered.

The big risk of this approach arises from the risks of putting the power to create and allocate money, credit, and spending in the hands of politically elected policy makers. In my opinion, for these MP3 policies to work well, the system would have to be engineered in a way that decision making would be in the hands of wise, not politically motivated, and highly skilled people. It's difficult to imagine how the system will be built to achieve that. At the same time it is inevitable that we are headed in this direction.

Looking at Our Thinking about MP3 and MMT

In the following section, I will outline some of my thoughts on what MP3 is likely to look like in more detail, but the main points me and my Bridgewater colleagues believe to be true are:

- We agree with the notion that fiscal policy has to be connected with monetary policy to provide enough stimulus in the next economic downturn. That is because Monetary Policy 1 (based on moving interest rates) is in most cases either unable to happen alone or unable to happen much, and Monetary Policy 2 (based on central banks "printing money" and buying financial assets) has limited power to stimulate. For reasons explained in "Principles for Navigating Big Debt Crises," as long as countries have their debts denominated in their own currencies, the combination of monetary and fiscal policies would likely work to smooth out economic downturns, and the only things that stand in the way are the limited capabilities of economic policy makers and/or the limited political abilities to do the right things.
- We've described the coordination of fiscal and monetary policy as a type of Monetary Policy 3 (MP3)—and this is a critical policy tool when interest rate cuts (MP1) and QE (MP2) have limited effectiveness.
- We think that interest rate cuts and QE will be significantly less effective in the next downturn for reasons we've described in depth elsewhere. We also don't believe that monetary policy is producing adequate trickle-down. QE and interest rate cuts help the top earners more than the bottom (because they help drive up asset prices, helping those who already own a lot of assets). And those levers don't target the money to the things that would be good investments like education, infrastructure, and R&D.
- Obviously, normal fiscal policy is usually the way we handle those sorts of investments. But the problem with relying on fiscal policies in a downturn (besides them being highly politically charged) is that it is slow to respond: it has long lead times, you have to make programs, concerns over deficits can make it more challenging politically to pass fiscal stimulus, etc.
- Imagine instead if you had taxes operating in a swing way, the same way that interest rates move, so that it could be a semi-automatic stabilizer. If you had a recession you would have the equivalent automatic reduction in taxes. On the opposite end, a tightening would result in a rise in taxes.

- We could imagine semi-automatic increases in investments with high ROI to underfunded areas (e.g., education, infrastructure, R&D) rather than just going through financial markets to the areas that companies and investors find most profitable for them.
- Funding such things with money printed by the central bank means that the government doesn't have to worry about the classic problem of the larger deficits leading to more debt sales leading to higher interest rates because the central bank will fund the deficits with monetization (QE). As we've described several times before and have seen since the 2008 financial crisis, such monetization won't cause too much inflation. That is because inflation is determined by the total amount of spending divided by the quantity of goods and services sold. If the printed money simply offsets some of the decline in credit and spending that happens in an economic downturn, then it won't produce inflation, e.g., over the last decade central banks struggled with inflation being too low, not runaway inflation, while they have massively monetized debt.
- The big question is who can be relied on to pull these levers well (central bank? federal government?). These tools have the power to do real good but they also can do real harm if not used responsibly. So the governance and decision rights would need to be carefully engineered. That's a big topic I won't get into here.
- One specific policy that many MMT proponents have advocated for is a guaranteed jobs program. A lot depends on how that would actually be done. At a superficial level, I like the idea of people working to earn money through a government job in an economic downturn versus just getting welfare checks because staying employed is generally important for people's psychology/emotional health as well as producing good outcomes (like keeping our cities clean and helping each other).
- There are aspects of MMT that I disagree with. Here are just a couple:
 - I disagree with the notion that businesses don't make investments based on the cost of money and just make decisions based on business prospects. Both the cost of funds and business prospects are important. The cost of capital is a giant influence on the decisions of businesses to do things. For example, the low cost of capital was the reason US companies did huge amounts of share buybacks.
 - Some MMTers blame inflation primarily on businesses' excessive pricing power. While that might influence inflation, the bigger deal is that when you have a shortage of something (labor, commodities, etc.) and excessive demand for it, the price of that thing goes up.

What Monetary Policy 3 (MP3) Could Look Like

As I've noted, the policy tools that were sufficient to stimulate the economy in the last several cycles probably won't be enough this time around. Monetary Policy 1—cutting interest rates—is limited by very low/negative rates across the developed world that probably can't be lowered all that much more. Monetary Policy 2—quantitative easing—is limited by already very low longer-term interest rates/expected returns on assets and some central banks (especially the ECB) running low on bonds they can buy given current political constraints. Also, it is relatively ineffective in getting money and credit to those who don't have financial assets, and it contributes to the widening opportunity gap. For these reasons, I believe in the next downturn developed countries will need to turn to "Monetary Policy 3" (MP3). In this study we will 1) define MP3, 2) give examples of it, and 3) focus on what was done in the 1930s.

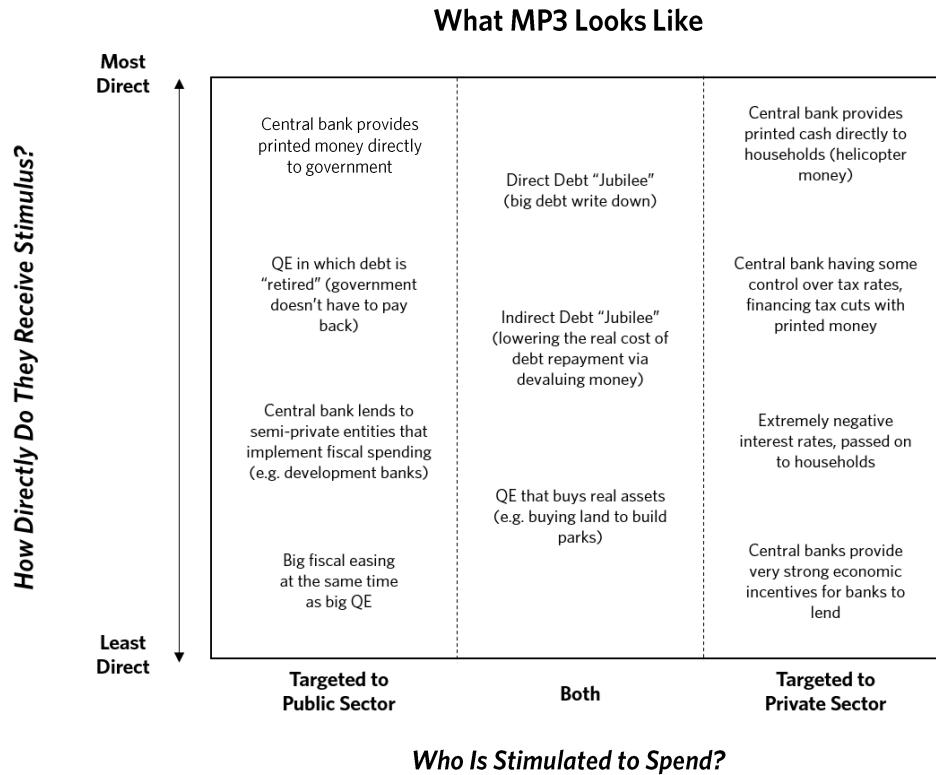
Monetary Policy 3 comprises monetary policies that are more directed at spenders than at investors/savers (the groups that MP1 and MP2 principally target). In other words, they are policies that provide printed money to spenders with incentives for them to spend it. These sorts of policies will undoubtedly be politically controversial for both central banks and governments. The big question is whether these policies will hurt or help productivity. For reasons explained in the book *Principles for Navigating Big Debt Crises*, as long as countries have their debts denominated in their own currencies, these policies would likely work to smooth out economic downturns, and the only things that stand in the way are the limited capabilities of economic policy makers and/or the limited political abilities to do the right things, if the productivity produced is more than the amount of money and credit that is produced and spent. That's why it's important for policy makers to work through these

political/other impediments and develop their “Plan B” now—what they’ll do when MP1 and MP2 don’t provide enough stimulus (e.g., buy equities, buy lesser quality debt, fund fiscal programs, etc.). Otherwise, working through those political considerations as the economy turns down might provide inadequate lead time, which can make the downturn much worse because there is nothing to offset the self-reinforcing downward pressures.

Below, I’ll share some of our prior research on what sort of forms these MP3 policies can take, updated with some recent examples.

Definition of Monetary Policy 3

Though most of us haven’t seen it in our lifetimes, it has existed in other lifetimes and other places. MP3 is a continuum of coordinated monetary and fiscal policies that vary who gets the money (private sector versus public sector) and how directly that printed money is provided (directly providing “helicopter money” to spenders versus more indirect means of financing spending). The following diagram maps many of the possible types of MP3 onto that continuum. In general, the more direct policies would be more effective, but also more politically difficult to do. And some of the least direct policies (or variants of them) have recently been used, but not at the scale that would likely be needed in the next significant downturn.



We'll walk through those policies in more detail (including some historical cases in which the policies were used), starting with MP3 policies that are targeted to the public sector:

- The least direct option is **an increase in debt-financed fiscal spending, paired with QE that buys most of the new issuance** (e.g., Japan in the 1930s, the US during WWII, and nearly every large developed country following the 2008 financial crisis).
- Central banks could **lend to/capitalize development banks** or other private/semi-private entities that would use the financing for stimulus-related projects (e.g., China in 2008).
- Finally, there can be **direct fiscal/monetary coordination**, where the central bank explicitly aims to monetize government programs. This could occur via:
 - An increase in debt-financed fiscal spending, where the Treasury isn't on the hook for the debt because:
 - The spending is paired with QE where the central bank retires the debt or commits to rolling the debt forever,
 - The central bank promises to print money to cover debt payments (e.g., Germany in the 1930s), or
 - Directly giving newly printed money to the government to spend**, not bothering to go through issuing debt. Past cases have included printing fiat currency (e.g., Imperial China, the American Revolution, the US Civil War, Germany in the 1930s, the UK during WWI) or debasing hard currency (Ancient Rome, Imperial China, 16th century England).

These MP3 policies support spending in both the private and public sectors. What follows is a laundry list of examples. To be clear, we aren't recommending any of these; we are just giving you tangible examples.

- **QE could be used to purchase real estate** or other real goods, which would then ideally be used for socially beneficial ends. For instance, buying up abandoned properties in Detroit (which would support private landholders) and demolishing them to build parks.
- **Big debt write-down accompanied by big money creation (the "year of Jubilee")**
 - The less direct version of this is via explicitly targeting higher inflation or currency devaluation to lower the real value of the debt over time.
 - Central banks explicitly using currency intervention/depreciation as a lever would help with this. For instance, the dollar devaluation during the Great Depression (paired with a law invalidating gold-linked debt) effectively produced a big debt write-off.
 - In certain cases, governments directly created or negotiated debt write-downs (e.g., Ancient Rome, Great Depression, Iceland recently).

These MP3 policies are targeted toward the private sector:

- MP3 policies could work through banks, providing them very strong incentives to lend. For instance, in addition to negative rates on excess reserves, the central bank could offer highly positive rates on required reserves—**making it materially more profitable for banks to lend** (versus building up excess reserves as central banks print money). Flavors of this program have recently been attempted in Europe, Japan, and the UK.
 - A different way of accomplishing this is incentivizing households to borrow through subsidized loans or guarantees. One example is the UK's "Help to Buy" program, providing a five-year, interest-free loan for up to 20% of the property value to some home buyers.
- So far, negative rates haven't flowed through to households much. Central banks could experiment with explicitly aiming to **disincentivize households from holding cash** to induce households to spend. For instance, some people have suggested a "carrying tax" on holding cash, at the same rate as the negative interest rate (this was experimented with in Europe during the Great Depression). Other people have suggested invalidating physical money and using digital money only to make it easier to apply a negative interest rate to all cash holdings. Obviously this would be extreme.
- Central banks could be **given control over changing income tax rates or sales tax rates**, perhaps within a band. They could then use it as an additional countercyclical lever to manage the economy, lowering taxes in recessions (pairing it with money printing) and raising taxes in good times.
- **Printing money and doing direct cash transfers to households (i.e., helicopter money)**. When we refer to helicopter money, we mean directing money into the hands of spenders of money to get them to spend (e.g., US veterans' bonus during the Great Depression, Imperial China).
 - How that money is directed could take different forms—the basic variants are a) to either direct the same amounts to everyone or to aim for some degree of helping one or more groups over others (e.g., to the poorer more than to the rich), and b) to provide this money either as one-offs or over time (perhaps as a universal basic income). These variants could be paired with an incentive to spend it—like the money disappearing if not spent within a year.
 - The money could be directed to specific investment accounts (like retirement, education, or accounts earmarked for small business investments) to target it toward socially desirable spending/investment.
 - One potential way to craft the policy is to distribute returns/holdings from QE to households instead of to the government.
 - As a variant of helicopter money, central banks could give drawdown protection or guarantee a rate of return for stocks and riskier assets in order to further increase asset prices and support spending.

To reiterate, we aren't offering any comments on the relative merits of these; we are just giving you a sense of the range and the number of historical cases that, if we were in the position of policy makers, we would be looking through. This examination process then has to consider what's legal, and what's politically acceptable, in each country. It's a big job to work out what's best, so that will take time. As a result, we believe that policy makers, especially central bankers, need to work hard on figuring this out now.

While we won't offer opinions on each of these, we will offer our opinion that the most effective approach is fiscal/monetary coordination, because it assures that both the providing of money and the spending of it will occur. If central banks just give people money (helicopter money), that's typically less adequate than giving them that money with incentives to spend the money. However, sometimes it is difficult for those who set monetary policy to coordinate with those who set fiscal policy, in which case other approaches are used.

As we look at these cases, keep in mind that sometimes the policies don't fall exactly into these categories, as they have elements of more than one of them and they exist on the continuum mentioned above. There is not even a clear line of demarcation between MP2 (i.e., QE) and MP3. For example, if the government gives a tax break, that's probably not helicopter money, but it depends on how it's financed. There can be the government acting as the spender, with the central bank financing that spending without a loan—which is helicopter money through fiscal channels.

Part 2: Historical Cases

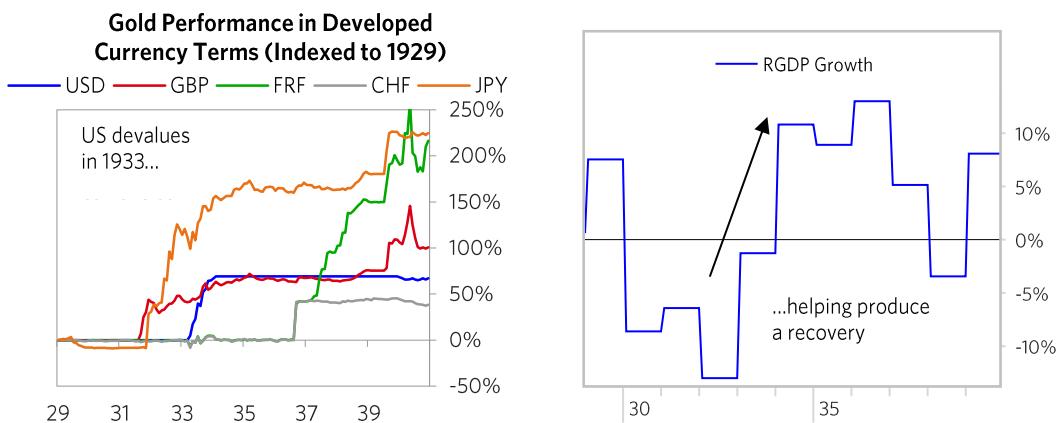
There are many historical cases of less effective MP1 and MP2 leading to cases of directing monetary policy to put I'd like to show you a bunch of historical cases on MP3 so you get a flavor of how they worked in the past without delving deeply into each because we would have to give you a big book of them to do that. The way I am going to do that is to first dig into Monetary Policy 3 during the Great Depression in the major economies at the time, and then superficially look at several other cases, including some QE cases that are beginning to cross the line to MP3 policies. What I will show you is long but interesting, and it includes how some things that we would consider implausible came about out of necessity. My hope is that in conveying such things we will all be able to open your thinking to a wider range of possibilities than you ordinarily might imagine. Because all of this material is rather long and wonky, I've posted it at www.economicprinciples.org for those of you who are interested. But since what happened in the global great depression is the most recent analogous case to today's environment, I'm including that below if you'd like to examine just one iconic case.

Appendix: Detailed Historical Examples of Monetary Policy 3

We are now going to show you a large number of examples, some explained in more depth than others. They all exemplify the principles about MP3 that we just reviewed. If you find that there are too many, just skip the rest.

Example 1: In the US during the 1930s

As we've previously described, President Franklin D. Roosevelt's policies—especially devaluing the dollar versus gold in 1933—helped create a “beautiful deleveraging.” But by 1935, policy makers were already expressing concern about how the US might offset the next economic downturn. In fact, that year the term “pushing on a string” was coined by a US representative questioning Fed Chair Marriner Eccles, who was concerned that the Fed could stop an expansion but couldn't do much to offset a contraction. In this section, we describe how the US complemented MP1 and MP2 (low rates and an increase in money) with coordinated, creative fiscal policy—and relied on fiscal and monetary coordination to pull out of the 1937 downturn.



One of Roosevelt's first major fiscal policy shifts was to engineer big debt write-downs as part of his “beautiful deleveraging” mix. He did that through a couple different policies. First, the US passed a law eliminating the “gold clause” from debt contracts. Up until then, most long-term debts had gold indexation clauses that would have meant the devaluation would increase nominal debt burdens significantly. Eliminating that clause kept debt burdens the same even as the dollar fell, effectively creating a broad-based debt restructuring. Of course, that meant that the government legislated the breaking of contracts in a way that benefited debtors at the expense of creditors. This case was taken to the Supreme Court and decided 5-4 in the government's favor.

Second, in 1933 Roosevelt created an agency to aid underwater mortgage borrowers, the Home Owners' Loan Corporation (HOLC). This agency exchanged distressed mortgages for government-guaranteed bonds, purchasing the mortgages above foreclosure value, which encouraged lender participation. Then the HOLC would restructure the mortgages, lowering the interest rate and extending the term of the loan to 15 years (mortgages then typically had a 5- to 10-year maturity). In some cases (though not typically), the HOLC would also reduce the principal to keep the loan-to-value (LTV) ratio for borrowers below 80%. The agency purchased 1 million loans, about 20% of all mortgages, spending \$4.75 billion (approximately 8% of GDP).

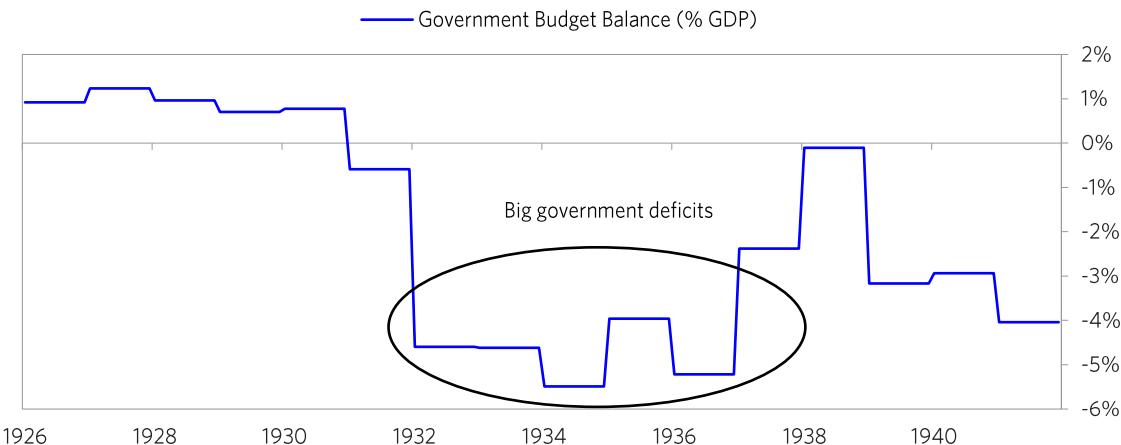
Roosevelt also created large government programs that directly employed people. The most significant was the Works Progress Administration (WPA), started in 1935. It lasted until the start of World War II and represented spending equal to approximately 2% of GDP annually. The WPA was focused specifically on employment, as it mandated that all projects spend at least 90% of costs on labor. Most projects were infrastructure-related, though there was also funding for white-collar and artistic work. The program hired librarians, musicians, writers, seamstresses, teachers, researchers, doctors, architects, and more. At its peak, it employed about 3.5 million people, over 6% of the labor force.

Further stimulus came in 1936, with a large early payment of a veterans' bonus. This program is a particularly good example of a government borrowing in order to make direct cash transfers to households. What the governments literally did was to give the veterans non-marketable bonds, which could be exchanged for an immediate payment or held until maturity, paying an above-market discount rate. Also, veterans who had previously borrowed from the government against their future bonus payment received interest forgiveness. Eighty percent of the bonds were cashed in 1936, and the average recipient received approximately \$500, more than the median individual annual income at that time. In total, the program represented a fiscal stimulus equal to approximately 2% of nominal GDP. The bonus recipients appeared to have a high tendency to spend the bonus and often used it to make down payments on purchases with credit, like residential investment and car purchases.

Throughout this period, the US rolled out a number of other programs that used fiscal incentives and macroprudential easings to stimulate credit and spending. These programs both supported existing borrowers and encouraged new lending for residential investment:

- In 1932, Congress created the Federal Home Loan Bank System to act as a quasi-central bank and provide funding for S&L banks, and to set underwriting standards and collateral restrictions.
- In 1933, the Home Owners Loan Act provided a federal guarantee to refinance mortgages on homes costing less than \$20,000.
- In 1934, the Federal Reserve was given the ability to set margin requirements (Regulation T) to purchase stocks. It began with "extremely lenient" margin requirements (according to a later Federal Reserve report) of 45%, at about the same level as a rule recently introduced by the New York Stock Exchange.
- In 1934, Congress created the Federal Housing Administration (FHA) to insure home loans, which allowed easier underwriting standards (80% LTV and 20-year maturity) for insurance-eligible loans than what the private market was providing. One FHA program insured 20% of loans for improving residential properties, with up to a 5-year maturity.
- In 1934, Roosevelt set up the Electric Home and Farm Authority to provide cheap loans for home electric appliances (under 10% interest rate, 5% down payment) for up to 36 months.
- In 1935, Congress eased LTV and maturity restrictions for national banks (used to be only up to 5-year loans and 50% LTV, now 10-year and 60% LTV).
- In 1937, the Federal Reserve lowered the equity margin requirement to 40% in response to the downturn (it had been increased in 1936).

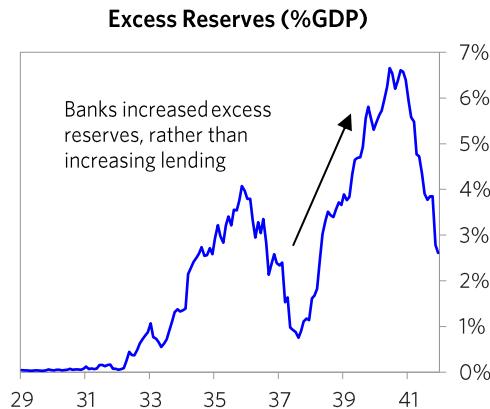
Roosevelt's fiscal spending programs were financed by a combination of spending cuts (Roosevelt cut back on the military early in his presidency) and deficit spending. This deficit spending wasn't primarily financed by direct QE. The persistent gold inflows that followed the US's devaluation increased the money supply: the banks, unwilling to increase lending to the private sector, significantly increased holdings of government debt to make a nearly guaranteed spread while funding government spending.



Government Response to 1937–38 Downturn

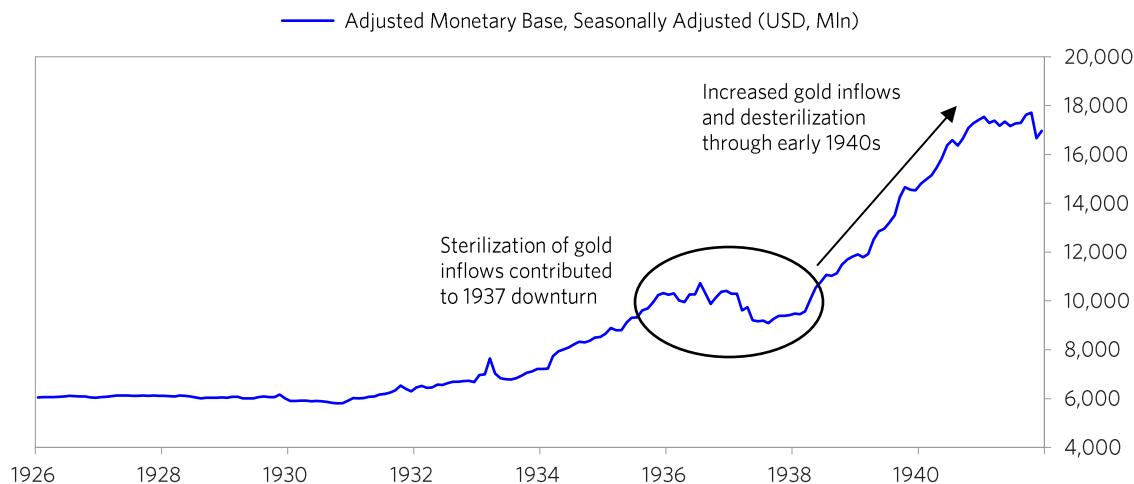
In 1937, the US entered a significant downturn—stocks declined more than 50%, growth turned negative, and the US slipped back into deflation. We won't discuss the causes of this downturn, as we've described them before, but reductions in the WPA employment program and the fading effects of the veterans' bonus in 1936 were significant contributors, along with devaluations in France and Italy causing dollar appreciation, sterilization of gold inflows, and increasing bank reserve requirements.

In 1938, the US eased monetary and fiscal policy in response to the downturn. In February of that year, Treasury Secretary Henry Morgenthau Jr. ended the gold sterilization program and began desterilizing the accumulated sterilized gold—moves akin to money printing. But policy makers discovered that their actions had very little effect—i.e., they were pushing on a string. From 1938 to 1940, increasing the money supply increased total bank reserves, but the new money was largely held as cash reserves, preventing it from flowing through to the real economy.



The government also passed a \$2 billion fiscal stimulus bill, which included a significant increase in the WPA program (it had its biggest year in 1938). While these measures had some effect, the initial improvement in the economy was muted. Industrial production did not recover to peak levels until late 1939, inflation hovered around zero until late 1940, and equities remained approximately 30% below the level of early 1937.

The eventual pickup in economic activity in the US seems largely attributable to World War II. Prior to the US entering the war, production and government spending increased in order to supply the Allies and prepare for potential war. Meanwhile, gold inflows accelerated as investors sought a safe haven from the political situation of Europe and as the Allies began to purchase American supplies (prior to the enactment of Lend-Lease in March 1941).



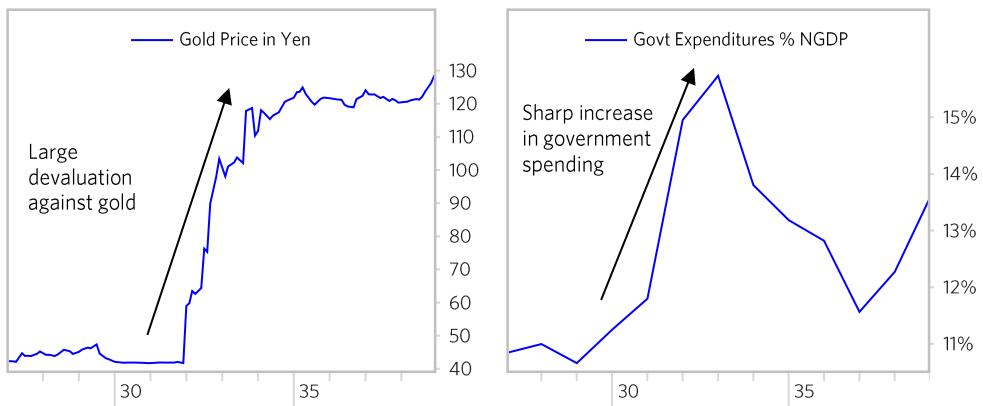
Eventually, the common cause of World War II united the country and created a political consensus around policies of coordinated and extremely stimulative fiscal and monetary policy. The Federal Reserve summarized its “primary duty” in wartime as “the financing of military requirements and of production for war purposes.” Eccles, who was chair of the Fed through 1948, described his work as “a routine administrative job...The Federal Reserve merely executed Treasury decisions.” During World War II, government spending massively increased, and the money supply more than doubled. The Federal Reserve monetized government spending by maintaining a cap on long-term Treasury bond rates of 2.5% and short-term rates of 0.375%, and by stepping in to buy bonds when rates approached those levels.

Though the world was less globalized in the 1930s than it is now, the debt problems were then (like now) still global and interrelated. We could show you similar developments in a number of countries but, in the interest of brevity, will only touch on what happened in Japan and Germany. Similar things happened in many other countries.

Example 2: In Japan during the 1930s

Japan's depression began toward the end of 1929. Three months after the Black Monday stock market crash of October 1929, Japan returned to the gold standard, setting the price equal to the high pre-World War I level. That arose because the political party gaining power believed the debt excesses of the past required fiscal and monetary restraint to fix the debt problems. The expensive currency and the deteriorating global economy caused severe deflation and a decline in exports. The resulting collapse in gold reserves resulted in a monetary tightening. Real growth shrank, and unemployment rose. During this depression phase, an uncontrolled contraction in incomes led to a surge in total debt as a percentage of GDP, from about 75% to nearly 110%. Stock prices collapsed at the same time.

As is classic, the pain of the depression led to a change in government, with policy makers willing to stimulate. Korekiyo Takahashi, a veteran policy maker who supported easier policy, was brought back as finance minister in late 1931. As one of his first acts in power, Takahashi removed Japan from the gold standard and devalued the currency, freeing monetary policy to create money and credit to monetize debt. Over the course of the year, the yen devalued about 60% against the dollar and gold, which supported a recovery in exports, price levels, and incomes. Takahashi also increased government expenditures by about 3% of GDP, with much of it spent on building up the military.

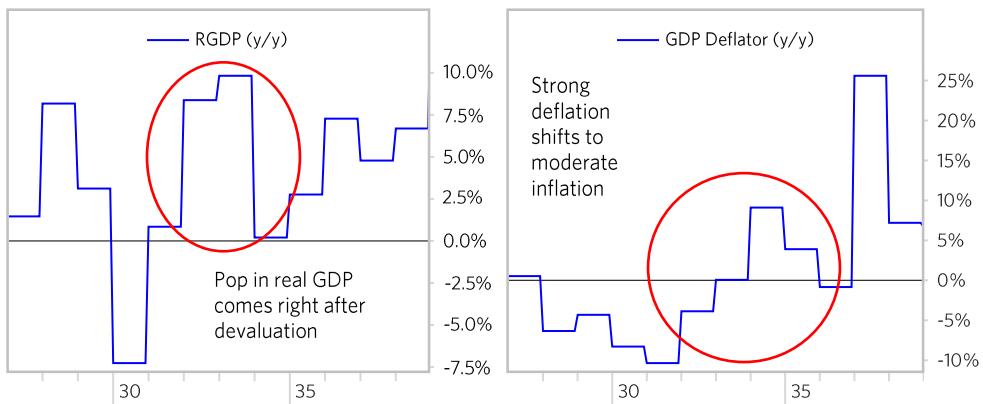


Takahashi also immediately put coordinated fiscal and monetary policy in place. He increased government expenditures by about 3% of GDP—while at the same time the BoJ held rates low and bought most of the newly issued Japanese debt (about 80% of the total between 1932 and 1935), most of which it resold to the public in an orderly manner. The deputy governor of the BoJ at the time wrote the following description of this tool:

"Issuing the bonds directly to the general public was unthinkable...Instead, it was thought more appropriate to issue the whole sum to the Bank of Japan, which would then sell them to would-be buyers...This device of issuing the national bonds may be a last resort, but it would help relieve monetary pressure as the Bank of Japan transfers money to the government in exchange for the national bonds which are then sold to market."

Some of the government securities bought by the BoJ were kept on its balance sheet, and the BoJ made other direct loans to the government as well. This monetization was at a comparable pace to the Fed's action in the 1930s, which was smaller than the monetization levels that we are seeing today. The biggest purchases came in the first year, at nearly 2.5% of GDP; the cumulative purchases and loans to the government during Takahashi's tenure from late 1931 to 1936 were about 5% of GDP. In total, BoJ assets (or liabilities) increased by about 0.7% GDP a year over the period.

These stimulus measures created conditions for a “beautiful deleveraging.” Short rates and long rates fell, conditions moved from highly deflationary to moderate inflation, and real growth shifted from contracting to expanding by nearly 6% a year—helping to gradually bring down debt levels. Naturally, these moves were bullish for equities and stimulative to exports, which went from about 10% to 20% of GDP.



Example 3: In Germany during the 1930s

Germany experimented with more direct monetization of government spending, which was a big driver of Germany's strong recovery from the Great Depression. Under Reichsbank President and Minister of the Economy Hjalmar Schacht, the government funded fiscal spending with IOUs issued by a shell corporation ("MEFO bills"), which circulated almost like hard currency, since the central bank agreed to redeem them for marks at any time. More specifically, the government paid many of the companies it worked with in MEFO bills, and the bearer could present his MEFO bill to any private German bank and receive cash; in turn, the private bank could present the MEFO bill to the Reichsbank within the last three months of the bills' earliest maturity for cash. The MEFO bills also circulated as IOUs among manufacturers and were used to pay workers, who in turn spent them on other goods and services. The bills paid 4% interest to discourage redemption for reichsmarks. Schacht used these bills to fund massive public works projects, including the construction of waterways and highways, and also to finance German rearmament. By 1939, around 40% of Germany's debt was in MEFO bills. Here is how Schacht described the instrument:

"The Reichsbank undertook to accept all MEFO bills at all times, irrespective of their size, number, and due date, and change them into money. The bills were discounted at a uniform rate of four per cent. By these means the MEFO bills were almost given the character of money, and interest-carrying money at that. Banks, savings banks, and firms could hold them in their safes exactly as if they were cash. Over and above this they proved to be the best of all interest-bearing liquid investments, in contrast to long-dated securities."

Other Historical Examples of Monetary Policy 3

In this section, we take a superficial look at other cases of countries using Monetary Policy 3 and creative fiscal policies. This isn't a comprehensive list—it leaves out a lot of cases, but it gives you a snapshot of the use of these tools in different contexts. We will start with some of the more recent cases and then will work backward in time.

Fiscal/Monetary Coordination

Examples of increases in debt-financed fiscal spending, paired with QE that buys most of the new issuance:

- **Japan 2013:**
 - Shinzo Abe campaigned in the 2012 Japanese general election on three "arrows" that he intended to coordinate to support growth: fiscal stimulus, monetary easing, and structural reforms. Shortly after taking office, Abe appointed Haruhiko Kuroda, an advocate for easier monetary policy, as governor of the BoJ, and Abe enacted a fiscal stimulus program. The fiscal stimulus (much of which was allowed to roll off in a fiscal tightening the following year) was equal to about 2% of GDP and consisted of tax cuts, earthquake reconstruction spending, and other investments, like green energy projects. As the government borrowed to fund these programs, the BoJ's increased QE program bought over 100% of bonds newly issued in Japan each year. Those purchases have continued to today.
- **US 2009-2010:**
 - The Federal Reserve launched its first QE program (QE1) in March 2009 as the government ramped up fiscal spending in response to the deepening recession—so it could be said that there was coordination, though it was never explicitly spelled out. The federal government enacted a combination of tax cuts, transfers to states (to prevent spending cuts as revenues fell), and a broad fiscal stimulus plan. During this time, government issuance increased by about 10% of GDP and the Fed bought about 75% of all bonds issued.

- **UK 2009-2010:**
 - The Bank of England's first QE program also launched at the same time as increasing government deficits. The government launched a range of fiscal stimulus programs including tax cuts and investment spending, but also funded significant increases in social welfare "stabilizers" as the economy deteriorated. During the BoE's first QE program, government issuance increased by about 10% of GDP and the BoE bought 55% of all bonds issued in the UK.

Examples of directly giving newly printed money to the government to spend, not bothering to go through issuing debt:

- **UK during World War I**
 - When liquidity was tight on the eve of World War I and people were seeking gold, the UK Treasury printed its own money called "Bradbury notes," and it had banks hand out these notes when people wanted money out of their accounts. Reportedly, the Treasury did it instead of the Bank of England because the BoE "could not prepare and print the required number of notes quickly enough." From a 1934 book by a British politician:
 - *"Private enterprise banking thus being on the verge of collapse, the Government (Mr. Lloyd George at the time was Chancellor of the Exchequer) hurriedly declared a moratorium, i.e. it authorized the banks not to pay out (which in any event the banks could not do), and it extended the August Bank Holiday for another three days. During these three or four days when the banks and stock exchanges were closed, the bankers held anxious negotiation with the Chancellor of the Exchequer. And one of them has placed upon record the fact that 'he (Mr. George) did everything that we asked him to do.' When the banks reopened, the public discovered that, instead of getting their money back in gold, they were paid in a new legal tender of Treasury notes (the £1 notes in black and the 10s. notes in red colours). This new currency had been issued by the State, was backed by the credit of the State, and was issued to the banks to prevent the banks from utter collapse. The public cheerfully accepted the new notes; and nobody talked about inflation."*
- **US during the Civil War**
 - During the Civil War in the 1860s, the Union government financed the war effort in part through printing money, "greenbacks," in order to avoid increasing debt. The greenback was used to pay soldiers and buy supplies, and was redeemable for goods and services. This money creation supported spending and produced inflation, and the greenback fell by about 60% versus gold, though it recovered about half that after the war. The government also, in effect, monetized its debts, expanding a system of national banks that were required to purchase government bonds (under the direction of Treasury Secretary Salmon Chase).
 - The Confederacy printed as well—"greybacks," which lost their value after the war.
- **American Revolutionary Period**
 - Prior to the American Revolution, the American colonies would print money to pay foreign creditors in Britain. In response, the British government moved to regulate the printing of colonial currency, with Currency Acts in 1751, 1764, and 1773.
 - During the American Revolution, both the states and the Continental Congress issued currency to fund the war effort. This produced significant inflation and devaluation in the currencies.
- **Debasement in 16th Century England**
 - Starting in 1542, the English crown debased silver coins to finance ongoing wars, repay previous external wartime debts, and fund other public expenditures, in what became known as "the great debasement." The silver content in each coin fell from 92% to 25% over about 10 years. Over that period, the crown attempted to legitimize the new money by instituting price controls and banning holdings of foreign currency and earlier coins that contained more silver. The timeline below goes through the debasement and how the new money was spent:

- Until 1542: English coins had enjoyed a good reputation for stability, as Parliament had long defended the standard of coins with 92.5% pure silver and gold coins at 99.5%.
 - 1542-44: England entered wars against Scotland and France that were funded by selling monastic land, raising taxes, and printing money.
 - May 1542: Henry VIII reduced the fineness of silver and gold coins to 75% and 98%, respectively.
 - April 1545: Pureness of silver coins reduced to 50%.
 - April 1551: Pureness of silver coins reduced a final time to 25%.
- **Imperial China**
 - China, having invented paper money, has a long history of printing money and giving it directly to people or using it to finance government spending. Some examples:
 - The Song dynasty introduced state-issued paper currency called *huizi* around 1160—it initially traded at a significant discount, until the government established faith in the currency by repurchasing large quantities of *huizi* using hard currency. The paper currency eventually lost most of its value around 1190 when it was increasingly issued to finance wars against Chinese dynasties to the north and the Mongols. Silver coin largely returned as the currency of choice.
 - When the Mongols took control (founding the Yuan dynasty under Kublai Khan), they reintroduced paper currency, called *Zhongtong chao*, in 1260—at first backing it with silver and making it fully convertible to ensure it maintained its value. But within a couple decades, they increased money printing by a factor of 10 to finance the conquest of southern China and the construction of a new capital in Beijing, forcing them to suspend full convertibility and causing the currency to fall. In 1287, they devalued the paper currency by 80% and introduced a new non-convertible currency, the *Zhiyuan chao*. Although the paper currencies continued to devalue as the Yuan dynasty weakened, paper currency remained the main unit of exchange through the first half of the 1300s.
 - Around 1300, Marco Polo wrote this about Mongol paper money: "*In this city of Cambalu [part of modern-day Beijing] is the mint of the grand khan, who may truly be said to possess the secret of the alchemists, as he has the art of producing money...this paper currency is circulated in every part of the grand khan's dominions; nor dares any person, at the peril of his life, refuse to accept it in payment. All his subjects receive it without hesitation, because wherever their business may call them, they can dispose of it again in the purchase of merchandise they may have occasion for; such as pearls, jewels, gold, or silver. With it, in short, every article may be procured...All his majesty's armies are paid with this currency, which is to them of the same value as if it were gold or silver. Upon these grounds, it may certainly be affirmed that the grand khan has a more extensive command of treasure than any other sovereign in the universe.*"
- **Debasement in Ancient Rome**
 - As the Roman Empire destabilized and the costs of its military became increasingly hard to support, the Roman Empire consistently “printed money” to fund government expenditures over several centuries by decreasing the amount of silver in state-issued coins and decreasing the size of the coins. This debasement of the currency is the logical extension of earlier policies that increased the money supply by spending down government hoards of coinage and melting down gold reserves. Without these large stockpiles, the government used debasement to create more money from the precious metals it had. Each round of “money printing” allowed the government to pay soldiers’ wages and fund other expenditures that supported activity, though it drove a lack of confidence in the currency over the longer term (a couple centuries). The timeline below gives an overview of this process of money printing.

- 27 BC-14 AD: Augustus worked to establish a standardized system of coinage for the empire. The silver denarius became the currency that was accepted as payment for commerce and taxation. Augustus set the weight of the denarius at 84 coins to the pound and around 98% silver.
- 64 AD: Emperor Nero reduced the weight of the denarius to 96 coins per pound and its silver content to 93%, which was the first debasement of this magnitude in over 250 years.
- 161-180 AD: Marcus Aurelius further debased the denarius to 79% silver to pay for constant wars and increased expenses.
- 177-192 AD: Emperor Commodus reduced the denarius to 104 coins to the pound and 74% silver.
- 198-217 AD: Emperor Caracalla lowered the denarius to nearly 50% silver to pay for the Roman war machine and his grand building projects. Around 200 AD, soldiers began to demand payment in gold or other commodities.
- 238-244 AD: Under Emperor Gordian III, the silver denarius was essentially replaced with a new competitor currency, the antoninianus.
- 268-270 AD: Emperor Claudius II reduced the antoninianus to a lighter coin that was less than 2% silver. Eventually, a series of new currencies was introduced and was subsequently debased by lowering the amount of silver they contained.
- 341 AD: Emperor Constans I diminished the nummus (the last coin in the succession) to only 0.4% silver and 196 coins per pound. The Roman monetary system had long since crashed, and price inflation had been spiraling out of control for generations.

Printing Money and Doing Direct Cash Transfers to Households (i.e., Helicopter Money)

- **Imperial China**
 - In 1390, Emperor Hung-wu (Ming Dynasty) printed the equivalent of about 2.5 years of income the government got from taxes. It was used to pay for agricultural purchases and for disaster relief, and was handed out to government officials. The overprinting meant that the notes, which had a nominal face value equivalent to a unit of grain, actually could purchase only one-fourth of that amount. By 1425, the notes traded for between 1/40th and 1/70th of that face value. The collapse of the currency eventually led to a return to metallic money (silver and copper) as the primary medium of exchange.

Big Debt Write-Down Accompanied by Big Money Creation

- **Loan Forgiveness in Iceland**
 - In 2008, after an extreme buildup in financial and household debt before the financial crisis, Iceland took a number of measures to reduce debt burdens/forgive debt for households. Because a large portion of household debts was either inflation-linked or foreign-denominated, the sharp depreciation of the krona produced a sharp rise in debt burdens. The government first imposed a moratorium on foreclosures and suspended debt service on foreign-denominated and inflation-linked loans. As a longer-term solution, the government imposed a debt restructuring plan that capped mortgage loan principal at 110% of the collateral. In total, the mortgage write-down has been estimated at \$1.6 billion—over 10% of Iceland's GDP. These write-downs have been borne by the banks, which were nationalized and recapitalized, and which defaulted on foreign obligations. There have been additional measures to help borrowers, including interest subsidies and further voluntary restructurings.

Some Recent Examples of Creative Fiscal Policies

Below, we explore cases of fiscal measures that, while not monetized or coordinated with central banks, are designed to support the economy. Of course, typical stimulus spending is used all the time by governments, so we focus more on creative fiscal measures. In particular, we look at a couple direct cash transfer measures in which fiscal policy encouraged others to spend more to stimulate the economy rather than the government itself doing most of the spending (like loan guarantees, government-subsidized lending, incentives for banks to lend more to the real economy, etc.). These measures have the potential to provide good “bang for the buck” for each dollar of fiscal spending. And depending on how they are structured, they can have spending flow into the real economy relatively quickly (compared to other, more centrally planned stimulus, which might take a while to be shovel-ready). A few examples:

- **China Today:** As growth slowed over the last year, policy makers responded with a coordinated and multi-pronged approach (dubbed “irrigation without flooding”) to support spending without triggering a renewed pickup in financial excesses or leverage. They injected liquidity into the banking system, directed it to finance increased local government bond issuance and infrastructure projects, implemented household and corporate tax cuts, and used regulatory levers to incentivize lending to the private sector. To varying degrees, the coordinated nature of these steps makes them good examples of MP3. More specifically:
 - The central government directed local government to ramp up infrastructure spending and ramp up muni bond issuance. Around the same time, the MoF issued window guidance strongly encouraging the banks to purchase the muni issuance coming online, and the PBoC injected liquidity into the banking system.
 - Further, policy makers have increasingly pursued targeted stimulation toward SMEs, mostly in the form of issuing window guidance and quotas to banks for them to direct lending toward the private sector. This helps ensure that more of the liquidity pushed into the system has gone to desired sectors versus shadow banking channels.
- **Korea in 1998** responded to debt problems in the corporate sector by encouraging households to lever up, with tax breaks on consumer credit cards and other incentives to spur consumer debt. This was part of a strategy to cushion the downturn during the Asian financial crisis and diversify from export-led growth toward more consumption-driven growth. It occurred at the same time that the state managed a deleveraging and debt restructuring of its large corporate conglomerates, *chaebol*. Between 1999 and 2003, Korea’s household debt grew from 40% to 60% of GDP. While it’s debatable whether the various incentives were the principal driver, they were an important stimulant. These included:
 - Tax benefits for merchants accepting credit cards.
 - Income tax deductions for consumers using them.
 - Reducing the regulatory capital requirement for specialty issuers, reducing the leverage limit for credit card issuers, and reducing the administrative ceiling on cash advances.
- **US “Cash for Clunkers” (Car Allowance Rebate System)**
 - In 2009, the US government introduced a program known as “cash for clunkers” that **provided a credit of up to \$4,500 for consumers purchasing a new car** and trading in an older, less fuel-efficient one. Over several months, the program gave out about \$3 billion in rebates and accounted for almost 700,000 new car sales.

- **Recent Creative Easing by the UK**
 - *Help to Buy:* The UK introduced a set of fiscal/macropredudential policies in 2013 called "Help to Buy" that were targeted at the housing market. The first policy was an equity loan incentive, under which the **government would give any home buyer an interest-free "equity loan" for 20% of the value of the purchase of a new home** and private sector lenders would make the remaining 75% LTV loan. This was intended to make loans for the purchase of newly constructed homes more attractive for both the households and the lender, as households only had to put 5% down, while lenders could make 75% LTV loans. "Help to Buy" also included a mortgage guarantee program whereby the government would take the second loss, after the 5% first loss tranche from the buyer, on a mortgage for a new or existing home purchase.
 - *Funding for Lending:* The Funding for Lending Scheme was started by the BoE in mid-2012 in an attempt to increase the supply of credit to households and businesses. Under the FLS, **UK banks could access cheap funding where the cost and quantity available were tied to the amount of credit extended to the domestic economy.**
- **European Commission Investment Plan for Europe (i.e., Juncker Plan)** is an infrastructure investment program announced by European Commission President Jean-Claude Juncker in November 2014 that initially aimed to unlock public and private infrastructure investments of at least €315 billion over the ensuing three years. The basic structure of the plan entails using the EU and European Investment Bank's funds to guarantee EIB investments of about €60 billion, which will help limit the risk to private investors, who would contribute the remainder of the funds. The program has since been extended to the end of 2020 with a target of at least €500 billion of investments.
- **China in 2008** stimulated the economy largely by directing local governments to spend on infrastructure, which was financed in part by central government borrowing, by encouraging bank borrowing by local governments at concessionary rates, and by encouraging issuance of corporate bonds to fund projects.

You get the idea. We could provide many more cases and explore them much more comprehensively, but we believe that we have already passed the point of diminishing returns.

To reiterate, we don't expect movements to these sorts of policies anytime soon, and we do believe that central banks do have a bit more capacity to have an effect with QE and currency devaluations. But we do expect that some version of these sorts of policies will occur in the intermediate future, and probably will take many people by surprise.

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