Helicopter Money:

Or How I Stopped Worrying and Love Fiscal-Monetary Cooperation

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ABSTRACT

During private deleveraging cycles monetary policy will largely be ineffective if it is aimed at stimulating private credit demand. What matters is not monetary stimulus per se, but whether monetary stimulus is paired with fiscal stimulus (otherwise known as helicopter money) and whether monetary policy is communicated in a way that helps the fiscal authority maintain stimulus for as long as private deleveraging continues. Fiscal dominance and central bank independence come in secular cycles and mirror secular private leveraging and deleveraging cycles, respectively. As long as there will be secular debt cycles, central bank independence will be a station, not a final destination.

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1. - EXECUTIVE SUMMARY:

The aim of this paper is to describe the nature of secular private deleveraging cycles and explain why during such episodes…

…(1) monetary policy on its own is ineffective as it lacks willing private borrowers to respond to monetary stimulus; that…

…(2) fiscal policy is highly effective, but on its own it may be politically constrained to embark on meaningful stimulus; and that…

…(3) fiscal-monetary cooperation under such macro constellations can help solve the problem that each authority faces on its own:…

…(4) fiscal policy can solve monetary policy's problem of a lack of borrowers by becoming a borrower and spender of last resort, and…

…(5) monetary policy can solve fiscal policy's problem of too much government debt by monetizing some portion of this debt, and so…

…(6) give the sovereign's balance sheet a "facelift" and hence the political license and the balance sheet capacity to borrow.

What this means is that that during secular private deleveraging cycles what matters is not monetary stimulus per se,…

…(7) but whether monetary stimulus is accompanied by fiscal stimulus for as long as the private sector deleverages, and…

…(8) whether monetary policy is communicated in a way that helps allay concerns over the debt-to-GDP impact of ongoing fiscal stimulus…

…(9) which in turn is the surest possible way to generate the nominal income growth necessary for the private sector to deleverage.

This cooperation framework is consistent with inflation (or nominal GDP) targeting frameworks at the zero bound.

However, it looks at the problem of sluggish growth and enduring deflation risks during secular, private deleveraging cycles through the lens of public and private sectoral financial balances (see Godley, 1996) and balance sheets, and not higher inflation expectations' impact on real rates and their potentially stimulative impact on the private sector's willingness to borrow and dis-save (see Krugman, 1999, Bernanke, 2002 and Eggertsson and Woodford, 2003).

Thus, in the cooperation framework, inflation targets are just a commitment device – that is, the means to an end (which is for the central bank to aid the fiscal authority to maintain stimulus until slack and deflation risks are reduced). In contrast, in the inflation targeting framework, inflation targets are not mere means, but the end (which is to incent the private sector to borrow and dis-save).

Both frameworks aim for stronger growth, lower unemployment and higher inflation, but go about achieving these targets using different policy tools, and importantly, in a different sequential order.

In the cooperation framework the central bank overtly subjects itself to become a partner of the fiscal authority in stimulating economic growth directly as a borrower and spender of last resort for as long as necessary in order to reduce economic slack and thereby root out deflationary dynamics – a target *reaffirmed* by strategy.

In the inflation targeting framework the central bank first generates expectations of negative real interest rates (via commitments to low rates for long, purchases of long-term bonds, or prioritizing employment over inflation) in hopes of the private sector then becoming a willing partner to borrow and dis-save in response to this stimulus – a target that's in and of itself the strategy.[1]

Indeed, the intense debate in recent years about central bank's appropriate policy targets, their re-tooling (or the "de-orthodoxing" of their tool kits) and the recalibration of their reaction functions should all be understood in the context of central banks' struggles to credibly meet their inflation and (in some cases) employment targets.

The evidence is still unfolding as to which of these frameworks will deliver. In this paper we argue that simple inflation targets without being reinforced via fiscal-monetary cooperation will fail.

From the angle of what happens to the consolidated balance sheet of the fiscal and monetary authorities, both frameworks look the same.[2]

However analytical exercises that promote the need for central banks to "credibly promise to be irresponsible" (see Krugman, 1999) to generate inflation and negative real interest rates rarely, if ever discuss balance sheets.

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[1] This is a problem that is somewhat reminiscent of the case of a cart being put in front of a horse (or the chicken and the egg problem).

[2] This is because both involve the purchases of government bonds (but, as noted before, the former in order to aid the fiscal authority maintain stimulus and the latter to stir up inflation expectations).

This is a mistake, as the balance sheet perspective to being "irresponsible" offers important insights as to how monetary policy can help the fiscal authority behave irresponsibly as well.

And this is crucial as fiscal "irresponsibility" (running large deficits despite large deficits as far as the eye can see) may in fact be far more important at the zero bound than monetary irresponsibility, as a strategy of aiming for negative real rates may not work if the private sector is intent on deleveraging.

This reality has been acknowledged by none others than the leading proponents of prescribing higher inflation (and thus low real interest rates) as the preferred monetary cure for economies stuck in a liquidity trap at the zero bound (see Krugman and Eggertsson, 2010).

Similarly, policy prescriptions for fiscal expansion in depressed economies at the zero bound tend to ignore the political hurdles to stimulus of already high (or unsustainable, over the medium to long-term) public debt-to-GDP ratios (see for example the recent works of Koo, 2009, Summers and DeLong, 2012 and Wolf, 2012).

A consolidated balance sheet perspective (which is implicit in our cooperation framework) offers some insights into how central bank communication at the zero bound can be used to clear these political hurdles and grant the fiscal authority a license to borrow.

This approach also helps to understand why financial repression (see Reinhart and Sbrancia, 2011) may be less potent in dealing with debt overhangs today than it was in the past: while negative real rates do ease debt service burdens for governments and the private sector, they help growth only on the margin. A key ingredient of post-WWII public debt reduction via financial repression was the growth that private borrowing (on the back of repressed rates) engendered. This is missing today. Something else will have to take its place.

Our analysis should not be read as an "op-ed" on what policy should be, or that policymakers should know better.

We are aware of the political and institutional constraints surrounding policy going "all in" given that unprecedentedly aggressive monetary policies, by the standards of orthodoxy, have yield disappointingly small positive results (see Kohn, 2012).

Rather than a normative analysis (even though it is), our work should be read as a forecast of the path that policymakers are likely to take and their ultimate destination: fiscal-monetary cooperation, otherwise known as "helicopter money" (see Bernanke, 2002).

The ultimate message of our paper is that while central banks may fear fiscal dominance, they will not be able to avoid it.

Fiscal dominance and central bank independence come in secular cycles and mirror secular private leveraging and deleveraging cycles, respectively. That is, as long as there will be secular debt cycles, central bank independence will be a station, not a final destination.[3]

This paper builds on our earlier work that provided an historical overview of episodes when orthodoxies came in conflict with democracy and were overruled by politics (see McCulley and Pozsar, 2012).

In our present work, we transition from using history as guidance to identify the optimal policy mix *du jour* and focus instead on explaining the economic logic of why orthodoxies will continue to be discarded in the advanced world and why the democratic process will ultimately "corner" policymakers into fiscal-monetary cooperation.

In the process, we derive a policy map that depicts where specific advanced countries' fiscal-monetary policy mixes are relative to each other and where they are relative to helicopter money (see Figure 1 on page 6 which we intend as a "teaser" – the reader should *not* aim to understand it upfront; our paper explains how to read it step by step, and the reader should then revisit Figure 1 at the end).

What the map of the shadow banking system (see Pozsar, 2008 and Pozsar, et al, 2010) was to understanding the intricacies of credit flows in a world on a secular private leveraging cycle (the forward Minsky journey), this map of unorthodox policy options is to understanding policy options in a world on a secular private deleveraging cycle (the reverse Minsky journey; see McCulley, 2009).

Based on this map, our conclusions are not upbeat. While monetary orthodoxies are being gradually overruled, fiscal orthodoxies of austerity and balanced budgets remain entrenched and risk chaining the advanced world into a state of large output gap torpor or worse.

Finally, two observations are in order. First, our paper applies to large, relatively closed, advanced economies that issue their debt in their own currencies, have monetary sovereignty (that is the ability to monetize debt), and enjoy the luxury of a relatively stable demand for their debt instruments from global investors (the U.S, the U.K., Japan and the creditor countries of the Eurozone). Our paper

[3] In this context, flexible inflation targeting may well be a "policy for all seasons" (see Carney, 2012), but the means (interest rates or helicopter money) with which inflation targets are met and the state (independence or fiscal dominance) in which central banks achieve them may vary dramatically.

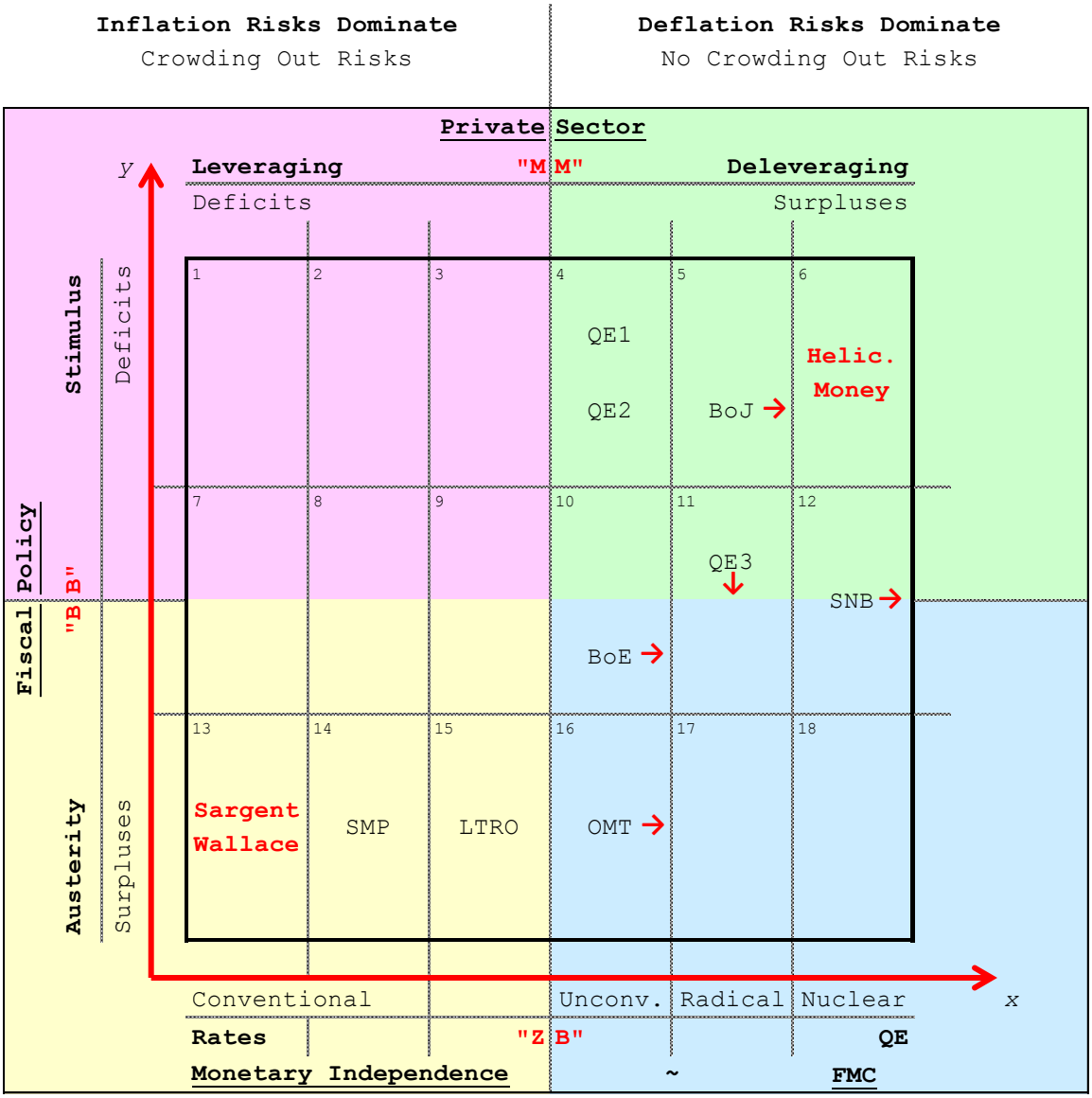
does not apply to small, open economies who operate under some form of a currency peg that preclude them from printing at will (for example, Hungary and the peripheral Eurozone countries come to mind).

Second, our paper focuses on the issue of how to boost growth *now*. We leave the discussion of the historical cases and political dangers of fiscal-monetary cooperation to forthcoming work. Suffice it to say for now that the political risks of helicopter money should not be overblown. If the political process was able to commit to central bank independence and low inflation targets in the past, it is unclear why it would abuse the idea of controlled monetization of debt during deleveraging cycles (also see Woodford, 2012 and Turner, 2013).

The balance of this paper is organized in nine sections.

Section two describes secular leveraging and deleveraging cycles and places them into a fiscal-monetary policy matrix. Section three discusses the dominant policy concerns during leveraging and deleveraging cycles and how monetary policy responds. Section four discusses the varietals of unconventional monetary policy. Section five discusses the importance of central bank communication strategies in a liquidity trap. Sections six and seven discuss the evolution of the fiscal-monetary policy mix in the U.S. since 2008, and how major advanced countries' policy mixes stack up against each other and helicopter money, respectively. Section eight describes the life-cycle of central bank independence. Finally, section nine concludes.

Figure 1: The Global Macro Chessboard



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

2. – THE SECULAR DEBT CYCLE:

The first exhibit (see Figure 2) plots the private sector's general attitude to debt and the general mood of animal spirits.[4]

The left side of the exhibit corresponds to secular private leveraging cycles, when the private sector borrows and dis-saves.

The right half of the exhibit corresponds to secular private deleveraging cycles, when the private sector reduces debt and saves.

The key drivers of secular debt cycles are asset prices which in turn are driven by animal spirits and interest rates.

Animal spirits refer to those of both borrowers and lenders. The two jointly determine credit demand and supply, respectively.

The switch from leveraging to deleveraging is "binary" and is triggered by a collapse in the price of assets that underpin loans.

The inflexion point in a private leveraging cycle is also known as the Minsky Moment ("MM") (see McCulley, 2007).

Macroeconomic theory and policymakers generally assume that the private sector is always in a secular leveraging mode. But it is not.

And when it's not macro theory and the policy playbook are turned on their head: black becomes white and unorthodox becomes orthodox.

The second exhibit (see Figure 3) builds on the first by adding a fiscal and monetary policy dimension to it.

The horizontal (x) axis represents monetary policy. The vertical (y) axis represents fiscal policy.

At the intersection of the axes fiscal and monetary policies are the tightest: interest rates are high and the budget is in surplus.

Monetary policy gets easier as we go right along the (x) axis. Fiscal policy gets easier as we go up along the (y) axis.

Midway through the (y) axis we pass the point of balanced budgets ("BB") – the point where fiscal policy is neutral.[5]

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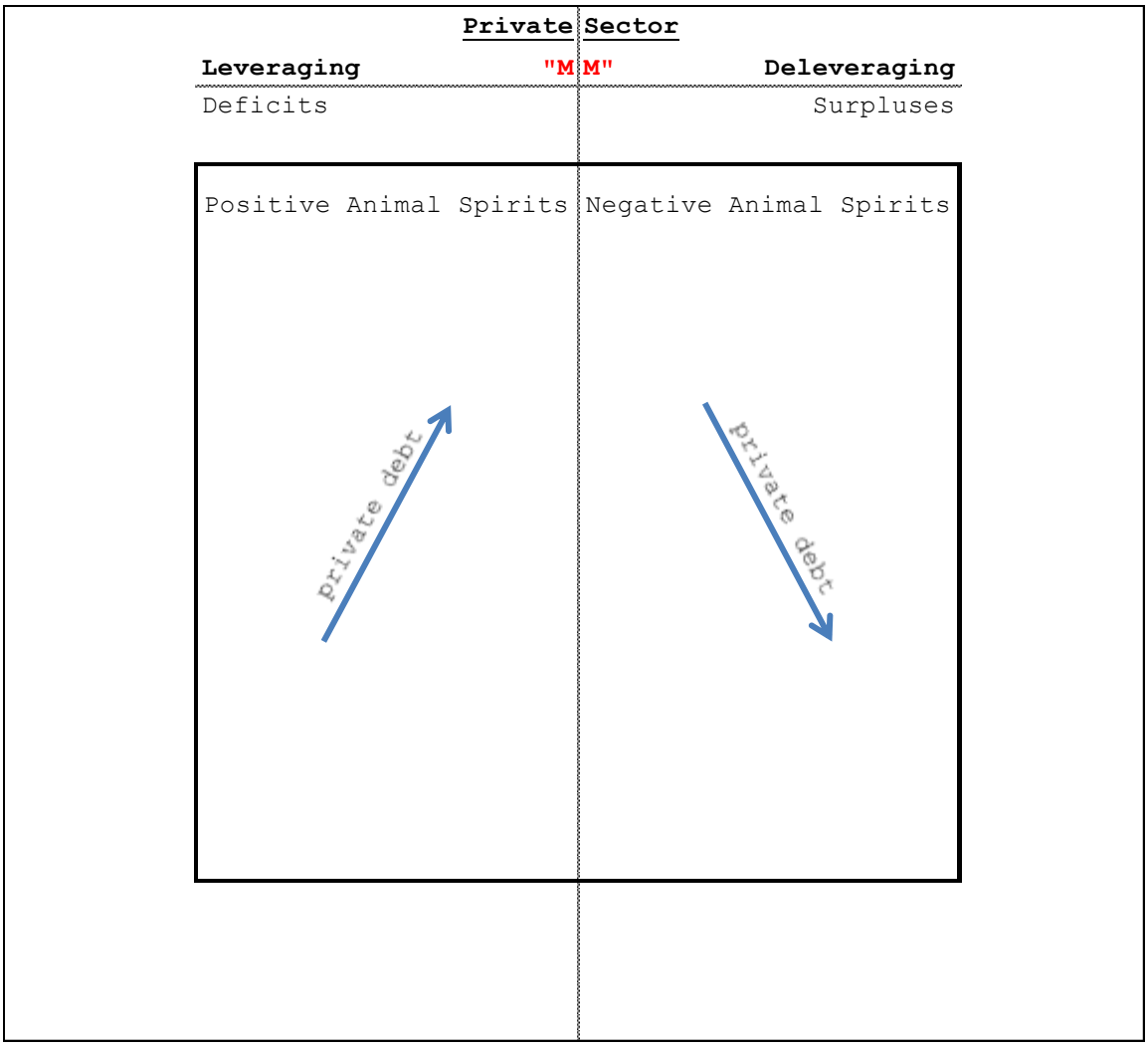
[4] We do not distinguish between household and corporate leverage cycles. With households being the ultimate source of final demand, corporates are unlikely to increase their leverage today if households continue to deleverage.

The line that runs across the balanced budget ("BB") point divides the exhibit into a northern and a southern half.

North of the line, fiscal policy is expansionary (stimulus). South of the line fiscal policy is contractionary (austerity).

Figure 2: Secular Leveraging and Deleveraging Cycles



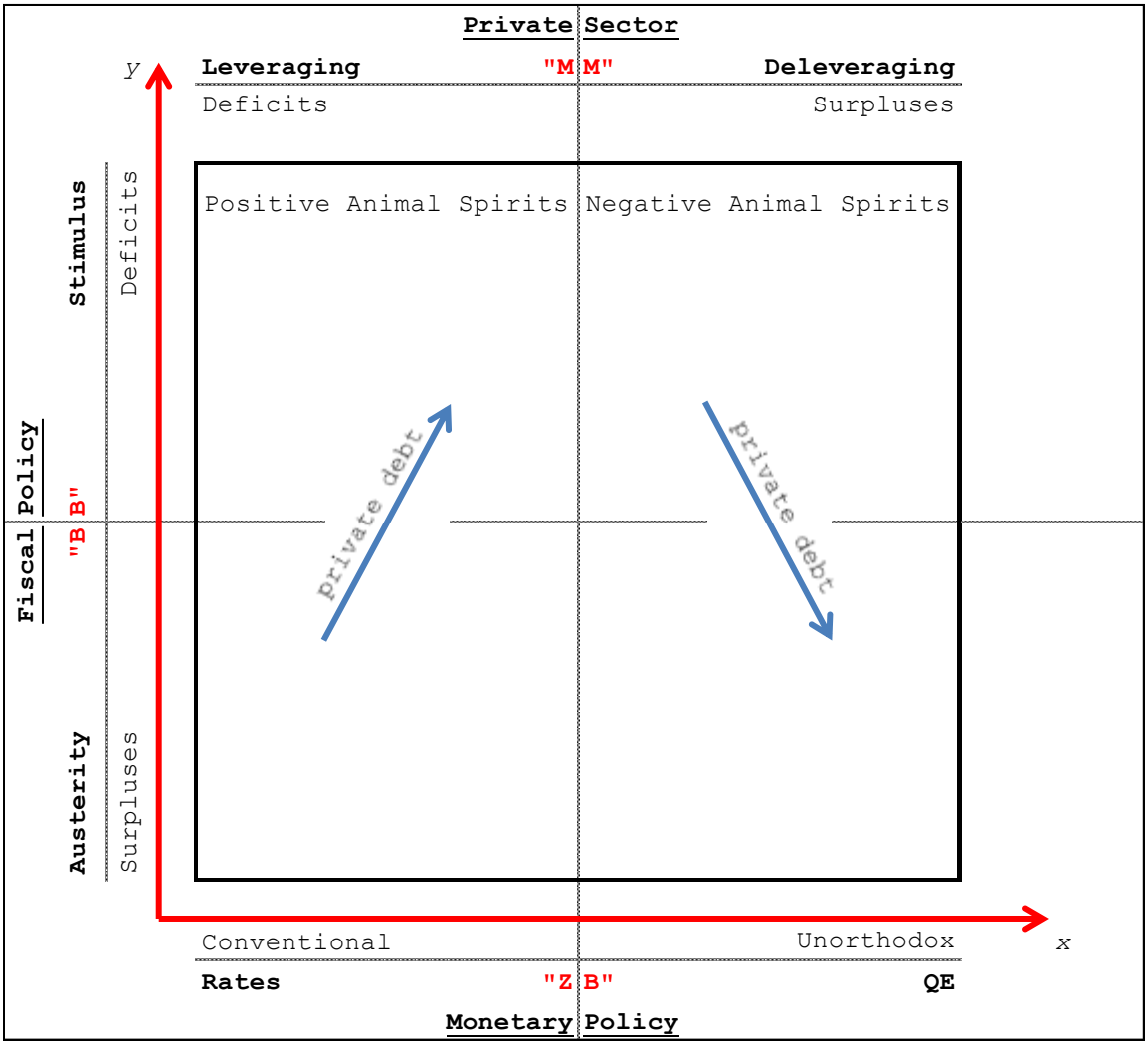
Source: McCulley and Pozsar (2012)

Midway through the (x) axis we reach the point of the zero bound ("ZB") – the point below which policy rates cannot go.

[5] We mean "neutral" in a cyclically adjusted sense.

The line that runs across the zero bound ("ZB") point divides the exhibit into a western and an eastern half.[6]

Figure 3: The Secular Debt Cycle in a Fiscal-Monetary Policy Matrix



Source: McCulley and Pozsar (2012)

West of the line monetary policy is conventional: short-term interest rates are positive and are the main policy tool.

East of the line monetary policy is unorthodox: policy rates are zero and quantities (i.e., money printing or QE) are the main tool.

[6] The line marking the Minsky Moment ("MM") corresponds with the line marking the zero bound ("ZB"). This is because when debt-fuelled asset price bubbles burst, the shock is typically large enough to push the policy rate to zero.

Central bankers are familiar with the western half of the exhibit that is, managing the economy against a backdrop of leveraging cycles.

But they are unfamiliar with the eastern half of the exhibit that is, managing the economy against a backdrop of deleveraging cycles.

All post-WWII business cycles in large advanced economies have played out against a secular private leveraging cycle.

On the other hand, deleveraging cycles are rare with the exception of the Great Depression, Japan and the advanced world today.

3. – VARYING POLICY CONCERNS:

The balanced budget ("BB") and zero bound ("ZB") lines split the exhibit into four quadrants, yielding a map (see Figure 4).

We discuss each quadrant by first asking whether the private sector is in a secular leveraging or deleveraging mode and the fiscal policy stance private debt dynamics are paired with. We then highlight policy concerns in each quadrant and how monetary policy responds.

In the purple north-west quadrant of the map, the private sector and the government sector are both running financial deficits.[7]

Such macro configurations may potentially involve crowding out and fat tail risks of inflation.

The monetary response is to tighten until inflation risks recede and/or the government learns some unpleasant monetarist arithmetic.

The result is a cyclical recession, but no damage to the private sector's animal spirits or the underlying secular leveraging cycle.

When the policy interest rate is lowered the private leveraging cycle resumes – monetary policy is effective.[8]

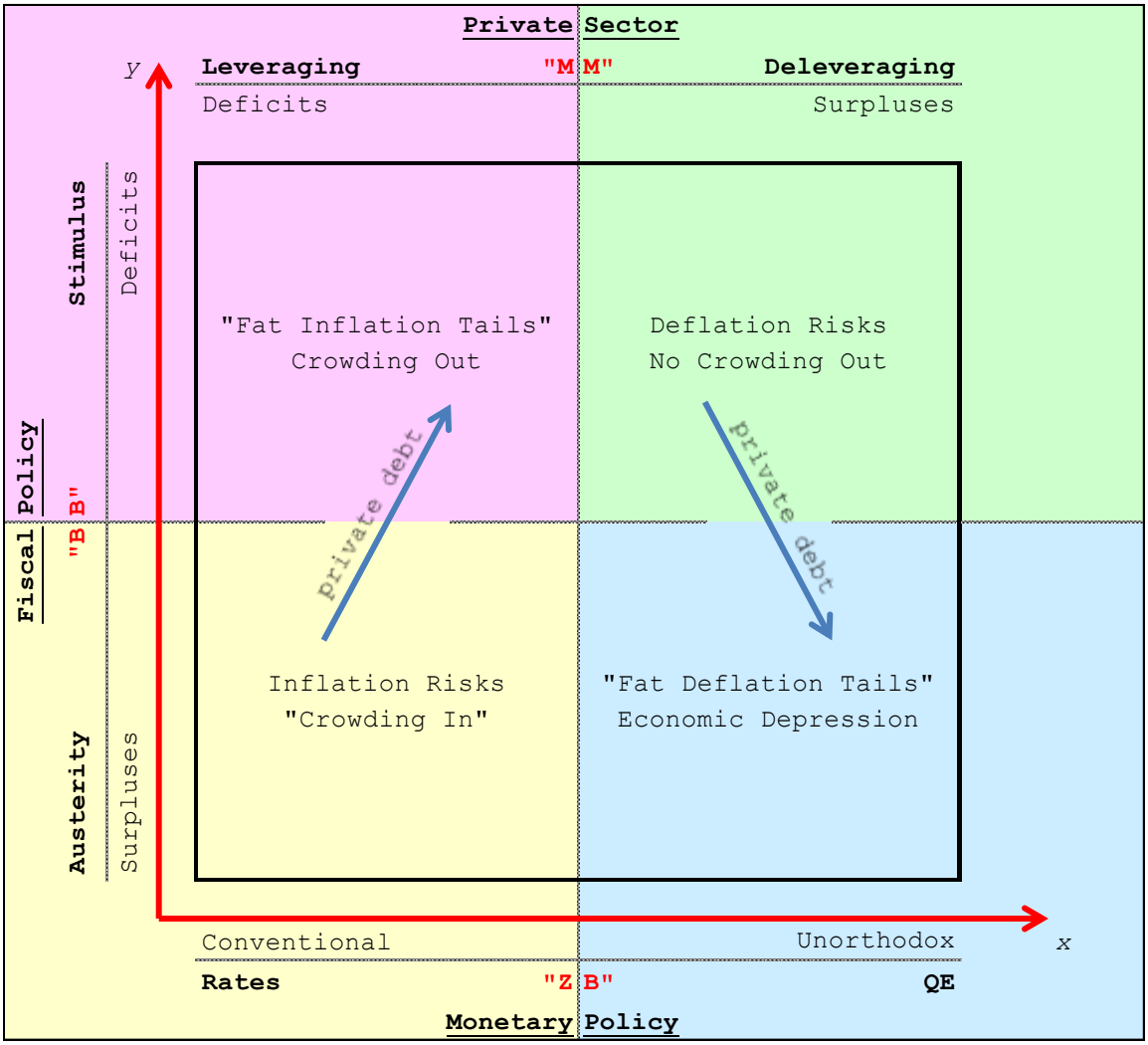
A new business cycle begins but with the government having been disciplined by the central bank, fiscal deficits are now gone.

[7] Correspondingly, the rest of the world (RoW) is running current account surpluses (not shown).

[8] Monetary policy is effective because during leveraging cycles, the private sector's secular demand for credit is positive on net and hence always responsive to lower interest rates.

Thus, in the yellow south-west quadrant, the private sector is still running deficits but the public sector is now running surpluses.[9]

Figure 4: Varying Policy Concerns



Source: McCulley and Pozsar (2012)

Such periods are certainly not likely to see any crowding out - fiscal surpluses may even be "crowding in" private borrowing.[10]

Since excessive private borrowing carries inflation risks, the monetary response here too is to tighten until inflation risks recede.

[9] The RoW's current account balance may be positive or negative, depending on the degree of sectoral offsets domestically.

[10] This is possible if lower fiscal deficits "pull down" the Treasury yield curve and thereby (all else equal) private borrowing costs as well.

But if monetary policy is too easy for too long (for whatever reason), a credit-fuelled asset price bubble may develop.

And when rates are finally raised (as they inevitably will be) the bubble bursts and asset prices collapse.

The collapse in asset prices renders animal spirits enduringly negative and the private sector intent on balance sheet repair.

The result is a switch to a secular deleveraging cycle, where net private credit demand turns negative and the private sector embarks on a long (possibly decades-long) process of balance sheet repair.

The central bank responds by cutting the policy rate to zero but in vain: when the above dynamics set in not even zero rates can reverse negative net private credit demand.

By losing its usual "partner" to respond to stimulus, monetary policy on its own becomes ineffective in managing growth.

The economy falls into a liquidity trap (see McCulley and Pozsar, 2012) and on our map we transition to the green north-east quadrant.

Here the private sector is running surpluses (that is, it is deleveraging) and the government is running deficits.

Government deficits are not necessarily a sign of activist fiscal policies, but simply letting automatic stabilizers run their course.[11]

No crowding out is likely for obvious reasons: with the private sector paying off its debts the government is a lone bidder for funds.

The balance of risks flips from inflation to deflation, which depends on the extent to which fiscal policy offsets private savings.

With policy rates already at zero, central banks respond with unorthodox, quantity-based (QE) policy measures but still in vain:…

…deleveraging renders even unorthodox monetary policies ineffective in stimulating private demand for credit and hence growth.

Without the fiscal authority borrowing the private sector's increased savings (and hence redeploying them in the economy), growth – the single most important factor for the private sector's ability to deleverage (i.e., to reduce debts relative to GDP) – would collapse.

[11] Changes in the RoW's current account balance depend on the degree to which fiscal policy offsets increased private savings.

This highlights fiscal policy's crucial role as a borrower and spender of last resort during private deleveraging cycles.

But maintaining fiscal deficits for long periods (for as long as the private sector deleverages) is politically difficult in peacetime.

If calls for austerity are heeded while private deleveraging is underway, we slide over to the blue south-east quadrant.

Here both the public and the private sectors are running financial surpluses.

With both domestic sectors saving at the same time, signs of Keynes's paradox of thrift forcefully emerge.

The dominant macroeconomic risks become economic depression and fat tail risks of deflation (crowding out is obviously no concern).[12]

Monetary policy may respond with all the stimulus it wants via QE, but with no borrowers left this will be even more in vain.[13]

It is obvious then that policymakers should try to avoid by all means falling into the blue quadrant, by ensuring that at least one sector of the economy is borrowing and spending.

But monetary policy can only move horizontally and not upward towards where the green quadrant (that is, public credit demand) is.

Put differently, monetary policy can influence the price of credit, but not the demand for it!

And this means that responsibility for avoiding the blue quadrant rests entirely with fiscal policymakers.

Fiscal policy makers can do this by keeping policy "northbound" on an expansionary path for as long as the private sector deleverages.

With this fiscal prescription in hand, the next question becomes what type of monetary policy is ideal in the green quadrant.

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[12] Under these circumstances, the RoW is certain to swing to a current account deficit, but not because it imports more. Rather, because a depression implied by a paradox of thrift leads to mass defaults and losses on its accumulated financial assets.

[13] Pure monetary stimulus in the form of exchange rate devaluations can work for small, open economies. However, they would not work for the large, open economies (like the U.S.) that our map applies to, especially if such large economies are also the issuers of the world's reserve currency.

4. – UNCONVENTIONAL MONETARY POLICY VARIETALS:

We have already shown that monetary policy is not omnipotent. Both conventional and unconventional monetary policies aimed at stimulating private demand for credit are ineffective during private deleveraging cycles (see Figure 5a). This means that the ideal monetary policy will have to be effective "in a different sense".

However, getting to this conclusion is a process in the real world and monetary policy goes through many rounds of trial and error.

In this process it explores a broad repertoire of unorthodox policy varietals (see Figure 5b, additions to the (x) axis).

First, monetary policy turns "unconventional". This step refers to plain vanilla asset purchases – or plain vanilla QE.[14]

The stated aim of QE here (as communicated by central banks) is to lower yields and raise equity prices to spur private borrowing.

This implies that central banks still believe (mistakenly) that the private sector is still in the leveraging hemisphere of the map.

When it becomes obvious that unconventional policies won't work either, monetary policy next turns "radical".[15]

This step refers to asset purchases, coupled with changes in the central bank's reaction function.

The aim of QE is unchanged, but the central bank now promises to continue with QE even after an economic recovery has taken hold.

This means the elevation of the growth mandate relative to the inflation mandate - the reverse Volcker Moment (see El-Erian, 2012).[16]

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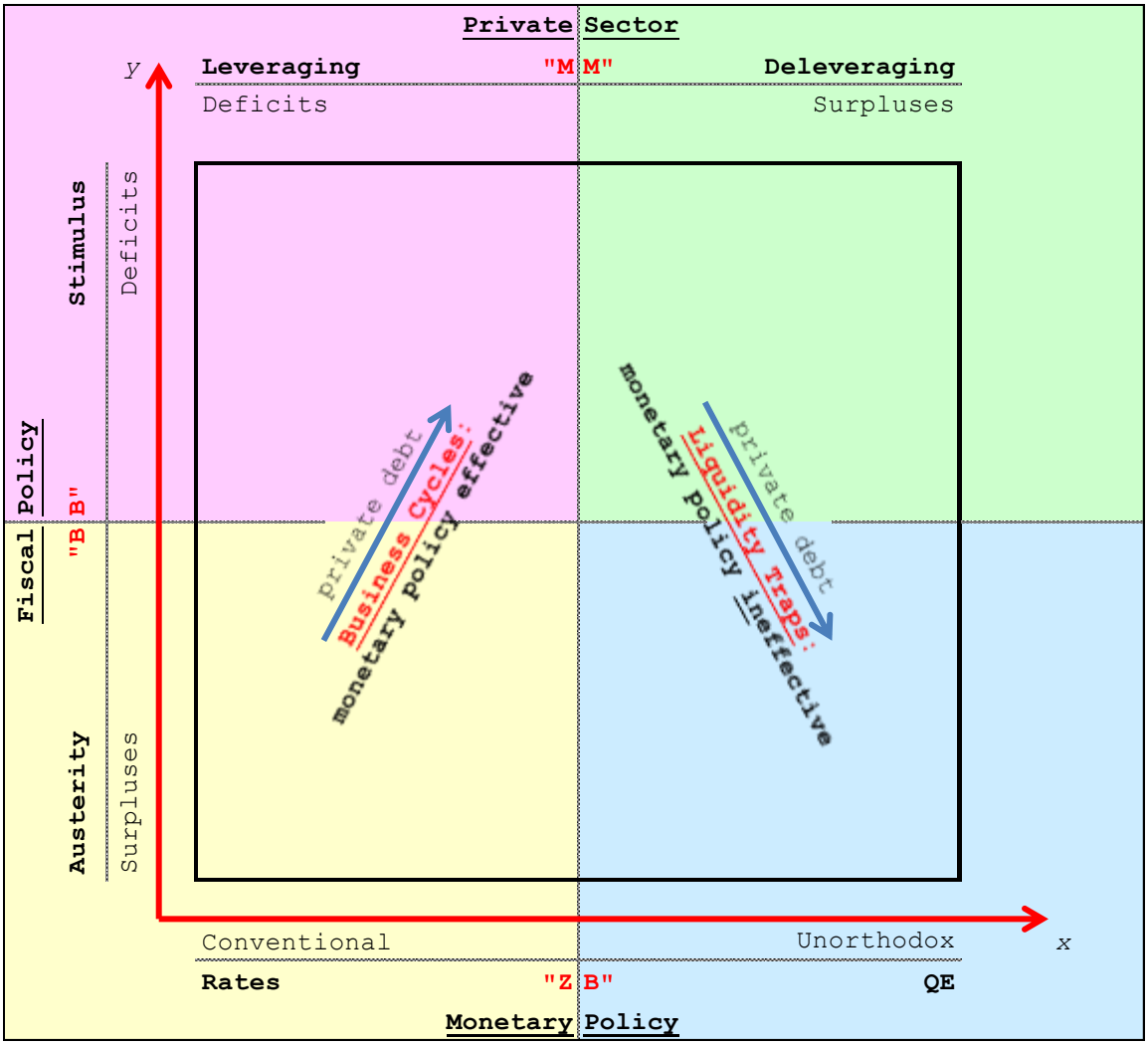
[14] The assets purchased may be government debt or private securities, but for the present purposes this detail is not the point.

[15] For examples of admissions about the ineffectiveness of unconventional policies see for example the Fed turning radical by elevating its unemployment target over its inflation target at its September 2012 policy meeting and recent hints by BoE Governor King that he "appear[s] to have lost faith in the ability of "conventional" QE to resuscitate the economy" (see Gilt rally fades as prospect of QE dims, Financial Times, November 9, 2011).

[16] Here we would note that the elevation of one target relative to another is one thing, and achieving these targets is another. This is where the necessity of applying of ever more aggressive tools (low rates for long; asset purchases in limited and then unlimited amounts; FX intervention; and ultimately, fiscal-monetary cooperation) becomes increasingly evident.

When it becomes obvious that radical policies won't work either, monetary policy ultimately turns "nuclear".

Figure 5a: Monetary Policy Is Not Omnipotent



Inflation Risks Dominate
Crowding Out Risks

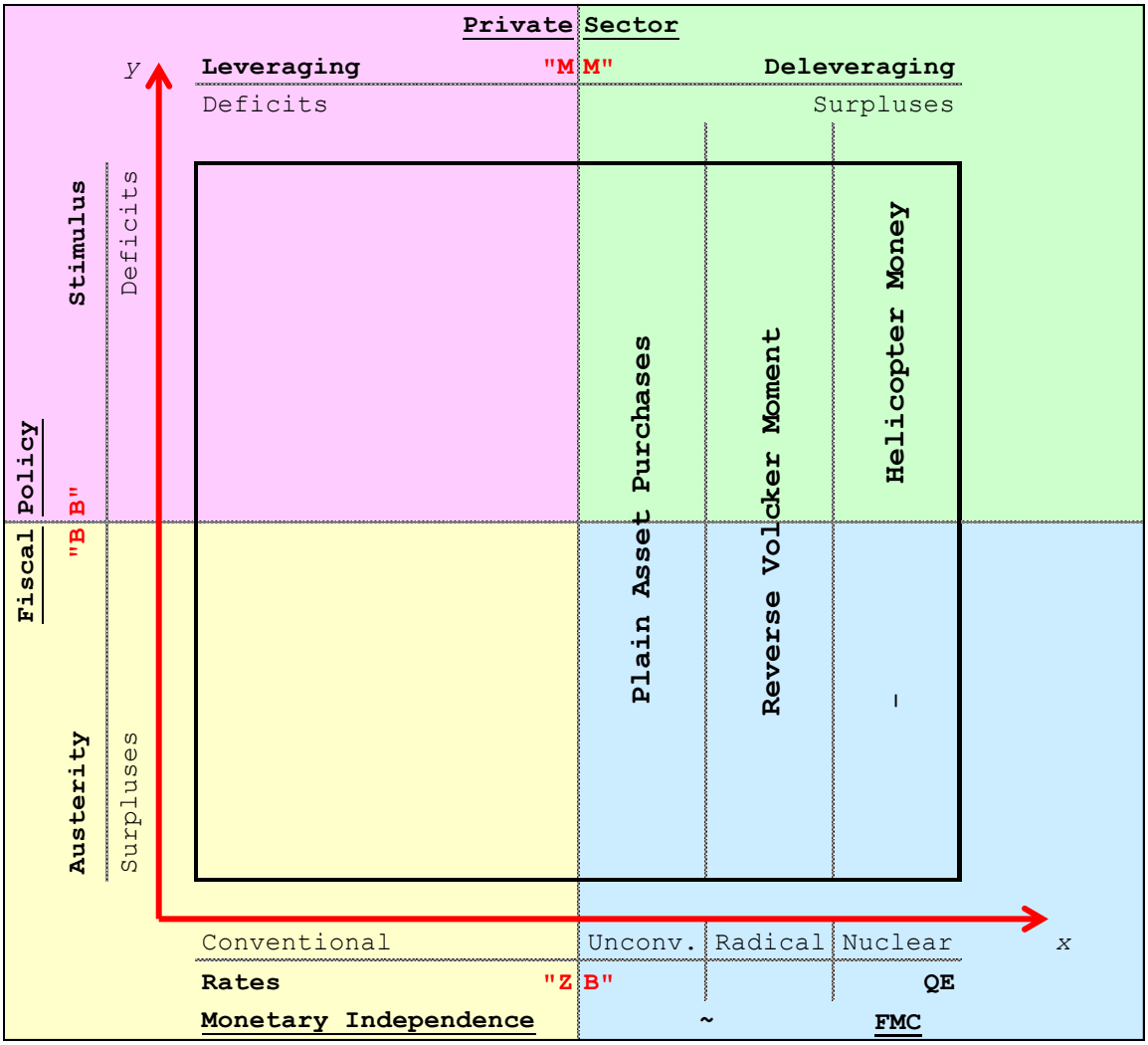
Deflation Risks Dominate
No Crowding Out Risks

Source: McCulley and Pozsar (2012)

Unlike unconventional and radical policies, which are independent of the fiscal policy stance, this step is fiscal expansion and monetary policy combined: fiscal-monetary cooperation ("FMC").

The aim of the nuclear option is to support the fiscal authority in raising nominal demand, not to stimulate private borrowing per se.

Figure 5b: Unorthodox Monetary Policy Varietals



Inflation Risks Dominate
Crowding Out Risks

Deflation Risks Dominate
No Crowding Out Risks

Source: McCulley and Pozsar (2012)

At this stage the central bank has acknowledged that (1) the private sector is deleveraging; that…

…(2) monetary policy on its own (that is, without willing private borrowers to respond to its stimulus) is ineffective; and, that…

…(3) supporting fiscal policy in staying expansionary for as long as the private sector is deleveraging is the best it can do generate growth strong enough to eliminate slack and deflationary pressures.

The nuclear policy option is also known as "helicopter money" or the monetary financing of fiscal stimulus.[17]

Unlike other forms of QE, helicopter money is certain to boost nominal demand, add to economic growth and reduce slack.

However, because this option effectively means the central bank giving up its independence it will only be invoked once all other options were proven to have failed.

It is the nuclear policy option that is the ideal monetary policy option in the green, north-east quadrant of the map.

It is by voluntarily adopting a supporting as opposed to a leading role in economic management that in a liquidity trap monetary policy has to be effective "in a different sense".

And it is this way that in the topsy-turvy world of liquidity traps lessons in unpleasant monetarist arithmetic (that is, monetary policy disciplining fiscal policy to refrain from too much stimulus) are replaced with lessons in unpleasant Keynesian-Minsky logic (where monetary policy supports fiscal policy in maintaining stimulus).

5. – COMMUNICATION STRATEGY IN A LIQUIDITY TRAP:

But why does the fiscal authority need support from the monetary authority?

And other than low interest rates, how exactly can this support be administered?

We noted before that during episodes of private sector deleveraging fiscal stimulus becomes essential to avoid depression.

[17] Technically speaking central banks cannot underwrite government spending per se, but can effectively do this by buying on the secondary market the same amount of bonds that the government has issued to fund the stimulus.

We also noted, however, that maintaining large fiscal deficits is politically very difficult (if not impossible) during peacetime.

This is especially the case if the starting point of the public debt-to-GDP ratio is already high; the deleveraging needed in the private sector is so big to begin with that it could double the ratio, or worse; or if future, unrelated projections are unsustainably high.

If these preconditions exist, low government bond yields may not be sufficient conditions to enable the government to embark on fiscal stimulus (see Koo, 2009 and Summers and DeLong, 2012).

Under the threat of high and dramatically rising debt-to-GDP ratios, the political process will work against fiscal stimulus, and…

…constantly ring the alarm bell of "becoming Greece" and default, backed up by the refrain of rating agencies's downgrade threats.

In other words the political process will push the economy from the desirable green quadrant to the depressionary blue quadrant.

For examples of such political dynamics, look no further than the "Mistake of 1937" (see Eggertsson and Pugsley, 2006),…

…Japan's post-bubble recessions which were driven almost exclusively by fiscal policy decisions[18] (see Koo, 2009), or…

…the currently unfolding debate around the U.S. fiscal cliff and austerity in the U.K. and peripheral Europe.

Arguments of Ricardian equivalence are often invoked by "fiscal austerians"[19] for why fiscal stimulus will not work.[20]

This states that households are unlikely to spend their stimulus dollars (say in the form of tax cuts) but rather save them.

This is because seeing government debt pile up as a result of funding the stimulus today, they expect to pay it back in the form of higher taxes tomorrow – so they will not spend it in the first place.

If this is true, the logical conclusion would be not to go ahead with the stimulus measure in the first place.

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[18] Which in turn were driven by concerns over Japan's public debt-to-GDP rising from under 100% in 1990 to 235% today as fiscal policy has been providing an ongoing support during a 15 year span of private deleveraging.
[19] The term "fiscal austerians" was coined by Rob Parenteau.
[20] Crowding out is another argument against stimulus. However, as we have explained in the previous section, during private deleveraging cycles, crowding out is not a concern as the government is a lone bidder for funds.

However, in an environment where the private sector is in deleveraging mode such dynamics are very unlikely to unfold.

This is because during deleveraging cycles the private sector is cash flow constrained and as such, stimulus dollars would be viewed as a welcome relief for household cash flows and are likely to be spent.

But even if stimulus dollars are spent and not saved and the economic results of this are positive, the issue of rising debt-to-GDP ratios remains and will make it hard to maintaining stimulus.

This is where central bank communication strategies accompanying QE policies become relevant.

And communication strategies are the essence of the "different sense" in which monetary policy can be effective in liquidity traps.

Communication matters because in calculating public debt-to-GDP ratios, it is public debt held by the public that is considered.

Thus, if it is the public that funds fiscal stimulus debt-to-GDP ratios always rise.

If, however fiscal stimulus is funded by the central bank (helicopter money) debt-to-GDP ratios will never increase.[21]

This is because when looking at the balance sheets of the fiscal and monetary authorities as a consolidated whole,…

…(1) the interest the fiscal authority pays on the portion of its bonds held by the central bank are ultimately returned back to it…

…(2) when the central bank remits as seigniorage revenues the "carry" earned on these bond holdings to the fiscal authority.[22]

Thus, effectively, government debt, when held by central banks seizes to be debt in the sense that no interest is paid on it, on net.

Through the central bank funding these bonds with zero interest liabilities (that is, money), the government's debt effectively becomes a zero interest perpetuity (that is, money) for as long as…

[21] On the technicalities of the monetary financing of fiscal deficits please refer back to footnote 2 above.

[22] These are standard operational practices of the Federal Reserve and the Bank of Japan. And they recently became the standard operational practice with regards to the Bank of England's APF (see the recent correspondence about this between Chancellor Osborne and Governor King here and here).

…the central bank does not re-sell them on the open market and clearly communicates that indeed it never will – i.e. that there will never be exit from QE!

This is how central banks can "cancel" a share of national debts they hold should be interpreted as well – as an effective (or consolidated) cancellation and not a literal one as some pundits say.

And this is how communication strategies can help support fiscal policy to stay expansionary even with high debt-to-GDP ratios.

As such, communication strategies during private deleveraging cycles (especially ones that coincide with high public debt-to-GDP ratios) should convey two things to the public (see Turner, 2013):

(1) Transparency about the consolidated balance sheet impact of QE – i.e., its positive impact on debt-to-GDP via debt monetization.

(2) The permanence of the new monies printed via monetization to cement the public's perception of the improvement in debt ratios.

In other words, communication strategies should help the fiscal authority embark on stimulus "with style" – that is, with the least amount of damage to the sovereign's debt-to-GDP metrics.

Unorthodox monetary policy varietals are scattered widely along the transparency and permanence spectrum (see Figure 6).

Unconventional policies have low transparency about the fact that they involve debt monetization and talk of policy "exits" is frequent.

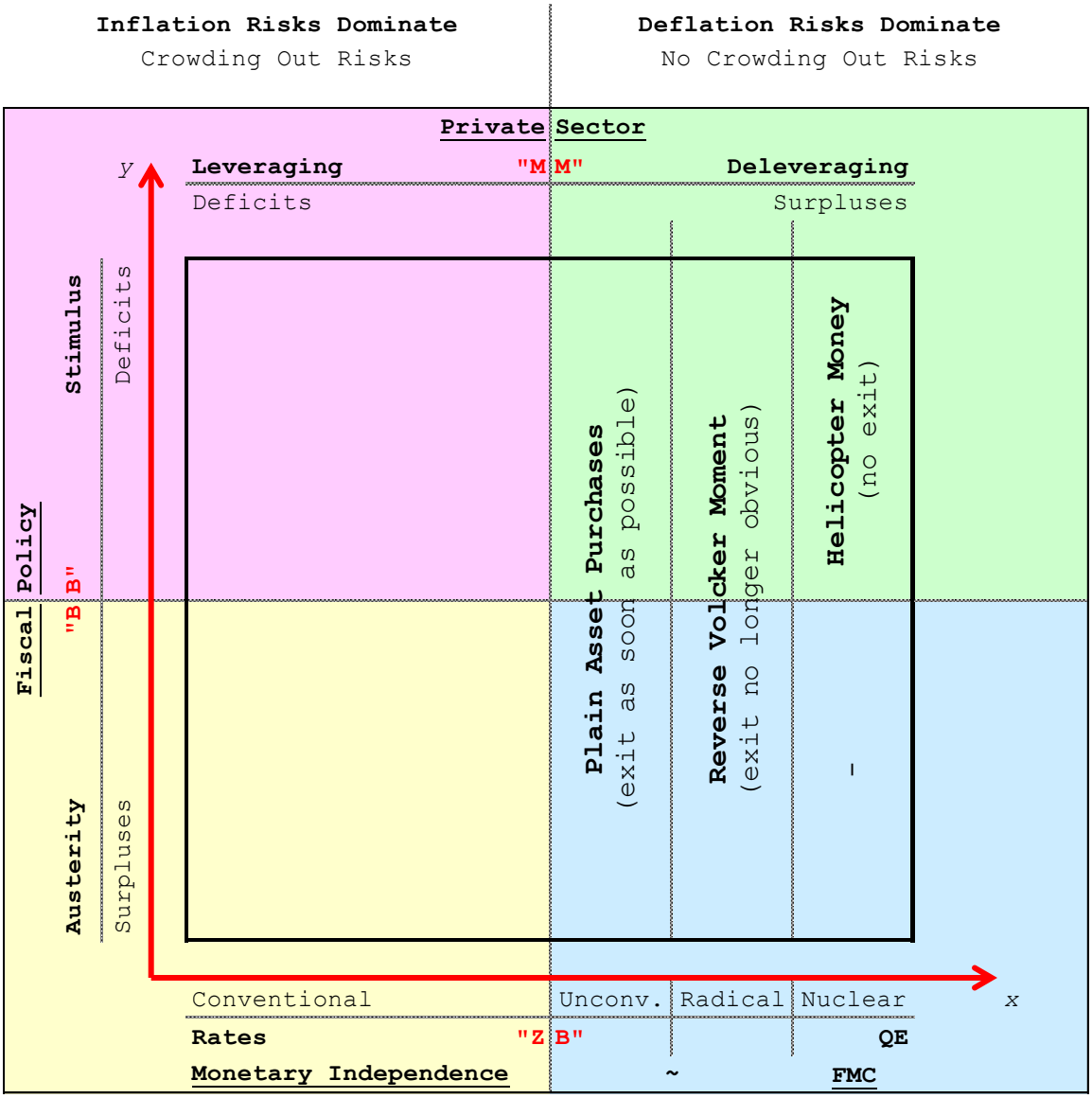
Radical policies are not much more transparent about monetization but go silent about exits, or the unprinting of monies printed so far.

Nuclear policies on the other hand are fully transparent about monetization and open about the permanence of newly printed monies.

Of the unorthodox policy varietals the nuclear policy comes with a communication strategy closest to the ideal described above.

This does not mean, however, that prior rounds of unconventional and radical policies (which rank low on the transparency and permanence spectrum relative to the nuclear option) were a "waste".

Figure 6: Communication Strategy in a Liquidity Trap



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

This is because they can easily be turned nuclear by changing the narrative around them and thereby the expectations around their fate.

That is, by proclaiming that government bonds purchased under unconventional and radical rounds of QE will never be sold and will be replaced at maturity on the open market, central banks can easily "engineer" declines in public debt-to-GDP ratios that would then help make the political room for fresh rounds of fiscal support.

Depending on the size of private deleveraging ahead and the cumulative size of the public debt-to-GDP impact of the essential fiscal support needed along the way, the nuclear policy option may then be maintained or retired as economic circumstances require.

With this insight, one can see that the analogy that - say - the U.S. is the "next Greece" due to its high public debt-to-GDP ratios is not entirely correct: while Greece (or Spain) does not control its printing press the U.S. does. And this makes a huge difference.

This means that in a fiat money system, for any indebted country in control of its printing press, default should *not* be a risk.

This is especially true for the country that is the issuer of the world's reserve currency – namely the U.S. (also see McCulley and Pozsar, 2012 and Gourinchas and Jeanne, 2012).

And this also means that in the current environment, debt sustainability should be interpreted at a higher level of abstraction than picking some arbitrary level of public debt-to-GDP ratios (see debt rating agencies' methodology and/or Reinhart and Rogoff, 2009).

6. – THE U.S. POLICY MAP:

Turning to the present, we next discuss the state of play of fiscal and monetary policies in the U.S. (see Figure 7).

This map builds on the prior one by dividing it up into 18 cells which allows us to position various policies within the matrix.

As guideposts, we display "helicopter money" in cell #6 – this is where fiscal and monetary policies combined are at their easiest.

In a diagonally opposite corner, in cell #13, we display the case where the monetary authority has successfully taught some unpleasant monetarist arithmetic to the fiscal authority ("Sargent-Wallace").[23]

In the U.S. today the private sector is deleveraging. This makes the policy mixes on the left hand side of the matrix relevant.

QE1 and QE2 are both listed in cell #4. These policies coincided with deep fiscal deficits which facilitated the recycling of private savings as a result of post-bubble deleveraging.

Fiscal policy's role as borrower and spender of last resort more or less offset the drag from private savings and kept growth positive, albeit below its pre-crisis trend.

QE1 and QE2 were "mere" unconventional policies as they were aimed at stimulating private credit demand.

Central bank communication emphasized the temporary nature of the policies and talked of exits at the first opportune time.

As such, the monetization of debts did not lead to a proclaimed or perceived effective reduction in the U.S.'s public debt ratio.

QE3 is displayed in cell #11. The position of QE3 changed vertically relative to those of QE1 and QE2 as the fiscal environment it was implemented in changed. Fiscal policy is more restrictive today than it was before, moving down in the direction of balanced budgets.

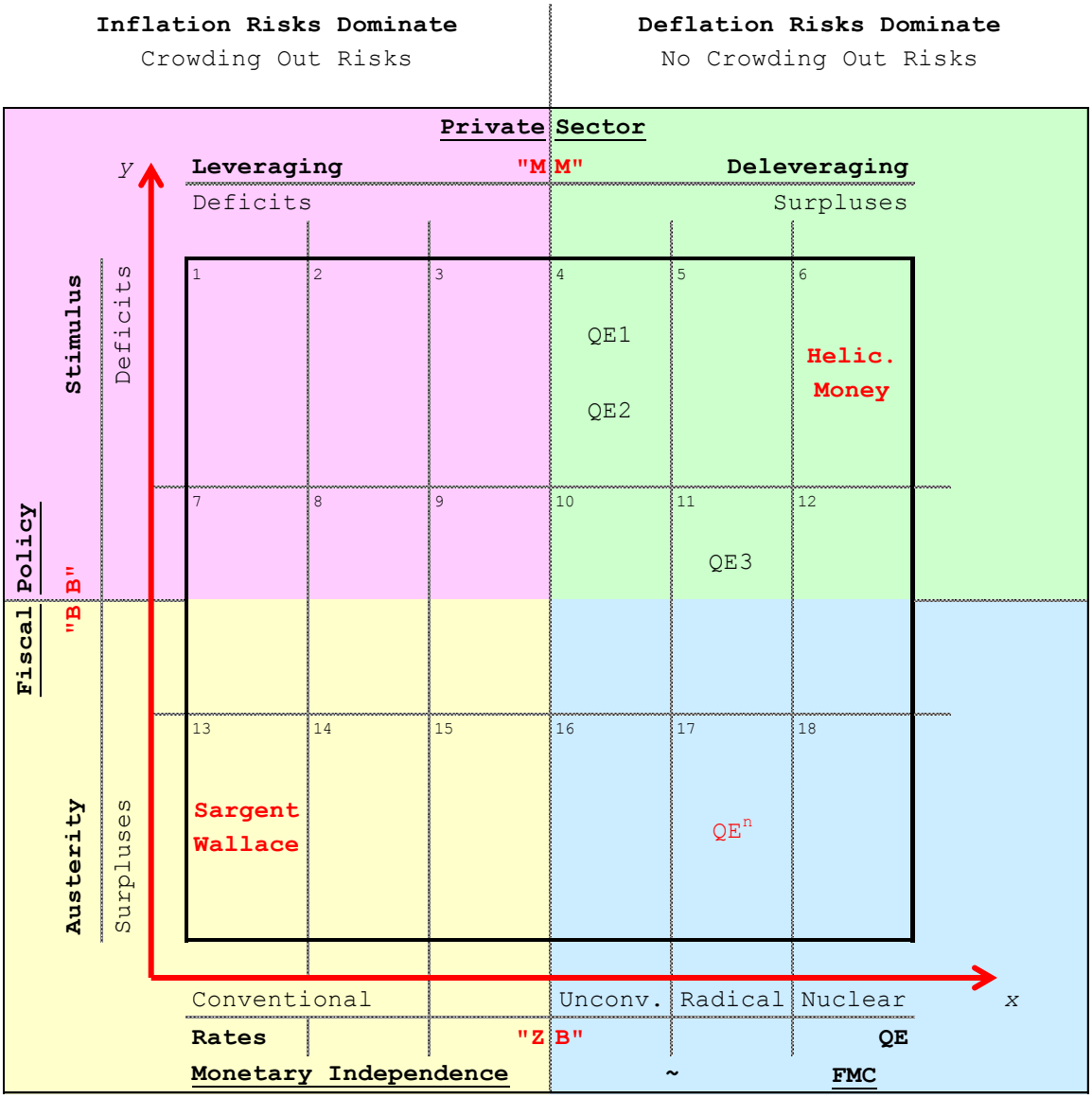
The relative position of QE3 also changed horizontally. This is because the central bank changed its reaction function, turning QE3 into a radical, as opposed to a "mere" unconventional policy.

However, central bank communication about the potentially positive impact of cumulative QE measures on public debt-to-GDP levels remained muddled. As such, the monetization of debts did not lead to a proclaimed or perceived reduction in the public debt-to-GDP ratio.

With the ongoing risks of a fiscal cliff redux, the risk is that further rounds of QE (denoted by QE^n and potentially meaning QE3 at an increased pace) will take place in a severely restrictive fiscal environment. This alternative is positioned in cell #17 in the depressionary blue quadrant that policymakers are supposed to avoid.

[23] Note here that the initial dose of unpleasant monetarist lessons are first administered in cell #1, where private leveraging is aggressive and inappropriately public leveraging is aggressive as well. Learning the lesson is a south-bound journey: high interest rates ultimately force the fiscal authority's hand and forces it to go from deficits to surplus in cell #13.

Figure 7: The U.S. Policy Chessboard



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

As a reminder, during private deleveraging cycles monetary policy (even if radical) is unlikely to work if it is aimed at stimulating private credit demand. What matters is not monetary stimulus per se, but whether monetary stimulus is paired with fiscal stimulus and whether monetary policy is communicated in a way that helps the fiscal authority maintain stimulus for as long as deleveraging continues!

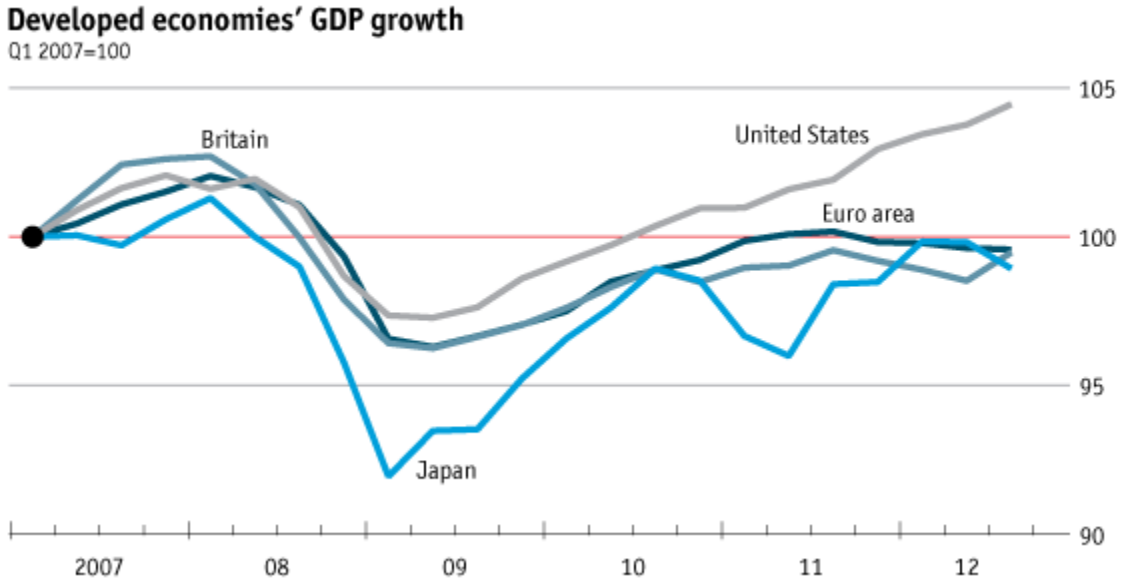
This is to say that the fiscal-monetary policy mix in the U.S. is moving exactly in the wrong direction. From QE2 the policy mix should have moved east toward cell #6 where helicopter money is. Instead it moved south to cell #11 and risks sliding down south to "abyss #17".

7. – THE GLOBAL MACRO MAP:

The next map (see Figure 8) adds to this by showing where the Fed is relative to other advanced country central banks on the matrix.

Thus, central banks in Europe tend to operate in more austere environments (that is, in the depressionary blue quadrant) and have not yet stepped over to the realm of radicalism. This is also evident from their relative growth performance since the crisis (see Graph 1).

Graph 1:



Source: The Economist

The Bank of England's (BoE) asset purchase facility is plotted in the blue half of cell #10, south of the position of QE3.

This is because austerity measures and the rhetoric surrounding them are more aggressive in the U.K. than they are in the U.S.

The European Central Bank's (ECB) outright monetary transactions (OMT) are plotted in cell #16, deep to the south of QE3 and the BoE.

This is because unlike the Fed's and the BoE's asset purchases, which do not come with fiscal conditionalities attached, the ECB's is activated only if preconditions of austerity are met.

According to our map, in both the U.K. and the Eurozone the fiscal-monetary policy mix are in the depressionary blue quadrant precisely where policymakers should not wade.

Worse, the conditionalities attached to the ECB's OMT essentially fetter the Eurozone's periphery to this depressionary quadrant for as long as the political orthodoxies of balanced budgets are adhered to (as such the Eurozone moved only horizontally on our policy map, reflecting the gradual erosion of orthodoxies at the ECB)!

Of course important factors other than fiscal policymakers' philosophical views on the merits of stimulus may also influence the quadrant where particular countries are positioned on the map.

Thus, the U.K. may feel impelled to adopt an austere fiscal stance as it has a large banking system relative to GDP and so has to have a fiscal cushion for banking emergencies and to keep her AAA rating so its banks remain competitive on the global stage. This may make HMT reluctant to migrate from the blue to the green quadrant.

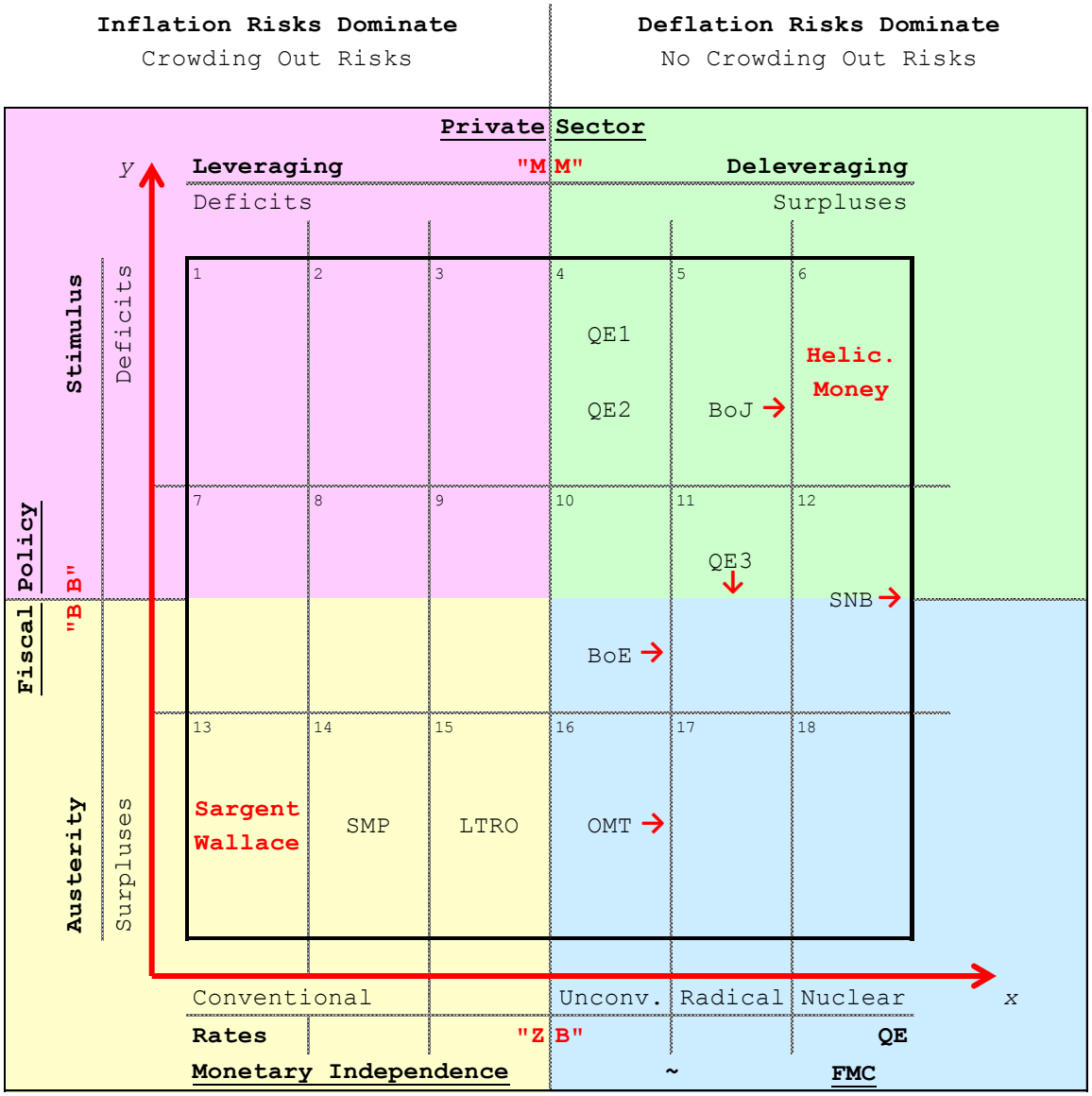
In another example, the ECB has the issue of not having a common bond so it is in a political bind as to whose debts to monetize.

Notably, the Federal Reserve, which is also the custodian of the world's reserve currency, has neither of these problems. Accordingly its ability to be in the green quadrant is less constrained.

That said, there are welcome signs that fiscal-monetary orthodoxies continue to thaw in the Eurozone: witness the recent decision by the ECB to forego capital gains on some Greek bonds it bought at deep discounts and thus forgiving some of Greece's debt.

We do not plot the U.K.'s funding for lending scheme. While it is an example of fiscal-monetary cooperation, it is one that is aiming at the wrong goal. It assumes (like unconventional and radical forms

Figure 8: The Global Macro Chessboard



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

of QE) that the private sector is not deleveraging, and that it is a lack of lending, as opposed to a lack of private demand for credit that is the problem. If it is the latter, the scheme won't help and it will prove to be a fiscal-monetary cooperation of the wrong kind – one that aims to help private as opposed to public borrowing.

The Bank of Japan (BoJ) is plotted in cell #5 north of the Fed. This is because Japan is running bigger fiscal deficits than the U.S.

Importantly, like the Fed, the BoJ's QE measures also fall in the radical category. This is due to a recent change to the BoJ's policy reaction function, where they commit to open-ended asset purchases for as long as they reach their medium term inflation target of 1%.

Moreover, the BoJ has been the most aggressive advanced world central bank in fostering fiscal-monetary cooperation and thus moving toward helicopter money when it announced that "the Government and the Bank will work together and make their utmost efforts to address [the] challenge [of overcoming deflation as early as possible and to return to a sustainable growth path with price stability]" adding that "the Bank strongly expects the Government to vigorously promote measures for strengthening Japan's growth potential".

It is interesting to note Japan's coyness in experimenting with unorthodox policies when it was the only economy struggling with the burden of deleveraging. In the company of other advanced economies, however, Japan today seems to be leading the way. This is especially so after the election of Shinzo Abe as prime minister, who pledged to raise the BoJ's inflation target to 2% and retort to even the monetary financing of public works (helicopter money) if this target isn't met.

Unfortunately however, Japan is the only advanced country as of yet to openly embrace the virtues of fiscal-monetary cooperation. And with all other major countries on a contractionary fiscal path (see downward and leftward pointing arrows on the map) the risk of a global recession due to a coinciding wave of austerity is not small in 2013.

We denote the SNB in cell #12 on the map. Switzerland is somewhat an outlier as unlike the countries noted above, it is a small, open economy for whom a competitive exchange rate matters a lot. As such, the SNB's decision to peg the CHF to the euro (and commit to unlimited expansions of its balance sheet to defend this peg) has less to do with helping domestic demand or fiscal stimulus (which is small).

8. – CYCLES OF CENTRAL BANK INDEPENDENCE AND FISCAL DOMINANCE:

The relationship between the fiscal and monetary authority is dynamic over time. In the case of the Federal Reserve and Treasury one observes a relationship that is heavily circumstance-dependent:…

…close during periods of world war, deleveraging and deflation, and distant during periods of peacetime, leveraging and inflation.

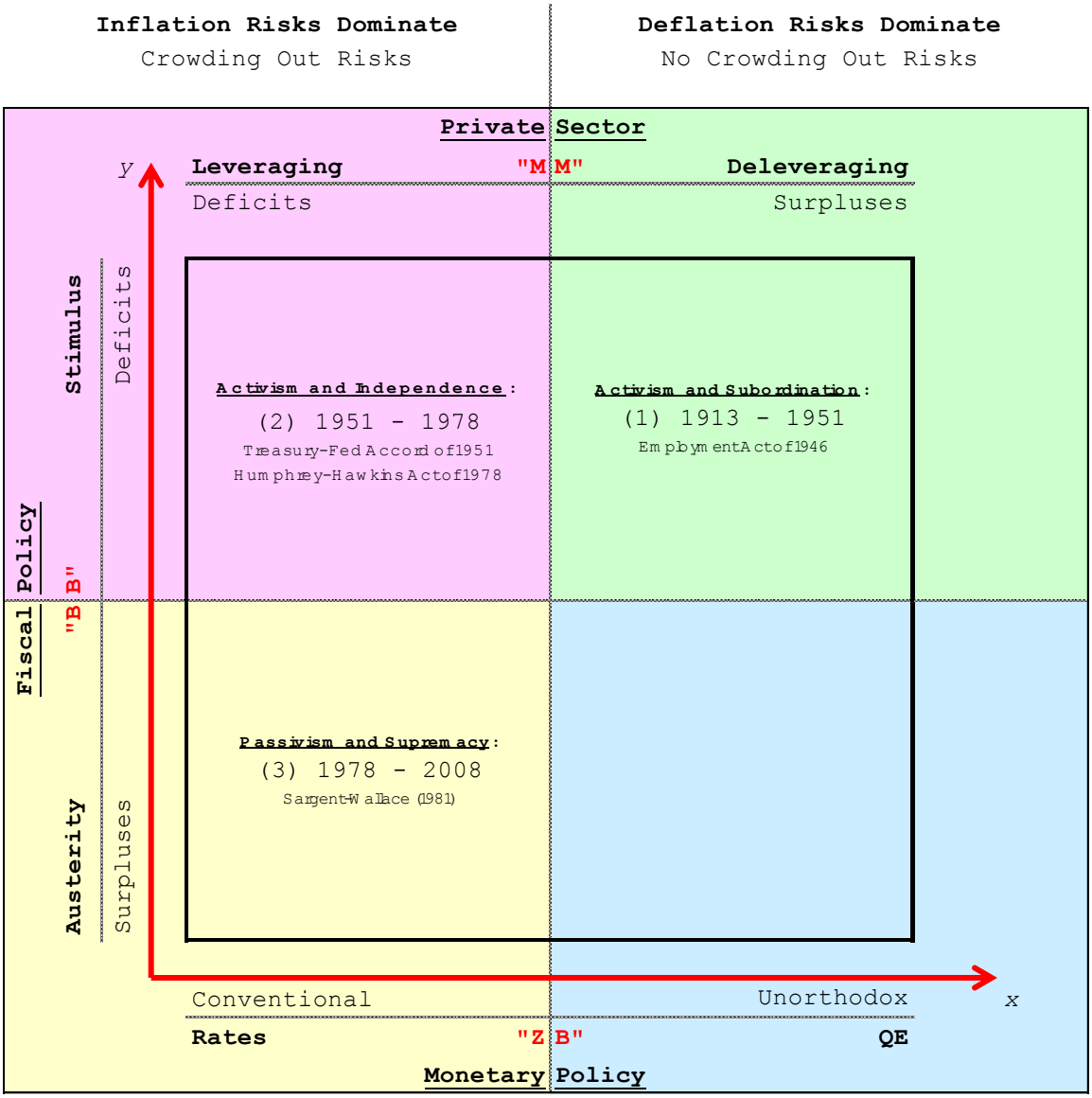
We identify three "epochs" in this relationship (see Figure 9a) – "arranged marriage, divorce and estrangement":

(1) 1913 – 1951, when (in rough terms) the Fed spent most of its time being subordinate to and cooperative with Treasury and the Office of the President (during WWI, the Great Depression, WWII and the Korean War) marks the first epoch. This can be placed on the green quadrant of the map. Deficits were often monetized and rates on Treasuries were pegged. This was a period of fiscal activism and monetary subordination (an involuntary form of cooperation, but cooperation nonetheless). The monetary low point of the era was the Employment Act of 1946, which gave the federal government, and not the Fed, the task of managing the economy. The Treasury-Fed Accord of 1951 marks the end of the epoch and the "emancipation" of the Fed.

(2) 1951 – 1978, which is characterized by fiscal activism and monetary independence marks the second epoch. This can be placed on the pink quadrant of the map. During this period the policy debate was along monetarist and Keynesian lines. Keynesians (emboldened by the success of the war effort) were reluctant to take their hands off the wheel and the monetarists (emboldened by the Fed's newfound independence) were eager to take control of the wheel. Keynesian policies overstayed their welcome and led to crowding out and inflation as the post-WWII private credit boom also took hold. Fiscal policy fell from favor gradually. The Humphrey-Hawkins Act of 1978 marks a key milestone of this shift in power, empowering the Fed.

(3) 1978 – 2008, which is characterized by fiscal passivism and monetary "supremacy" marks the third epoch. This can be placed on the yellow quadrant of the map. The migration from the pink to the yellow quadrant played out during the Chairmanship of Paul Volcker and against the backdrop of the Sargent-Wallace (1981) framework. Its hallmarks were the supremacy of monetary policy and a much diminished, second fiddle role for fiscal policy (see Blanchard, et al, 2010).

Figure 9a: Cycles of Central Bank Independence and Fiscal Dominance



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

The migration between quadrants is seldom smooth or easy, and they are driven by either democratic or technocratic processes.

During the interwar gold standard the transition from the yellow to the green quadrant was not a straight line but a democratic process that first passed through the depressionary blue quadrant (Figure 9b).

First, between 1929 and 1933, fiscal policy was tight and monetary policy has been restrictive in defense of the gold standard.

The orthodox policies of balanced budgets, tight money and fixed exchange rates against the backdrop of a deleveraging private sector drove the economy into a cycle of debt deflation (Fisher, 1933).

The result of this period of fiscal passivism and monetary misjudgement was the Great Depression.

And as "orthodoxies came in conflict with [the economic circumstances of citizens and thus] democracy, orthodoxies were ultimately overruled by politics" (see McCulley and Pozsar, 2012).

Thus, between 1933 and 1937, monetary and fiscal policies were eased and policymakers adopted an unorthodox policy mix that pulled the economy up into the green quadrant and generated a recovery.

The hallmarks of this period were President Roosevelt effectively taking away the central bank's independence and becoming the de facto Chairman of the Fed; the devaluation of the dollar against gold; the abandonment of the balanced budget dogma and adapting an expansionary fiscal policy stance; and elements of helicopter drops of money.

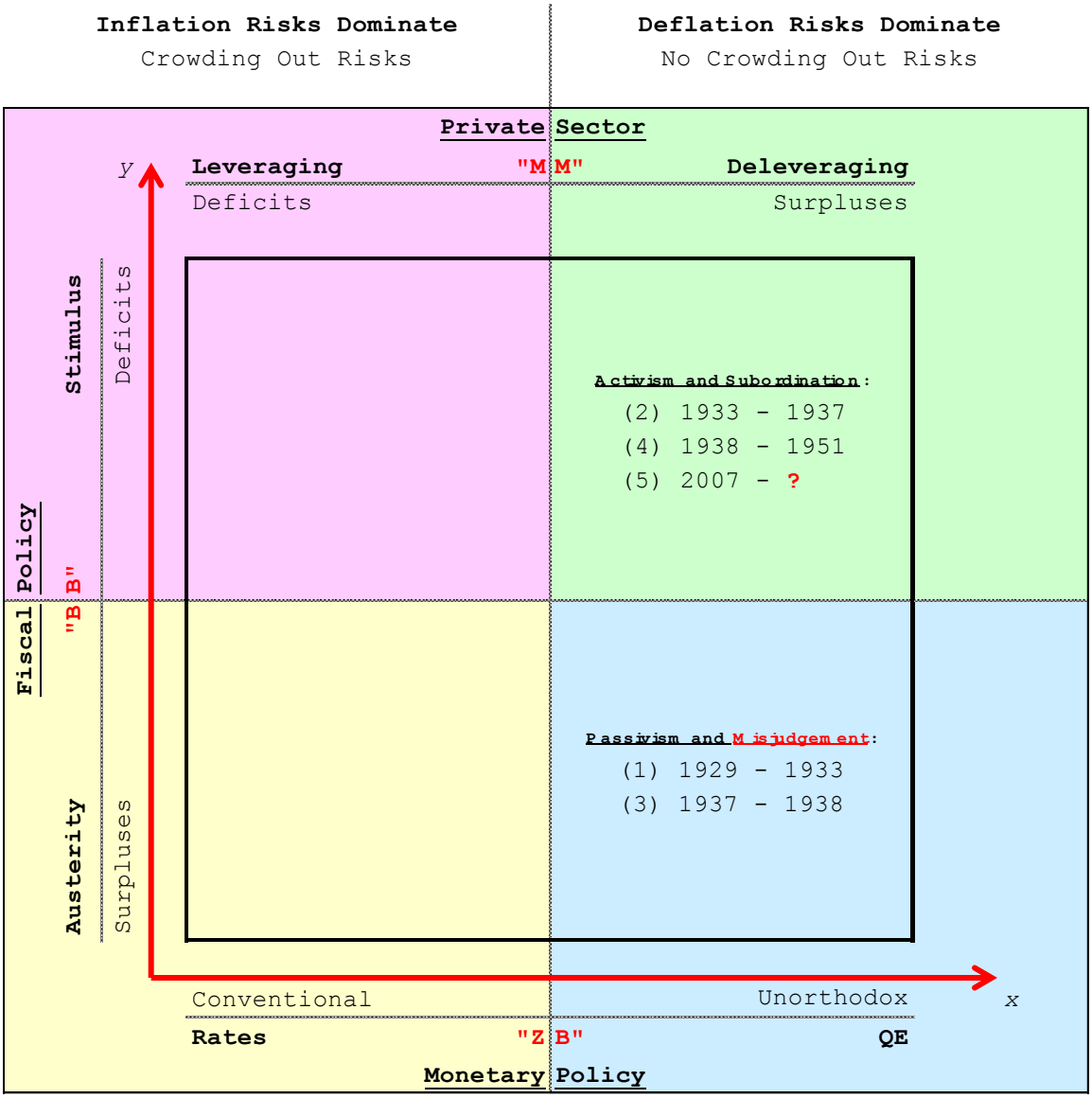
Third, between 1937 and 1938, monetary and fiscal policies again turned contractionary due to a flare-up of orthodoxical concerns of excessive inflation due to unorthodox fiscal and monetary policies.

This period of policy misjudgment – otherwise known as "the Mistake of 1937" - (beautifully chronicled by Eggertsson and Pugsley, 2006) pushed the economy back into the depths of depression.

Fourth, between 1938 and 1945, and even thereafter until the time the Treasury-Fed Accord was signed in 1951, monetary and fiscal policies turned stimulative again and in a cooperative manner at that.

Fiscal stimulus was now directed at re-armament for WWII and monetary policy assumed the role of financing this effort. And with war finance, helicopter money was added back the economic toolbox.

Figure 9b: Beware of Missteps



(1) QE Communication: Transparency and Permanence

Low ~ *High*

(2) Debt/GDP Impact:

↑ ~ ↓

(3) Ricardian Equivalence:

Yes *Maybe* *No*

Source: McCulley and Pozsar (2012)

In contrast, transitions away from the green quadrant (back toward the pink and yellow quadrants) are a technocratic process.

The hallmarks of these processes are not electoral struggles between the haves and have nots, but power struggles between the fiscal and monetary authorities for independence.

These power struggles are usually a function of fears of inflation and crowding out – in short, fiscal dominance - and are ultimately marked by revisions to central bank acts:…

…witness the Employment Act of 1946, the Treasury-Fed Accord of 1951, the Humphrey-Hawkins Act of 1978 and more recently the proposed Sound Dollar Act of 2012, which aims to give the Fed a single mandate of stable inflation only and no longer full employment as well – the exact opposite of the radical step the Fed has taken to prioritize the full employment part of its mandate over stable inflation rates.

The lesson here is that central bank independence is not a static state of being. Rather, it is dynamic and highly circumstance dependent: during times of war, deflation and private deleveraging, fiscal policy will inevitably grow to dominate monetary policy and during times of peace, private leveraging and inflation, monetary policy will inevitably grow to dominate fiscal policy.

This is the secular life cycle of fiscal-monetary relations that goes hand-in-hand with secular private debt cycles. Fiscal-monetary cooperation if adopted in 2013 in the U.S. would thus be a déjà vu experience for the Federal Reserve on its 100th birthday anniversary.

9. – CONCLUSION:

To conclude, we channel Governor Bernanke addressing policymakers in post-bubble Japan in 2003 (<u>underlined</u> sections are our additions):

"[I]t is important to recognize that the role of an independent central bank is different in inflationary and deflationary environments. In the face of inflation, which is often associated with excessive monetization of government debt, the virtue of an independent central bank is its ability to say "no" to the government. [<u>In private deleveraging cycles</u>], however, excessive money creation is unlikely to be the problem, and a more cooperative stance on the part of the central bank may be called for. Under [such circumstances], greater cooperation for a time between [central banks] and fiscal

authorities is in no way inconsistent with the independence of the central banks, any more than cooperation between two independent nations in pursuit of a common objective [or for that matter, cooperation between central banks and fiscal authorities to finance war] is inconsistent with the principle of national sovereignty."

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