

From unconventional monetary to unconventional fiscal policies

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“...the ideas of economists and political philosophers, both when they are right and when they are wrong, are more powerful than is commonly understood. Indeed the world is ruled by little else. Practical men, who believe themselves to be exempt from any intellectual influences, are usually the slaves of some defunct economist.”

Keynes, in The General Theory

1 Introduction

The recent crisis has brought economic policy to the center of the public debate. If during the last decade reality shaped policy, at the end of last century we witnessed a period in which the interaction between economic policy and theory was stronger than ever. As usual, in practice causality runs in both directions, but nonetheless during this period this relation was closer and in large part very much driven by investments in research by central banks. Researchers worked on problems motivated by specific policy questions and specific policy experiences, and policy makers made use of theory to shape institutions, design rules, or simply to communicate policy decisions to the public. In contrast to Keynes's quote above, lags between new theoretical results and their introduction into everyday policy making diminished as economists worked in close connection with policy makers.

To better understand this change we will focus on monetary policy. After strong changes in the 70s and 80s, monetary policy recovered its glamour during the 90s, largely due to the positive economic outcomes perceived as the result of new ways of designing institutions and of using monetary policy instruments. We can summarize these outcomes as: a strong decline in the average inflation rate during that period, positive average growth in most economies, as well as low volatility of real aggregates over the business cycle frequency. Additionally, these results were not limited to some small area of the world but were widespread across developed countries. Trying to trace these results to a common trend, lessons from research suggest that the biggest change was the push for central banks to be independent of political power and the strong movement toward rule-based monetary policy.

By 2002, 22 countries had adopted monetary frameworks that emphasized inflation targeting as one, or the main, objective of its mandate.

This can be seen as the success of stabilization policy in normal times, and the widespread feeling was that the big hero was monetary policy. This idea was bolstered by the image of the central bank as an independent institution with a very concrete goal (low inflation), a very precise instrument (the short term policy rate), a rule and clear communication rule that governed the decisions on this instrument, and the credibility that came as a by-product of this institutional arrangement. It is therefore probably fair to say that the pre-crisis stability and growth was to a large extent explained by this new monetary design.

* The opinions expressed in the article are those of the author and do not necessarily coincide with those of Banco de Portugal or the Eurosystem.

At the same time on the research front we went from showing that monetary policy shocks should be avoided since they just introduce volatility and uncertainty into the economy, to showing how good monetary policy should play a stabilizing role. This revealing step came from the ability to extend the traditional framework used to define optimal tax policy to monetary environments. In this way, researchers could support the robustness of an average low inflation, and, at the same time, explain the gains of using monetary policy as a stabilization policy device, namely explaining how the so called “gaps” should be smoothed across time and states.

In contrast, developments in fiscal policy were often far from those reached in monetary policy, both in terms of real institutional design and research discussion. We should, however, remember that Milton Friedman (1948) famously railed against the use of discretionary (both fiscal and monetary) policy to stabilize the business cycle. Friedman instead defends the power of fiscal automatic stabilizers as a preferred tool for countercyclical policy. In a sense, we now can recognize that Friedman was very ahead of his time. By recognizing that “changes in fiscal incentives may be more useful than traditional discretionary fiscal policies that increase budget deficits and work through income effects alone”, Friedman launched the foundations of what later would be named unconventional fiscal policies, which are the main topic of this note.

2 From conventional to unconventional monetary policy

Solow (2005) strongly argued that policy and research should focus more on automatic stabilizers as a route through which fiscal policy could and should affect the business cycle. However, these remarks didn’t have an impact on research and the way they were transmitted to the policy arena is in no way comparable to the above description of the changes in the conduct of monetary policy.

As a result, we arrive to the financial crisis with a consensus that stabilization policy is the responsibility of monetary institutions and that fiscal policies should be designed with built-in automatic stabilizers. Additionally, fiscal policy should not amplify the cycle and there was some common understanding that it should satisfy some rules that guarantee the sustainability of public debt.

In the pre-crisis thinking of policy economists, there was a clear division of institutions, instruments, and objectives between these two set of policies. Still we can find in the research community some areas of intersection between monetary and fiscal policies, namely in the literature known as the Fiscal Theory of the Price Level, which discusses the multiplicity of equilibria associated with the conduct of monetary policy, and in the role of the central bank as a lender of last resort.

With the onset of the financial crisis, the Great Recession and the European debt crisis, this consensus was broken. Fiscal stimulus came back as a prescription to stabilize the economy. The development of government plans to increase aggregate demand marks a change both for the US and for Europe. Subsequently, governments in a large set of countries found themselves with very high levels of public debt. This was in part due to the aforementioned stimulus and lower tax revenues due to the economic downturn, and in part due to automatic stabilizers which reduced revenues and increased expenditures. Following the economic turmoil and the associated political stress we have seen a strong focus on fiscal consolidation through discretionary actions, but to my knowledge there has been little new analytical work on fiscal stabilization policy. On the question of designing better stabilizers, a recent answer was given by McKay and Reis (2013), who show that most of the measured welfare benefits from automatic stabilizers come from the provision of insurance (through changes in precautionary savings) and from redistribution. These authors also show that high

transfers to the unemployed and poor can be quite effective at lowering volatility. However the effect on welfare, consumption, and output depends on the specific design of those automatic stabilizers, that is, on the way they avoid reducing the incentives to work or save and invest.

At the same time, the stance of monetary policy became exceptionally expansionary by historical accounts: the policy rate was lowered toward its effective zero lower bound and central banks began large scale purchases of private and public assets, with longer maturities than in normal times. Consequently, central bank balance sheets grew to unprecedented levels. At the same time that these policies were used as stimulus to the economy, they served specifically to provide liquidity to the financial sector and to repair specific financial markets. In this way, monetary policy had a strong effect on the lowering of rates and risk premia.

Part of this new, unconventional monetary policy works through credit easing through the so-called credit channel which affects credit allocation and relative yields. Through this channel monetary policy can have aggregate effects, but it also has strong redistributive effects. As quantitative (or credit) easing policies benefit the holders of financial assets, e.g. boosting prices of bonds and real estate, it is more difficult now to trace the dividing line between monetary and fiscal policy. Monetary policy transmission now looks like fiscal policy.

The abstraction typically used in research of not differentiating between the budget constraint of the government from that of the central bank began to be challenged these days. Modeling a separate balance sheet for the central bank and a constraint for the government obliges one to make explicit the restrictions of having an independent central bank, as well as the vulnerabilities created by having the private sector holding an increasing amount of assets (reserves). Is it sustainable for the private sector to hold an increasing amount of liabilities when these are not associated with expected future taxes? If the associated risks materialize, should the treasury be ready to receive fewer remittances or to recapitalize central banks? On the question of why the central bank balance sheet matters, the recent work by Del Negro and Sims (2015) gives us good arguments to discuss the consequences of the lack of fiscal support for the central bank. For example, the commitment from the government to never recapitalize the central bank can impose a restriction on the ability of the central bank to satisfy its mandate to control inflation. I will not further comment on issues related to central bank balance sheets and risky assets, and instead refer interested readers to Benigno (2016).

So in practice we have arrived in a world where the new, unconventional monetary policy has an increasing connection with the traditional fiscal policy, and policy makers are scrambling for additional instruments that could complement monetary policy and/or could be accommodated by governments with little fiscal room.

3 From research on optimal fiscal policy to optimal monetary policy

What happened on the research front that could help answer these questions? While we had a strong line of quantitative general equilibrium models which were largely used for fiscal policy over the long term and had helped to make progress on the analysis of fiscal (tax) policy, its extension to business cycle frequency and its interaction with monetary policy is very recent. Let me begin by describing the advances in monetary policy and return later to talk about its extension to unconventional fiscal policies and its potential value for the current situation. By extending general equilibrium models to stochastic and monetary environments, we were able to explain the gains of using monetary policy for stabilization purposes: agents may be restricted in the setting of prices, wages, or in the choice of

portfolio composition. The severity of these restrictions determines the strength of the transmission mechanism of monetary policy. Even though monetary policy can have positive effects, it is not possible to use this policy systematically to take advantage of these effects. A new impetus for using monetary policy as a stabilizing mechanism occurred when research showed that policy can be used in response to shocks so that the negative welfare effects of the nominal rigidities, together with the other distortions in the economy, are minimized. This new strand of literature was able to address quite relevant questions such as: How should monetary policy be conducted in response to shocks in the economy? How relevant is the transmission mechanism of monetary policy for the conduct of this optimal policy? How costly can a single monetary policy be when countries don't share a single monetary transmission mechanism and are exposed to asymmetric shocks? Or in short, how should central banks conduct short run monetary policy?

Ireland (1996) is the first to extend the Ramsey concept of minimizing distortions in a general equilibrium model to a monetary model with nominal rigidities. The idea is to define the set of feasible allocations given the existing policy instruments, and then to determine what characterizes the best solution, namely how policy should react to fundamental shocks and how prices and allocations react to the fundamental shocks and to the described policy changes. This new approach allows us to explain how the the so called gaps can really be read as triangles, or wedges, which policy should smooth across time and different states of the world¹.

This can be related to what, already at the end of the 80s, we read in De Long and Summers (1988), that "demand management policies can and do affect not just the variance, but also the mean of output" and "...successful macroeconomic policies fill in troughs without shaving off peaks". That is, the role of policy is not to close gaps but to minimize wedges, implying that the criteria for stabilization policy should be identical to that of any other policy: a welfare criteria. When this framework, developed mainly for fiscal policy, is applied to monetary policy it has the advantage of making very clear the comparability between monetary and fiscal stabilization policy channels.

Even though the first series of papers had a strong focus on conventional monetary policy, with fiscal policy being reduced to lump sum taxes/transfers, that comparison was clear. The substitution of gaps by triangles showed that while the transmission of monetary policy shocks is extremely dependent of the type and degree of the frictions existing in the economy, the same is not true of the optimal reaction to a given shock: the design of optimal rules to various shocks have been shown to be much more robust.

One very instructive result from the early stage of this literature is that when price adjustment is slow, for example due to sticky prices, the planner is able to side step the zero bound restriction on nominal interest rates and achieve higher utility. This ability is driven by the reaction of policy to a particular fundamental shock that allows ex-post mark-ups to be state-contingent, contrary to what happens when prices are flexible, for the class of state-of-the-art monetary policy models with monopolistic competition with constant elasticity of substitution across goods. Therefore, we can write theoretical examples where the existence of nominal rigidities can improve the outcome of policy relatively to those with flexible prices. This is clearly a result similar to the well-known one in the second-best literature on fiscal policy: namely that in the face of several distortions the elimination of one of them is not necessarily welfare improving.

1 See Adão, Correia and Teles (2003).

4 The optimal mix of policies

The next step in the research literature was to study the interaction of monetary and fiscal policy. The optimal policy was then a joint decision on the choice of both type of instruments. The way this interaction was developed was to limit fiscal instruments to proportional tax rates that can be state-contingent. In most of these papers government expenditures is exogenous and therefore cannot be used as a policy instrument. This methodological choice is very much driven by the difficulty of evaluating the welfare effects of a broad measure of public consumption.

These papers allow us to argue that, independently of the degree or type of price stickiness, it should be possible to implement the same relevant set of allocations², and that each allocation in that set is implemented with policies that are also independent of the price stickiness. The intuition behind this result is that policy shocks have differing effects in the model economy depending on the type and degree of price rigidity, but the same is true for the exogenous shocks, e.g. technology or government expenditures. This leads to the important result that when a policy satisfies a minimum requirement of optimality, the combined effect of the exogenous shocks and the response of policy is invariant to the degree or type of price. In other words, the influence of price rigidities can be undone if policy makers can decide monetary and fiscal policy jointly. We can summarize these results by saying that transmission is very relevant when policy is discretionary or when it is very far from efficient. But in other environments, for example with different price setting restrictions, transmission can be observationally equivalent.

The necessary condition for this equivalence result of different environments is the existence of a sufficiently rich set of policy instruments. In particular, we show that within the confines of a standard business cycle model, state-contingent debt is a redundant policy instrument as long as policy makers can use both consumption and labor income taxes freely.

The main policy lesson from our analysis is that when state-contingent fiscal and monetary policy are jointly decided, price stability is a requirement of efficiency, independent of preferences, as long as preferences concern the final goods from which the households extract utility. This is a normative statement, stronger than the Ramsey prescriptions. It also appears to be consistent with a generalized mandate and practice by central banks. In addition, this result tells us that it is not possible to distinguish whether the Great Moderation was due to lower volatility of outcomes from different transmissions of shocks or to better policy.

A related result is that the more you need to use monetary and fiscal policy instruments, the more effective they become. Therefore the question of the magnitude of the fiscal multiplier that has produced that many works in the post crisis period should be assessed carefully. What we have learned is that just as very different channels can be associated to different magnitudes of the multiplier, the same channels would lead to very different effects of the shock to which policy is reacting. When we joint these two pieces, the total effect of the shock behind the recession and the policy response, the outcomes should be much more similar than those described in most of the literature.

We can now apply the lessons learned from this literature to the links between central banking and fiscal policy. To do that, let me present some results from what we can call the unconventional fiscal policies toolkit. I show how I believe we should complement monetary and fiscal policies in crisis times, when monetary policy has exhausted its conventional instruments and fiscal space has no room for conventional stimulus of the economy.

In this way we can discuss really important, particularly topical questions. The first is the answer to the question of “How can we overcome the costs of the ZLB?” and the second is “How can we compare credit subsidies to credit easing?”

² See Adão, Correia and Teles (2004) and Correia, Nicolini and Teles (2008).

It is well known that non-arbitrage between money and bonds restricts nominal interest rates from becoming (too) negative. How negative is currently an open question, but no one doubts that there is some lower bound. It is clear from recent experience that the Great Recession is one event in which it would be desirable for the central bank to lower the policy rate below that bound. Instead, alternative policies were put in place, namely the use of unconventional monetary policies, including forward guidance and the fiscal stimulus that lead to the public debt legacy that we face these days in a large number of countries. I want to stress that not only were there more options left unexplored but, more relevant for this note, these alternatives were precisely in the set of unconventional fiscal policies which include the interaction between fiscal and monetary policy.

5 The time for unconventional fiscal policy?

The cost of the zero bound is a major concern, which leads to the suggestion of better integration between monetary and conventional fiscal policy.³ However, Correia et al. (2013) proposes the use of unconventional fiscal and monetary policy when the zero lower bound is reached. If the nominal interest rate is zero, proportional contingent taxes can substitute for the role that the nominal interest rate would normally play. Whatever monetary policy can achieve with the nominal interest rate, fiscal policy can also be done with a combination of consumption, labor and capital income taxes. The intuition behind why this unconventional fiscal policy can neutralize the cost of the zero bound constraint is simple. The prices that matter for inter-temporal decisions are consumer prices, which are gross of consumption taxes. Therefore, the idea is to induce inflation in consumer prices, keeping producer price inflation at zero, to eliminate the costs associated with nominal frictions. The result is that we can reach negative real interest rates while avoiding the distortions associated with producer price inflation. A temporarily lower consumption tax relative to the future one generates inflation in consumer prices. To avoid changes in incentives, distinct from those usually associated with a lower interest rate, the change (increase) in the level of consumption taxes (or the equivalent VAT taxes) must be counteracted by a decline in the labor income tax. For the same reason, a change (a decline) in the tax of capital income neutralizes the introduction of the increasing tax on consumption goods. In this way, the use of those three taxes can replicate the decline of the tax on money, that is the nominal policy interest rate.

This policy recommendation requires flexibility of tax policy. It should be noted that this type of flexibility has been prescribed by several authors. Moreover, and perhaps even more relevant, some changes adopting these insights were introduced (partially) during this crisis. For example Feldstein (2002) says that “The Japanese government could announce that it will raise the current 5 percent value added tax by 1 percent per quarter and simultaneously reduce the income tax rates to keep revenue unchanged, continuing this for several years until VAT reaches 20 percent”. And in his presidential address to the 2011 American Economic Association Annual Meeting, Robert Hall (2011) reiterated Feldstein’s ideas and encouraged further research to understand the viability and effects of unconventional fiscal policy, both theoretically and empirically. On the introduction of this instrument in reaction to the state of the economy we can point to the Japanese experience: Japan announced in October 2013 an increase of the consumption tax in two phases (April 2014 and October 2015). Economic activity in Japan grew strongly in 2014Q1, particularly consumption, but contracted afterwards. The second plan was postponed to April 2017.

Therefore, I believe that the argument that fiscal instruments are not as flexible as monetary policy instruments should be revisited. While perhaps this conclusion can apply to stabilization policy during normal times, exceptional circumstances such as the recent crisis or the Japanese stagnation since the nineties can change this evaluation.

³ See for example Blanchard, Dell’Ariccia and Mauro (2010).

Another exercise is to compare the use of unconventional monetary versus fiscal policy, namely credit subsidies.⁴ When considering the recent crises, financial and sovereign, the limitations of models without an explicit role for the financial sector and without financial frictions to evaluate both the causes of the recession as well as the policies to the recovery were self-evident. In the models used before the crisis, under the assumption of the absence of nominal rigidities, the zero bound on nominal interest rates is not a restriction to policy. In fact, it is the optimal policy. However, those models were too simple to be able to take into account the financial channels that a large body of literature agrees were relevant during the recent crisis. One way to model the interest rate spreads as a simple extension to the existing models is to subject financial intermediaries to an enforcement problem, in the spirit of Gertler and Karadi (2011). Firms must borrow to pay wages, those loans must be intermediated, and banks can do that at low cost. This imposes not a resource cost, which for simplicity we assume to be zero, but rather an efficiency cost resulting from the incentive problem that bankers can divert part of the bank's assets. As banks must earn rents, they charge a differential between the deposit and the lending rates; this spread generates profits which are accumulated as internal funds. These lending spreads can be particularly high when banks' internal funds are low as a result of unfavorable exogenous shocks, which can be interpreted as shocks to the value of collateral. There is a sense in which lending rates may be too high in these economies: if they are too high or too volatile then policy can be used to lower or smooth them, increasing welfare. Although interest rate policy does not act directly on the spreads, monetary policy can be used to partially correct those distortions. The spreads are whatever they need to be to align the incentives of banks. Interest rate policy reduces the financing costs of banks, reducing the spreads and the lending cost of firms.

A very low policy rate, possibly zero, will minimize the lending rates and minimize the distortion that it causes on allocations. Nevertheless, because of the Zero Lower Bound, lending rates may still be too high and too volatile. If the policy rate could be negative and if it could be financed with lump sum taxes, then it would be possible to achieve the first best in these economies. A result analogous to the Friedman rule would be obtained, but this rule would be on the lending rate and not on the policy rate. When we introduce unconventional fiscal policy, in this case a credit subsidy, we can act directly on the existing distortions. Credit subsidies play the same role as the policy interest rate, even if acting through very different mechanisms. And, furthermore, they have the advantage that they are not subject to any restriction such as the zero bound constraint. With credit subsidies it is therefore possible to implement allocations that would be previously infeasible for monetary policy, because they would require negative interest rates. The policy rate could be set at some arbitrary level, possibly close to the zero bound. Banks would charge time varying spreads and lending rates. But the rates paid by borrowers net of credit subsidies could be smooth and very low. We also show that the budget implications of the policy rate and tax subsidies are exactly the same if we take into account a consolidated budget constraint between the government and the central bank. This environment allows the comparison of this unconventional fiscal policy with the unconventional monetary policy in place after the crisis, namely the credit easing policies. It assumes that there is an alternative technology, which the central bank can use, in which the enforcement problem is solved by paying a resource cost, which allows the central bank to give credit directly to firms. The comparison of unconventional fiscal and monetary policies comes down to comparing a resource cost versus a deadweight loss. It can be shown that credit easing does not appear to be a good alternative to the already described unconventional fiscal policy.

4 See Correia et al. (2016).

6 Concluding remarks

We find ourselves in this post crisis period with a legacy that, in addition to quite special economic and financial conditions, is also characterized by a legacy coming from new policy tools and new experiments. The monetary toolkit was clearly reinforced and new, unconventional, monetary policies were implemented and are still in place in most developed economies. What I wanted to discuss in this short note was that the new world that monetary policy makers entered was not accompanied by a similar move in the fiscal sphere. And that it is difficult to say whether the return to the old normal of not very low policy interest rates will be there in the near future. The theoretical developments of the last two decades would point to more ambition and originality in the use of fiscal instruments such as the ones described here. This would not give additional room of manoeuvre to tackle the ongoing prolonged recovery but, maybe more importantly, may allow us do so in a more efficient way compared with current policy actions.

It is true that this would require a stronger coordination across institutions compared to the pre-crisis period. But it is also the case that the continuation of the unconventional monetary policy has mechanisms very similar to those of fiscal policy and stronger re-distributional effects, which would imply such coordination may prove necessary in any case.

In this scenario, keeping the research agenda updated as well as a strong dialogue between policy and research is more important than ever.

References

- Adão, Bernardino, Isabel Correia and Pedro Teles (2003), "Gaps and Triangles", *The Review of Economic Studies*, Vol. 70, No. 4, pp. 699-713.
- Adão, Bernardino, Isabel Correia and Pedro Teles (2004), "The Monetary Transmission Mechanism: Is It Relevant for Policy?", *Journal of the European Economic Association*, Vol. 2, No. 2-3, pp. 310-319.
- Benigno, Pierpaolo (2016), "Connections Between Fiscal and Monetary Policies", *Sveriges Riksbank Economic Review*, No. 3, pp. 78-85.
- Blanchard, Olivier, Giovanni Dell'Ariccia and Paolo Mauro (2010), "Rethinking Macroeconomic Policy", *Journal of Money, Credit and Banking*, Vol. 2, No. 1, pp. 199-215.
- Correia, Isabel, Emmanuel Farhi, Juan Pablo Nicolini and Pedro Teles (2013), "Unconventional Fiscal Policy at the Zero Bound", *The American Economic Review*, Vol. 103, No. 4, pp. 1172-1211.
- Correia, Isabel, Fiorella De Fiore, Pedro Teles and Oreste Tristani (2016), "Credit Subsidies", *Working Paper No. 1877*, European Central Bank.
- Correia, Isabel, Juan Pablo Nicolini and Pedro Teles (2008), "Optimal Fiscal and Monetary Policy: Equivalence Results", *Journal of Political Economy*, Vol. 116, No. 1, pp. 141-170.
- De Long, J. Bradford, Lawrence H. Summers, N. Gregory Mankiw and Christina D. Romer (1988), "How Does Macroeconomic Policy Affect Output?", *Brookings Papers on Economic Activity*, No. 2, pp. 433-494.
- Feldstein, Martin (2002), "Commentary: Is There a Role for Discretionary Fiscal Policy?", *Rethinking Stabilization Policy*, Symposium, Federal Reserve Bank of Kansas City.
- Friedman, Milton (1948), "A Monetary and Fiscal Framework for Economic Stability", *The American Economic Review*, Vol. 38, No. 3, pp. 245-264.
- Gertler, Mark, and Peter Karadi (2011), "A Model of Unconventional Monetary Policy", *Journal of Monetary Economics*, Vol. 58, No. 1, pp. 17-34.
- Hall, Robert E. (2011), "The Long Slump", *American Economic Review*, Vol. 101, No. 2, pp. 431-469.
- Ireland, Peter N. (1996), "The Role of Countercyclical Monetary Policy", *Journal of Political Economy*, Vol. 104, No. 4, pp. 4704-723.
- McKay, Alisdair and Ricardo Reis (2013), "The Role of Automatic Stabilizers in the U.S. Business Cycle", *Discussion Paper No. 9454*, Centre for Economic Policy Research.
- Solow, Robert M (2005), "Rethinking Fiscal Policy", *Oxford Review of Economic Policy*, Vol. 21, No. 4, pp. 509-514.