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Some reflections on inflation targeting, monetary–fiscal policy interactions, and unconventional monetary policies

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We revisit the theoretical underpinnings of the monetary policy consensus before the Great Recession. We highlight how they resulted from New Keynesian dynamic stochastic general equilibrium (DSGE) models that (i) neglected the actual process of coordination in markets, (ii) saw price rigidity as an obstacle to the correct functioning of markets, and (iii) overlooked the effects of finance on the determination of credit supply. Furthermore, we outline some elements of an alternative framework conceiving the output-inflation dynamics as the result of coordination efforts in markets that are constantly in disequilibrium. We discuss how such a disequilibrium perspective leads to opposite conclusions with respect to DSGE models about the role of price rigidity and of fiscal and monetary policy interactions, and about the process of endogenous money formation and credit supply. Finally, in such a perspective, quantitative easing policies may play a key role also in normal times as key determinants of the distribution of financial risk.

Keywords: *output-inflation dynamics, New Keynesian models, disequilibrium analysis, monetary–fiscal policy interactions, quantitative easing policies*

JEL codes: *E31, E32,E5, E61, E62*

1 INTRODUCTION

It is now almost ten years since unconventional monetary policies were implemented in the US, Europe and Japan, with mixed results. On the one hand, these policies healed banks and other financial institutions during the various liquidity freezes that occurred in global financial markets following the collapse of Lehman Brothers. In addition, they stopped the rise in government debt interest rates during the sovereign debt crisis

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in Europe. On the other hand, non-standard policies have had a limited ability to reignite real growth and curb unemployment. The latter occurred only when these policies were combined with a significant expansionary fiscal stimulus (such as in the US and not in the European Monetary Union).

The ongoing recovery and the possible return of inflation also marks the end of the period of unconventional policies, and the return to traditional monetary policy. Before the Great Recession, the conduct of monetary policy was unambiguously driven by a consensus on inflation targeting, which has however been unable to prevent the emergence of the financial crisis and the Great Recession. This has led many economists to debate the whole monetary policy framework. At the same time, the elements of a possible new framework are still unclear.

This article proposes some reflections on the above themes relating to the future of unconventional monetary policies, to monetary and fiscal policy interactions, and, finally, to the elements of a possible new framework for monetary policy. We start by examining, in Section 2, the main elements of the theoretical framework underlying monetary policy and inflation before the crisis, and the views it implies about the role of price flexibility and of financial markets. In Section 3, we develop the consequences of an alternative Keynesian view rooted in the works of Tobin (1972; 1995) and Hicks (1974), and which conceives the output-inflation dynamics as the result of a disequilibrium process. In Section 4, we explore the consequences that such a disequilibrium view entails for fiscal and monetary policy interactions. In Section 5 we discuss the possible future role of non-standard monetary policies. Finally, Section 6 concludes.

2 THE MONETARY POLICY CONSENSUS BEFORE THE CRISIS

The use of a monetary policy rule targeting an inflation objective was considered as an efficient way of anchoring inflationary expectations and of minimizing the intertemporal distortions resulting from price rigidities, the latter being the only obstacle to the efficient allocation (and full utilization) of resources operated by market mechanisms.

The above conduct was firmly rooted in the results obtained from New Keynesian dynamic stochastic general equilibrium models (DSGE henceforth, see for example Woodford 2003). According to these models, the task of monetary policy is to correct distortions stemming from rational firm and consumer behavior in the presence of price rigidity. In particular, central banks must follow a rule adjusting the interest rate in response to the inflation gap and the output gap. In addition, the satisfaction of the inflation objective also guarantees the 'divine coincidence' (cf. Blanchard/Galì 2007) of the achievement of the growth objective of reducing the output gap. In other words, the same instrument is able to meet two objectives simultaneously: there is no need to arbitrate between price stability and growth.

This view of the output-inflation dynamics also implies that central banks should not care much about markets where prices are extremely flexible, *in primis* financial markets. As stressed by Woodford (2003: 16):

> The prices that monetary policy should aim to stabilize are the ones that are infrequently adjusted, and that consequently can be expected to become misaligned in an environment that requires these prices to move in either direction. Large movements in frequently adjusted prices – and stock prices are among the more flexible of prices – can instead be allowed without raising any concerns, and if allowing them to move makes possible greater stability of the sticky prices, such instability of the flexible prices is desirable.

It also follows that financial flows, whether internal or external, are considered useful and effective in correcting economic distortions.

3 AN ALTERNATIVE, DISEQUILIBRIUM VIEW OF THE OUTPUT-INFLATION DYNAMICS

Two cornerstones of the New Keynesian DSGE models are the assumption of rational expectations of agents and that of market equilibrium in markets at any time. This, however, amounts to an oversight of how markets truly function and of how they can achieve (good or bad) coordination. New Keynesian models mostly focus on the interaction among a few aggregate variables, under the hypothesis that markets somehow clear while the expectations of agents are model-consistent (Howitt 2012).

An alternative explanation of the output-inflation dynamics, with strong Keynesian roots (Tobin 1972; 1995), is based instead on the observation that markets are heterogeneous and not in equilibrium at all times, and that heterogeneity may persist as a consequence of innovation and diffusion of new technologies, as well as a consequence of changes in consumers' habits and in agents' expectations.

In this alternative view, prices and wages are neither immediately nor even later at their equilibrium values, and adjustments take a while to occur, because of the time agents need to acquire the necessary information. Thus, for instance, wages do not fall immediately following an excess of labor supply unless a high unemployment rate persists. If one further assumes that wages and prices are more flexible upwards than downwards, and correspondingly that the quantities (and therefore the volumes of employment) are more flexible downwards than upwards, then an increased dispersion of excess demands in the goods and labor markets is also able to explain the simultaneous increase in inflation and unemployment (Tobin 1972; 1995).

Taking a disequilibrium perspective on the analysis of the inflation–unemployment dynamics leads to several opposite conclusions with respect to New Keynesian DSGE models. First, when markets are in disequilibrium, price rigidity *may favor* the coordination of market activities, rather than being an obstacle to it. Indeed, in disequilibrium, inflation is inevitably associated with changes in relative prices, and economic agents might be unable to correctly interpret the signals that result from these relative price changes. The rigidity in the price formation process may allow agents to anchor their expectations and it may thus allow them to correctly interpret market signals (see Amendola/Gaffard 2006; 2010). In contrast, excessively flexible prices may produce erratic changes in relative prices and thus blur agents' response to market signals. In turn, this may amplify market signals, possibly creating the conditions for high inflation (Heymann/Leijonhufvud 1995; Leijonhufvud 1997).

Second, in the above disequilibrium perspective inflation is not a pure monetary phenomenon which central banks could simply control via intertemporal substitution effects produced by changes in interest rates. One needs instead to pay attention to the evolution of imbalances across markets, and how they result from different demand as well as supply conditions. In particular, the latter can be affected by processes of structural change induced by the innovation and diffusion of new technologies, but also from the process of readjustment of productive capacities and of exit of firms following a recession (Amendola/Gaffard 1998; 2006). In addition, both demand and supply in markets are shaped by the supply of credit as resulting from the banks' leveraging or deleveraging (more on this below). Again, these may lead to quite different conclusions with respect to the inflation-targeting consensus, as it implies, for instance, the absence of any systematic link between persistent low interest rates (or excessive government deficits) and inflation.

4 ON FISCAL AND MONETARY POLICY INTERACTIONS

The implications of a disequilibrium approach to output and inflation are not limited to the conduct of monetary policy. They also extend to fiscal policy. In New Keynesian DSGE models, if expected inflation exceeds the target, an independent central bank should increase the interest rate and decrease aggregate demand to bring the inflation rate back to the target. In such a world, the government should be reluctant to pursue an expansionary fiscal policy, as it will anticipate that any increase in aggregate demand driven by higher public spending will be offset by an equivalent reduction in aggregate demand due to the central-bank reaction function. Furthermore, the lack of monetary financing of the public deficit leads to a government debt increase if monetary policy is restrictive and fiscal policy expansionary. If, as a result of this dynamics, government debt solvency is questioned, then the only way out is either a drastic reduction in the deficit or debt monetization. To escape this unpleasant arithmetic (Sargent/Wallace 1981), a fiscal rule constraining government deficit is necessary. Thus, there is not really any room for a monetary and fiscal policy mix within the framework of New Keynesian models (except in anomalous situations like the zero lower bound), and constraints on governments' budgets can be beneficial.

However, fiscal rules may plunge the economy into a highly unpleasant dynamics of large imbalances, when the evolution of the economy is viewed as a sequence of market disequilibrium processes. For instance, a restrictive monetary policy constraining investment (as was the case in Europe in the 1990s and thereafter) may reduce the long-term output growth rate and, as a consequence of that, increase the rate of unemployment that does not accelerate inflation. In such a context the introduction of a fiscal rule may aggravate fluctuations. It leads to a fall in public spending during a recession, accentuating the short- and medium-term recessionary effects of the restrictive monetary policy as well as delaying the recovery (see also Dosi et al. 2015, for a model embedding this channel). By contrast, during an expansionary phase, a fiscal rule allows governments to lower taxes without a corresponding decline in public spending, thus contributing to the fostering of inflationary pressures that can in turn lead to a monetary policy tightening and to a premature recession. It follows that fiscal rules can be very asymmetric in a disequilibrium context. No effective constraint is introduced during expansions. On the contrary, the short- and long-term effects of recessions are magnified.

The latter perspective calls for a policy mix able to cope with possibly wrong temporal distributions of excess demand or excess supply. For instance, when a budget deficit responds to a decrease in aggregate demand and to a decline in economic activity, the real question is how long government authorities can accept a budget deficit and what should be its amount before public spending can be relayed by the recovery of private expenditure. Likewise, inflationary pressures and budget deficits should not always be considered as pathological; rather, they should be temporarily accepted when they are the obvious outcome of the coordination process of economies that are naturally out of equilibrium.

5 ON ENDOGENOUS MONEY, FINANCIAL NETWORKS, AND THE FUTURE OF UNCONVENTIONAL MONETARY POLICIES

The neglect of financial markets by New Keynesian DSGE models that we mentioned above is also due to a particular vision of the money creation process, which dates back to Wicksell (1898; 1934). Money is said to be endogenous, in the sense that credits make deposits. Nevertheless, commercial banks fully serve credit applications at the interest rate set by the central bank. This does not simply involve constructing a model without

a liquidity preference money supply (LM) curve (as in Romer 2000; Woodford 2003), thereby removing any arbitrage between money and securities. It also implies removing any explicit reference to the functioning of financial markets and speculation, and to its consequences for credit supply.

This approach, however, prevents one from fully analysing the consequences of quantitative easing policies. The latter were conceived as a response to the 'anomaly' created by the zero lower bound and therefore by the inability of the central bank to stimulate aggregate demand via the usual channel of interest-rate cuts.

Furthermore, banks do not simply adapt to the interest rate set by the central bank (Lavoie 2003). In today's financial systems, money creation largely results from the process of expansion (or reduction) of banks' leveraging. The latter, in turn, occurs via a complex web of financial relations and assets among banks and other financial institutions (Battiston et al. 2016). This has important consequences for the dynamics of banks' leveraging and thus for credit supply. First, financial linkages are conduits of important financial contagion externalities and of the emergence of systemic risk (Battiston et al. 2012). Second, and relatedly, in a financial network, the assets and liabilities of banks, and thus their leverage, are interdependent, and must jointly be determined.

Quantitative easing policies may play a fundamental role in this process, by changing liquidity conditions of banks and the prices of financial assets, and thus they may fundamentally contribute to shaping the banks' leveraging and deleveraging dynamics, and thus the level of credit supplied to the real sector. It follows that these policies should not be described as 'unconventional,' and their role should not only be confined to zero lower bound situations. They should, rather, be part of the toolkit of central bankers also in normal times, by paying attention to how they may affect the whole distribution of credit risk in the economy (Stiglitz 2011).

Quantitative easing policies may thus have a future as tools for the determination of credit supply and in avoiding the emergence of financial crises. At the same time, one must not undermine the finding that these policies have so far had a limited impact on real economic growth, especially in Europe. A cause of this is that the buoyant credit-supply conditions have not been matched by a corresponding demand for credit, partly due to the low demand expectations of firms and households (further depressed by the fiscal austerity policies) and partly because of the increasing 'financialization' of Western economies in recent decades. The latter is not only evidenced by the increasing amount of liquidity remaining in the financial sector itself, but also by the increasing share of financial activities by non-financial firms (Battiston et al. 2018), which finds its roots in the corporate governance structure as well as in the structure of managers' incentives (Lazonick/Mazzucato 2013). Finally, one should also warn about the fact that a credit-driven expansion may also lead to further crises (like the previous one) if it results in an excessive leveraging of households. The latter may happen again, especially if some structural factors that were present before the Great Recession – such as the excessive income and wealth inequality – are not tackled by policy-makers in the near future.

6 CONCLUDING REMARKS

Three problematic aspects of the theoretical framework underlying the inflation-targeting consensus were: (i) the neglect of the functioning of coordination processes in markets; (ii) excessive confidence in price-flexibility; and (iii) the neglect of the impact of finance, due to a particular view of the endogenous money process. We outlined some elements of an alternative framework for monetary policy, which explicitly accounts for market coordination processes and acknowledges its disequilibrium nature. This perspective implies

viewing price rigidities as favoring (and not as an obstacle to) the well-functioning of market activities, and calls for an active interaction between monetary and fiscal policies in order to cope with market imbalances through time. Finally, we explained how quantitative easing policies can have a role in determining the distribution of credit risk in the economy in zero lower bound situations but also in normal times. Their use should not be limited to unconventional situations. Their effectiveness in stimulating the real economy, though, depends also on structural factors that cannot only be addressed by central banks.

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