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Macroeconomic Theory and Macroeconomic Pedagogy:**A response to some criticisms***Giuseppe Fontana* and Mark Setterfield***

It is with great pleasure that we participate in this Special Forum discussion of our *Macroeconomic Theory and Macroeconomic Pedagogy (MTMP)* (Fontana/Setterfield 2009). Before discussing the comments by Claudio Sardonì and Sebastian Dullien, we would first like to outline the substance of *MTMP*. The book contains sixteen chapters written by active research scholars with an introduction by ourselves and a foreword by C.E. Walsh. The main purpose of the book is to present contemporary macroeconomic theory – specifically, New Consensus Macroeconomics (NCM) and alternatives to the NCM – to introductory

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and intermediate undergraduate students. To this end, the chapters portray the most recent developments in macroeconomics in a simple and diagrammatic way. Many of the chapters are intended for direct consumption by students, and are therefore suitable for introduction into the classroom. Others are aimed at our colleagues, with a view to influencing the way instructors think about macroeconomic theory, and hence what they will subsequently seek to teach to their students. In our view the book has two main merits. First, *MTMP* moves beyond the standard *IS-LM* model and some of its theoretical limitations, including the hypotheses of a fixed money supply, and exogenous expectations. Secondly, it builds on successful pedagogical features of previous models (such as graphical analysis of policy choices) to promote a better understanding of real world issues, including the recent financial crisis and related recession.

Our hope is that *MTMP* shows students that macroeconomics is a discipline in continuous evolution, which develops as a result of the interaction between theory and real world events. We hope also that it will inspire our colleagues to reflect on the relationship between current research in macroeconomic theory and the teaching models that they use in the classroom.

Endorsed fundamentals but contentious specifics?

Claudio Sardoni and Sebastian Dullien have provided two very different but equally interesting analyses of *MTMP*. We are grateful for their comments. In our view, the contributors to the book have much to learn from their remarks even if, like ourselves, they may disagree with some of the specific points raised.

It is clear from their opening and closing remarks that both Sardoni's and Dullien's general reception of *MTMP* is sympathetic to the principle objective of the book: to bring recent developments in macroeconomics into undergraduate classrooms. Current research in macroeconomics has moved far beyond the *IS-LM* based macroeconomics that we still teach our students. It is time for current research to re-connect with and reinvigorate our teaching. All of the contributors to *MTMP* are renowned for their research in modern macroeconomics. More importantly, they all share the view that teaching should be research-driven, including teaching at the introductory and intermediate levels. Sardoni and Dullien also endorse the pluralistic approach that underlies *MTMP*, and share our belief that macroeconomics is a discipline in continuous evolution, which develops as a result of the interaction between theory and real world events.

While Sardoni and Dullien endorse the basic aims and objectives of *MTMP*, they nevertheless raise concerns about the way in which contributors to the book (including ourselves) represent the main component of contemporary macroeconomic theory, namely the NCM theory:

»The choice to focus on the simplest version of the »New Consensus« could make some criticisms of it appear somewhat ungenerous.« (Sardoni 2010: 256).

»The problem with this book (and especially in the first, but also the second and third part) is that it uses a rather peculiar interpretation of what the New Consensus is. [Several] contributors [...] start from a baseline model which is not really a New Consensus model.« (Dullien 2010: 266).

According to Sardoni and Dullien, then, some of the contributions to *MTMP* misrepresent the NCM theory. This is a serious claim which deserves our full attention because, if true, it would undermine much of the content of the book. Since Dullien maintains that Sardoni himself also misrepresents the NCM model, it seems appropriate to discuss their criticisms separately, starting with Sardoni's views.

In his note in this Special Forum, Sardoni maintains that several chapters in *MTMP* misrepresent the NCM by oversimplifying the theory. These chapters draw attention to some major deficiencies in the NCM theory, including the lack of analysis of open economy issues, asset price inflation, complex Phillips curves, and the constellation of interest rates that exist in real world economies. Sardoni argues that these criticisms apply to only the simplest representations of the NCM theory. More sophisticated versions include, or can be extended to include, these additional features. Sardoni's argument is interesting and raises the question as to the relationship between different versions of the NCM theory. We will see that the same question emerges from Dullien's analysis of *MTMP*, albeit from a different angle.

When presenting a theory for pedagogical purposes it is important to distinguish essential from non-essential features. The former should always be part of the model presented to students, whereas the latter can be safely ignored – at least *prima facie* – in order to more clearly explain the main purpose of the theory, its core assumptions and workings, and key policy implications. This is as true for the NCM as for any other theory. Hence while open economy issues, asset price inflation, complex Phillips curves, and a variety of short- and long-run interest rates can be added to the standard 3-equation NCM model, these features might be regarded, in the first instance, as secondary for students' understanding of modern macroeconomics. According to this view, they are not and need not be part of the core of NCM theory. It is for this reason that in most if not all presentations of the NCM theory for pedagogical purposes – including some that appear in *MTMP* – these features are either ignored or treated superficially.

But some contributors to the book take issue with this approach. They argue that the features of the economy mentioned above are essential aspects of real world economies, and as such they cannot be ignored in modern macroeconomics models, *including the most basic ones used for pedagogical purposes*. For example, the role of banks and financial intermediaries are ignored or treated superficially in even the most sophisticated version of the NCM theory (It suffices here to refer to the lack of an entry on banks in the index of one of the main treatises on the NCM theory (Woodford 2003)). How, then, are teachers supposed to explain the current crisis with pedagogical versions of the NCM theory? All things considered, then, we believe that the criticisms levelled at the NCM by some of the contributors to *MTMP* are legitimate. They reveal a fundamental difference of opinion among macro-

economists regarding the essential features of real world economies that should be incorporated into even the most basic of undergraduate teaching models.

One way to address the deficiencies of NCM teaching models identified by some of the contributors to *MTMP* is to add *ad hoc* assumptions or hypotheses to the standard NCM model. As a matter of fact, several contributors to the book adopt precisely this approach. Another solution is to amend the standard NCM model substantially or replace it altogether with a different model in order to produce a more realistic and useful macroeconomic model better suited to the explanation of real world events. Again, this alternative approach is explicitly adopted by several contributors to *MTMP*. In our view, the choice between adding *ad hoc* assumptions to the standard NCM model, amending it substantially or replacing it altogether with another model is a matter for individual instructors to ponder. But each choice seems to us to have claims to validity *a priori*, which is why all three are represented to some degree in *MTMP*.

In his note in this Special Forum, Dullien also maintains that several chapters in *MTMP* misrepresent the NCM model. But his critique is more deep-rooted. He maintains that the baseline 3-equation model used in several chapters of the book is not really a NCM model at all. In our view this is wrong: the baseline 3-equation model is a NCM model!

The 3-equation NCM model is made-up of three components, namely a demand component represented by an IS-type equation (relating real output to the real interest rate), a supply component represented by a Phillips curve, and a monetary policy equation which dynamically links demand to supply. All three equations can be derived from explicit optimizing behaviour of individual agents in the presence of market failures, including imperfect competition that generates transitory price and wage stickiness. In terms of the mechanics of the model, price and wage stickiness play a key role in relating the monetary policy rule, via the IS-type curve, to the price dynamics described by the Phillips curve. Via changes in the short-run nominal interest rate, the central bank is able to control the short-run real interest rate. In this way, the central bank can affect the consumption component of aggregate demand, and hence the current level of output, and hence the rate of inflation. When the economy is hit by shocks which cause it to deviate from its natural path, the central bank is responsible for restoring the desired rate of inflation in the long run and – by virtue of its choice of policy instrument – also for bringing output and employment back to their equilibrium levels. This is the basic structure of the 3-equation model, and more generally of the NCM theory. Of course, there are numerous representations of the NCM theory, but they all share the basic features described above. Hence both 3-equation models *and* fully developed Dynamic Stochastic General Equilibrium (DSGE) models are part of the same family of models (namely, the NCM theory) even though the level of complexity is very different between the former and the latter.¹ If the reader is left in any doubt, consider the following quotation from a forthcoming paper about DSGE modelling:

1 It is conventional to distinguish between two schools of DSGE modelling – a real business cycle school, and a New Keynesian school. It is the latter that emphasises the role of nominal rigidities

»Dynamic stochastic general equilibrium models used for policy analysis share a fairly simple structure, built around three interrelated blocks: a demand block, a supply block, and a monetary policy equation. Formally, the equations that define these blocks derive from microfoundations: explicit assumptions about the behavior of the main economic actors in the economy – households, firms, and the government. These agents interact in markets that clear every period, which leads to the »general equilibrium« feature of the models. [...] [Finally] while this brief description appears static, one of the fundamental features of DSGE models is the dynamic interaction between the blocks – hence, the »dynamic« aspect of the DSGE label – in the sense that expectations about the future are a crucial determinant of today's outcomes.« (Sbordone et al. 2010: 3 – 4)

While 3-equation models of the sort used extensively in *MTMP* are clearly *simplifications* of DSGE models, it should be clear from what has been said above that the two do not contradict each other in any essential way.

Dullien's concern that this is not, in fact, true stems partly from his belief that some variants of the 3-equation model used in *MTMP* somehow represent a Keynesian/post-Keynesian aberration that, while providing succour for heterodox economists, depart from the pre-Keynesian strictures of the NCM. Once again, we respectfully disagree with this view: the variants of the 3-equation model at which Dullien directs his criticisms are, for better or worse, every bit as faithful to a pre-Keynesian vision as DSGE models. Hence they are models of a real economy in which money does not fundamentally matter. Second, they are characterised by supply-determined real sector equilibria, from which any systematic departure would result in ever increasing or decreasing inflation (consistent with the accelerationist hypothesis). Finally, while it is true that, in their simplest form, 3-equation models are wholly reliant on central bank policy making for the stability of their supply-determined equilibria, this is a product of policy choice. If the central bank chose to target a monetary aggregate – which it may well do, since there is no *theory* of endogenous money in the NCM that establishes the necessity of using the interest rate as the instrument of monetary policy – the real balance effect would re-assert itself. The economy will then adjust automatically towards its supply-determined equilibrium. In this way, the »flex price ideal« that is central to DSGE models (even those with sticky prices) is alive and well in the 3-equation model in which, absent imperfections, the innate tendency of the economy is to gravitate towards a position of simultaneous market clearing.

Further issues

In his analysis of *MTMP*, Sardonì (2010: 256) also identifies several »missed opportunities« for more effective critical evaluation of the NCM theory. The most important of these arises,

and hence the impact of demand on output in the short run, and it is with this tradition in DSGE modelling that we are associating the 3-equation model.

he argues from the proclivity of supporters and critics of the NCM theory alike to confuse the equilibrium level of output and rate of interest in the 3-equation model (Y^e and r^e , respectively) with the so-called Wicksellian natural (equilibrium) level of output and rate of interest (Y^* and r^*). According to Sardoni, contributors to *MTMP* are not immune from this problem – as a result of which they miss an important theoretical distinction. The variables Y^* and r^* are consistent with the standard long-run neoclassical growth model, and they are basically affected only by technical factors (the same factors that affect the »neoclassical equilibrium under the hypothesis of perfect competition« [Sardoni 2010: 262]). By contrast, the variables Y^e and r^e are associated with a more complex and fragile equilibrium, the outcomes of an imperfectly competitive economy where workers and firms have market power. This means that the social, political, and historical factors that affect the market power of workers and firms also impact on Y^e and r^e . Therefore, it is misleading to refer to the latter as »natural« values. Furthermore, it is erroneous to confuse them with the Wicksellian natural equilibrium level of output Y^* and interest rate r^* .

This is an interesting argument. We should note that there are chapters in Parts III and IV of *MTMP* that propose amendments or alternatives to the NCM theory in which the socially conditioned nature of equilibrium outcomes is made clearer. But perhaps it would be better to describe Y^e and r^e as »Friedmanite« rather than Wicksellian, in view of Friedman's famous definition of the natural rate (of unemployment) as the product of a Walrasian auction subject to all of the various imperfections that characterise actual economies (see Friedman 1968: 8 – 9).² Ultimately, however, this is not the place to attempt to decide whether or not supporters and critics of the NCM theory are right to equate the equilibrium of the 3-equation model with the Wicksellian natural (equilibrium) level of output and interest rate. Our hope is that *MTMP* will inspire our colleagues to reflect on the relationship between current research in macroeconomic theory and the teaching models that they use in the classroom. To the extent that Sardoni's criticism advances precisely this objective, we welcome it.

Summary

In closing, we would like to re-iterate our thanks to both Claudio Sardoni and Sebastian Dullien for their close reading of and thoughtful comments on *MTMP*. Even if we do not agree with all of their criticisms, we have greatly benefited from the exchange of views.

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2 Though Friedman himself justifies his own terminology by insisting that, like Wicksell, he is simply trying to distinguish between real and (ephemeral) monetary forces.

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