

Why Models Matter: The Making and Unmaking of Governability in Macroeconomic Discourse

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Like other branches of economic theory, macroeconomics has the potential not only to represent but also to perform the economy. This performative potential is greatest when a 'governability paradigm' is established within macroeconomic discourse – that is, when theory has produced both a sense of understanding and practical control over the economy. In such periods, macroeconomic models become embedded in the ideational infrastructure of the economy, making possible both the interpretation of past data and the formation of expectations regarding the future. Viewing macroeconomics as a quest for governability, this article traces the formation of two distinct governability paradigms: the neoclassical synthesis paradigm of the post-war era, and the new neoclassical synthesis paradigm of the 1990s and 2000s. It shows how in both cases macroeconomic discourse went through three phases: first, the formulation of a basic vision of the economy; second, the formalisation and operationalisation of this vision; and third, the development of methods to measure, estimate, and predict associated variables. These shifts in macroeconomics and its models matter because the establishment of a governability paradigm tends to produce overconfidence not only among economists and policymakers, but also among market actors. Macroeconomic discourse itself therefore contributes to the cycles of boom and bust in modern capitalist economies.

Introduction

'The economy' is a surprisingly recent phenomenon. It appeared only in the eighteenth century, when Quesnay and his fellow Physiocrats invented the *tableau économique* and for the first time envisioned the economy as a system (Walter, 2011). The process that led the Physiocrats to imagine 'the economy' in this way was the expansion of a scattered landscape of prices into an apparently

encompassing form of social organisation. Although prices had existed before, they were “restricted to trade and finance, since only merchants and bankers used money regularly” (Polanyi, 1977, p. 7). It was only with the commodification of land and labour – alongside the “penetration of foreign trade into [local] markets” – that various prices began to “show any noticeable interdependence”, thus “produc[ing] the conditions that made men accept the presence of a hitherto unrecognized substantive reality” (ibid., p. 7). With the recognition of this reality in Adam Smith’s *Wealth of Nations*, “[t]he word ‘economy’ ... comes in the eighteenth century to designate a level of reality, a field of intervention” (Foucault, 1991, p. 93). It would, however, take another 200 years for the word to acquire its contemporary meaning. Through the birth of macroeconomics in the 1930s, ‘the economy’ becomes more precisely defined as “the self-contained structure or totality of relations of production, distribution, and consumption of goods and services in a given geographical space” (Mitchell, 2005, p. 127).

This emergence of ‘the economy’ radically alters the nature of economic policymaking. While the mercantilists may have sought to simply ‘improve the trade balance’ or ‘maintain the value of the currency’, modern policymakers are instead confronted with a complex and confusing web of interdependent economic relations. But at the same time, the discovery of the economy – and in particular, the development of a macroeconomic language – also empowers policymakers by offering ways of actively *governing* this new sphere of reality (Miller and Rose, 1990, p. 6). Following the seminal contribution by Peter Hall (1993), these inter-linkages between macroeconomic ideas and policies have been carefully studied by economic constructivists, who have shown how statements about and policies in relation to ‘the economy’ are now based on macroeconomic models (Widmaier, 2004; Best and Widmaier, 2006; Babb, 2013). Simply put, models matter because they shape economic policymaking.

The constructivist insight is an important one, but economic models can do more than simply *influence* policy. As Michel Callon (1998; 2007) has shown, they might also *perform* the very practices that make up ‘the economy’ in the first place. Recent research has done much to illuminate the performativity of economics within finance (e.g., MacKenzie, 2006), but so far the performativity of macroeconomics remains understudied. This needs addressing, for as in the case of financial models, macroeconomic models tend to become part of the *ideational infrastructure* of the economy – that is, they help form the basis for shared ideas of

how the economy works, which themselves then work to reduce uncertainty amongst both policymakers and market actors. For example, under the policy regime of inflation targeting, macroeconomic models feature prominently in the communication between central banks and financial market participants (see Holmes, 2014). By reducing the (perceived) uncertainty of the future, such models underpin the formation and coordination of macroeconomic expectations, which in turn form the basis for many long-term investment decisions. As a consequence, the theoretical effort that goes into the formulation of macroeconomic models is of great significance to the economy itself. Macroeconomic *governability* is achieved not simply by making the model an accurate representation of the economy, but also by performing the economy in ways that reshape it in the image of the model (Mann, 2013, p. 204). The quest for governability in the model-world therefore does more than merely influence economic *policy*; it also has performative effects on the very *practices* that constitute the economy. It is for this reason that scholars of political economy would benefit from a deeper engagement with macroeconomic discourse, including its more arcane details.

Undertaking some first steps in this direction, the present article begins by introducing the notion of 'macroeconomic governability paradigms', outlining its key elements and discussing its relationship to Hall's notion of 'policy paradigms'. The two main sections of the article then use this framework to cast a new light on the intellectual efforts that have gone into history's two paradigms of macroeconomic governability – namely, the ('Keynesian') *neoclassical synthesis paradigm* of the post-war era, and the *new neoclassical synthesis paradigm* of the 1990s and 2000s. These paradigms are shown to be the outcomes of protracted and complicated processes, which can be sub-divided into three distinct phases: first, the formulation of a basic vision of the economy; second, the formalisation and operationalisation of this vision; and third, the development of methods to measure, estimate, and predict the associated variables. The 'completion' of each governability paradigm was also followed by a potential fourth phase, characterised by over-confidence among economists and policymakers. Expanding on this phenomenon, the article's final section argues that it is precisely via the confidence-inspiring effects of an established governability paradigm that macroeconomic models realise their performative potential. This is illustrated by the example of the absence of financial market frictions from the dominant

macroeconomic model, which helped to bring about a situation in which financial market participants did in fact act *as if* the expansion of credit was unproblematic.

Macroeconomic Governability Paradigms

Though prominent during the mid-1970s, the idea of ‘ungovernability’ has since fallen into disuse. This reflects the taming of inflation and return to growth that marked the 1980s and 1990s, for it was against the backdrop of an apparent terminal crisis that sociologists and political scientists first developed the term. Whether arguing from a neoconservative or neo-Marxist perspective, these scholars were concerned with the viability of capitalist democracy *as such* (cf. Crozier *et al.*, 1975; Huntington, 1975; Habermas, 1975; Offe, 1976). Consequently, theirs was a comprehensive approach; with (un-)governability, they sought to analyse interactions and contradictions between the political, economic, and social subsystems of modern capitalism. This article uses a narrower concept of governability that focuses on only one sub-system – namely, the economic. From the economist’s viewpoint, the question of governability is not whether capitalist democracy is sustainable in the long run. The question is reduced, instead, to the problem of affecting the value of certain aggregate economic variables (targets) through the manipulation of some other variables (instruments). *Macroeconomic governability* can thus be defined as the extent to which the economy is perceived as amenable to targeted interventions by a central authority. Building on Peter Hall’s (1993) idea of a ‘policy paradigm’, we can speak of a *governability paradigm* when a sufficiently large part of the macroeconomic discipline is in agreement over the causal relationships between instrument and target variables, as well as over the way in which the former should be used by policymakers. The specific elements that constitute a governability paradigm are introduced in greater detail in the second subsection below.

Governability Paradigms vs. Policy Paradigms

Given that Hall’s (1993) notion of the ‘policy paradigm’ continues to be a crucial source of inspiration for constructivist research in political economy (Blyth, 2013; Baker, 2013; Drezner and McNamara, 2013), do we really need the concept of a ‘governability paradigm’? Focusing on the shift in Britain from Keynesianism to

monetarism, Hall was primarily concerned with the question of ‘social learning’ – that is, of how one policy paradigm replaces another. According to Hall (1993, p. 279), a policy paradigm is an “interpretive framework” that is shared widely among policymakers, and that specifies not only the goals and instruments of policy, “but also the very nature of the problems they are meant to be addressing”. As in Kuhn’s theory of paradigm change in the sciences, policy paradigms can be threatened by the appearance of “anomalies” (Hall, 1993, p. 280) – the anomaly challenging the Keynesian policy paradigm during the 1970s being that of stagflation. That said, exactly how do policy paradigms and governability paradigms differ?

Hall (1993, p. 284) rightly points out that “the policy prescriptions of monetarists [did not only] diverge from those of the Keynesians, they were also based on a fundamentally different conception of how the economy itself worked”. This is where the argument of the present article complements (rather than attacks) the policy paradigm approach. If, as two eminent economists have argued, the functioning of the economy is *not independent* from the way it is thought to function (Hahn and Solow, 1995, p. 153), then the origins and precise nature of what Hall calls ‘conceptions of how the economy works’ are just as politically relevant as the way in which these conceptions are translated into policies. However, since the policy paradigm literature has only shown superficial interest in macroeconomics proper, we know very little about how such conceptions emerge. This neglect stems in part from a general ‘econophobia’ within political science (Watson, 2014), but it also reflects a more or less implicit conception of economic discourse as an ideological battlefield. On this view, competing economic models are treated as nothing more than vehicles for competing political programmes. In contrast, I argue that the discourse of macroeconomics follows a set of rules and conventions that *cannot* be reduced to ideological contestation; and that the driving principle of this discourse is a quest to build model-economies that are – at least in theory – amenable to targeted interventions. In other words, macroeconomic discourse has historically taken the form of a *quest for governability*. Moreover, this contest over models is not the same as the contests over policies that take place in the political arena. For instance, the neoliberal revolution in politics could not have occurred had it not been for Phelps and Friedman’s critique of the Phillip’s Curve, for rational expectations, for the Lucas critique, and for the time-inconsistency argument – in brief, had it not been preceded by the New Classical revolution in macroeconomics.¹

The more fundamental argument for thinking in terms of 'governability paradigms', however, is that macroeconomics is performative. The central insight of the new performativity literature is that economics is not just an external influence on economic or political outcomes – for which it is taken in the policy paradigm literature – but rather that the economy itself is a performative effect of economics (Callon, 2005, p. 13; MacKenzie, 2009, p. 31). In the case of macroeconomics, models do not merely influence policy decisions; they also co-perform both the subjects that populate and the practices that constitute the economy as we know it. However, the full performative potential of macroeconomics is only realised when a consensus exists regarding both *how the economy works* and *how its dynamics can be managed or controlled*. A governability paradigm therefore designates a vision of the economy that has become part of the economy itself, enabling it to intermediate between the actions and expectations of economists, policymakers, and market participants alike.

This kind of intermediation is most vividly illustrated by the global expansion of the financial sector during the 2000s, which quite simply would have been impossible to sustain had it not been for the confidence-inspiring effects of macroeconomic models based on rational expectations and efficient financial markets (Morgan, 2013). Macroeconomists are not only students but also producers of expectations (see Wansleben, 2013). Hence, in the same way that law and the Internet form part of the legal and technological infrastructure of the economy, governability paradigms form part of its *ideational infrastructure*. The study of such paradigms should therefore be integral to our study of the economy – there is, in fact, a political economy of macroeconomics.

Three Elements of Macroeconomic Governability Paradigms

In order for governability to be established within macroeconomic discourse,¹ it is not enough for a set of policies to 'work' (or even for these policies to be perceived as working). In addition, there must be an integrated model of the economy that explains *why and how* these policies work, and this model must conform to the norms of the intellectual culture of macroeconomics as an academic discipline. In other words, *theoretical input legitimacy* is a crucial element of governability. The intellectual culture of macroeconomics today rests on a commitment to formalism (Blaug, 2003), and a methodological prioritisation of forecasting over

understanding (Friedman, 1953). Hence, in order for a new macroeconomic approach to provide the basis for a governability paradigm, three analytically separable elements are required. The first is a pre-analytic 'vision' that defines the heart or skeleton of the model. This notion of 'vision' is drawn from Schumpeter, who uses it to capture the initial act of creative imagination that marks the beginning of any radical departure in economic theory:

[I]n order to be able to posit to ourselves any problems at all, we should first have to visualize a distinct set of coherent phenomena as a worthwhile object of our analytic effort. In other words, analytic effort is of necessity preceded by a pre-analytic cognitive act that supplies the raw material for the analytic effort. In this book, this pre-analytic cognitive act will be called Vision. (Schumpeter, 1986, p. 38-39)

Second, this vision must be translated into a formal model of the economy. Of course, in the sense that 'the economy' exists only as an abstraction, any statement about it is necessarily derived from a model. The first *formal* macroeconomic models – that is, models based on systems of mathematical equations – were devised in the late 1930s. Although their methodological foundations have changed significantly over time, macroeconomic models generally serve three distinct purposes. They provide "artificial economic systems that can serve as laboratories" (Lucas, 1980, p. 696); they are used to produce forecasts (Bernanke and Woodford, 1997); and they serve as story-telling devices (Morgan, 2001). While all three functions are essential, different types of models perform differently along each of these lines, and trade-offs are inevitable.

Finally, the third element of input legitimacy in macroeconomic discourse requires that the formal model is able to fit the data in the 'real world'. This involves both retrospective and prospective accuracy; the model must be able to both reproduce data patterns *ex post* and forecast future developments *ex ante*. Here, developments in macroeconomics are inextricably bound up with developments in econometrics. Problems such as aggregation from micro-data, identification and measurement of variables, model calibration, and model uncertainty all fall under this third requirement of empirical fit.

When all three of these requirements are met in the eyes of a

representative majority of macroeconomists, a governability paradigm can be said to be operative. Applying this framework, the following two sections trace the construction of the two governability paradigms that have emerged from the neoclassical and new neoclassical syntheses in macroeconomics.

From Keynesian Uncertainty to the Neoclassical Synthesis

After the Great Depression, several epistemological obstacles had to be overcome before the economy could be once again rendered governable. First, the classical view of the economy had to be overturned so that it could be re-envisioned as a system whose dynamics were governed by human agency. This conceptual innovation was provided by J. M. Keynes in his *General Theory* (2007). However, due to its complexity and non-formal language, Keynes' sweeping vision was in itself not sufficient to re-establish governability. The second phase was therefore to translate his vision into a model that could be taught to students, communicated to policy makers, and, most importantly, formalised mathematically. This was achieved through the IS-LM-model as formulated by John Hicks and Alvin Hansen, which stripped the *General Theory* of some of its more radical elements, and thus paved the way for the so-called neoclassical synthesis. Thirdly, governability requires that a model can be used for forecasting and thus for the 'scientific' evaluation of alternative policy options. This was achieved through the econometric revolution initiated by Jan Tinbergen, Lawrence Klein, and others. The sections below trace the making of a distinctly Keynesian governability paradigm through each of these three phases.

Phase 1: A New Vision – Keynes' General Theory

Keynes' starting point was a polemic against 'the Classics', whom he accused of blindly adhering to Say's Law and of excluding on logical grounds the possibility of an aggregate oversupply of goods, and therefore of labour. From a classical viewpoint, an oversupply of labour will instantly be eliminated by a decline of the wage rate. Unemployment is thus by definition voluntary unemployment – a statement that, in the face of mass unemployment and poverty, could easily be declared a scandal by Keynes. In this context, his agenda for the *General Theory* was to develop a theoretically grounded explanation of and solution to persistent

mass unemployment. At the core of Keynes' theoretical revolution stood the argument that "a monetary economy [...] is essentially one in which changing ideas about the future are capable of influencing the quantity of employment and not merely its direction" (Keynes, 2007, p. vii).² He argued that in a monetary economy with heterogeneous agents and an uncertain future, the Walrasian postulate that markets always clear needed to be abandoned. Because the future is fundamentally uncertain, investment decisions are driven by animal spirits; and in times of crisis, these animal spirits are likely to produce pessimistic expectations for the future. This in turn means that the marginal efficiency of capital decreases, and while a decrease in the nominal rate of interest could stabilise investment, this is prevented from occurring by a higher liquidity preference among investors (who shift their capital from bonds into cash). Uncertainty amongst investors therefore prevents the interest rate from falling to a level that would make investment once again appear profitable. The consequence of this is that aggregate investment fails to keep up with aggregate saving. The balancing of investment and saving therefore occurs instead through a reduction in output and employment, which brings the economy to a new equilibrium characterised by high unemployment. Keynes thus explains how an economy can get stuck in an inefficient equilibrium due to an *endogenous failure* of macroeconomic coordination. The government's task in such a situation is to push the economy back to its full employment equilibrium point through the fiscal stimulation of aggregate demand.

Phase 2: Formalisation and Operationalisation – The Neoclassical Synthesis

The theoretical as well as political success of what came to be known as 'Keynesianism' was not the success of Keynes alone. The *General Theory* was written in highly complex prose and offered little in the way of formal models, which at first hampered its usefulness to policymakers. Keynes had done the conceptual groundwork, but there would have been no 'Keynesian' policy paradigm had it not been for John Hicks' (1937) formalised representation. His IS-LL model – which, due to Hansen (1949), would become the IS-LM model – reduced Keynes' core arguments to an *equilibrium* model of the economy, thereby eliminating the notion of uncertainty that did so much crucial explanatory work in the *General Theory*.³ It was this theoretical move that launched the "Keynesian counter-revolution" (Clower, 1965, p. 270), paving the way for a re-integration of

Keynes into the classical, equilibrium-based tradition of economic thinking (a process that was dubbed the ‘neoclassical synthesis’ by Paul Samuelson). This theoretical consensus – which also went under the misnomers of ‘Keynesianism’ or ‘Keynesian economics’, and which prevailed until the late 1970s – was built on two partially contradictory foundations (see Blanchard, 2008). On the one hand, the neoclassical synthesis substituted the classical rationality postulate for Keynes’ notions of uncertainty and animal spirits (which were clearly unsuited to equilibrium modelling). On the other hand, the supposedly Keynesian element of the neoclassical synthesis was the notion of price and wage *rigidity*, whose main function within the model was to account for the empirically observed non-market-clearing outcomes. I say supposedly because all Keynes did was make the realistic assumption that price adjustment was *non-instantaneous* (Leijonhufvud, 1967, p. 403).

Phase 3: Measurement and Quantification – The Econometric Revolution

The fact that the *General Theory* offered explanations as well as remedies for economic depression and mass unemployment does not account fully for Keynes’ impact on the discipline of macroeconomics. The other part of the story is to be found in the various ways that his conceptual framework interacted with what came to be known as the ‘econometric revolution’ of the interwar period. As the two main protagonists of the later New Classical revolution rightly point out, it was “the fact that Keynesian theory lent itself so readily to the formulation of explicit econometric models which accounts for the dominant scientific position it attained by the 1960s” (Lucas and Sargent, 1979, p. 2). The main reasons for this were that Keynes’ model of the economy was based on relatively few but highly aggregate variables that together formed a simple accounting identity. This spurred a series of highly fruitful interactions between theorists, accountants, and econometricians. On the one hand, accounting and econometrics made possible the measurement of those variables specified in the Keynesian identity. Although Keynes (1939) was critical of the econometric efforts of Jan Tinbergen, he cooperated closely with Richard Stone in devising accounting techniques and practices that would advance the efforts of model-builders (see Suzuki, 2003). On the other hand, Keynes’ identity provided the conceptual framework within which the nascent discipline of econometrics could make sense of the vast amounts of

raw data that were becoming available at the time (Patinkin, 1976, p. 1110). While Tinbergen's (1952) dynamic model of the US economy was the first of its kind, by the time of Klein and Goldberger's (1955) model macroeconomic modelling was already firmly anchored within the policymaking process. These new structural models expressed relationships between macroeconomic variables through a multitude of simultaneous equations, which for the first time made possible econometric forecasts about the outcomes of alternative policy options.

'Keynesian' Governability and Overconfidence

Together, these three phases imbued Keynesian economics with the scientific legitimacy that was required for the neoclassical synthesis to evolve into a widely accepted governability paradigm. This gave rise to a characteristic optimism among economists regarding the predictive power of the new macroeconomic models and, by implication, the possibilities of the associated economic policy paradigm of fiscal stabilisation. As Klein (1966, p. 180) put it, "[t]here is no reason why intelligent economic planning cannot be of just the correct amount, that amount which gives permanent full employment and stable prices". Similarly, Tinbergen (1952) suggested that optimal policy choice was a problem that could be solved with mathematical precision.⁴ The sense that aggregate outcomes were attainable at will was further reinforced as the Phillips Curve – which neither Phillips (1958) nor Samuelson and Solow (1960) had originally presented as a policy tool – came to be understood as a choice menu from which policymakers could pick their preferred combination of inflation rate and unemployment rate.

This remarkable degree of confidence among economists went hand in hand with the unprecedented economic prosperity of capitalism's 'Golden Age'. To be sure, some authors argued that the post-war boom was a result of contingent historical factors, such as the scarcity of labour relative to capital and a cyclical boom in investment (Matthews 1968). Yet most Keynesian economists and policymakers saw a connection between high growth rates and continuing full employment on the one hand, and their own efforts to manage the economy on the other. The 1960s thus became a decade not only of great confidence, but also of *over*-confidence among macroeconomists. As Walter Heller put it at the time:

The promise of modern economic policy, managed with an eye to

maintaining prosperity, subduing inflation, and raising the quality of life, is indeed great. And although we have made no startling conceptual breakthroughs in economics in recent years, we have, more effectively than ever before, harnessed the existing economics – the economics that has been taught in the nation’s college classrooms for some twenty years – to the purposes of prosperity, stability, and growth. (Heller, 1966, p. 116)

Over the years, Keynesian overconfidence has become so notorious that the literature abounds with derogatory terms. Even present-day flag bearers for Keynes have contributed to this. Paul Krugman (1999), for example, has talked about ‘Vulgar Keynesians’, while Robert Skidelsky (2009, p. 129) identifies a “wave of Keynesian hubris” during the 1960s. The most incisive phrase, however, was coined by Alan Coddington (1976, pp. 1263-64), who described the “fiscalist’ policy enthusiasm” of the 1960s as a kind of “hydraulic Keynesianism”. For hydraulic Keynesians, the economy consisted of a number of aggregates whose interaction was determined by a limited set of stable relationships. That is, they envisioned the economy “in terms of disembodied and homogeneous flows” (ibid., p. 1264); a scaled-up version of the hydraulic model of the economy built by Phillips between 1949 and 1950 (cf. Morgan and Boumans, 2004; and Phillips, 1950).

To conclude this section it is worth emphasising that Keynesian overconfidence occurred in spite of the fact that the theoretical foundations of the Keynesian governability paradigm were seriously flawed.⁵ As shown above, the neoclassical synthesis ignored uncertainty and replaced it with the *ad hoc* assumption of price rigidities in order to reconcile (classical) individual rationality at the micro-level with non-market clearing at the macro-level. From the start, therefore, the neoclassical synthesis suffered from inconsistent micro-foundations. According to Olivier Blanchard (2008), “[t]he ‘fundamental flaw’ was the asymmetric treatment of agents as being highly rational and of markets as being inefficient in adjusting wages and prices to their appropriate levels”. Because it had abandoned uncertainty as an explanation for the volatility of investment and output, the Keynesian models of the post-war period depended on the *ad hoc* assumption of price rigidities in order to be able to explain the persistence of unemployment in an otherwise Walrasian economy.

The contradictory theoretical foundation of the neoclassical synthesis is more than an anecdote for historians of economic thought, for it has at least two significant implications. First, it casts doubt on Peter Hall's (1993, p. 279) statement that during the post-war period "British policy was based on a highly coherent system of ideas associated with John Maynard Keynes" – which by virtue of the influence of Hall's contribution – has become firmly entrenched in the policy paradigm literature. This suggests that an analytical distinction should be made between policy paradigms and governability paradigms, and that a separate investigation of the latter can yield important insights. Second, the social fact of economic governability is independent from the logical or mathematical validity of the underlying analytical framework. Policy success – such as the hitting of certain macroeconomic targets – is not predicated on the theoretical soundness of the underlying paradigm of governability. Instead, once established, a paradigm of governability contributes to its own success in a performative way by helping to align expectations in the economy. If both policy makers and policy takers believe in the effectiveness of, say, countercyclical fiscal stabilisation policies, such policies are more likely to bring about the desired outcome. In brief, the model is 'correct' if enough people believe that the model is correct.

From New Classical Ungovernability to the New Neoclassical Synthesis

In a text that became the manifesto of the New Classical revolution, Robert Lucas and Thomas Sargent – who otherwise are unrelenting in their criticism of Keynes – give a prescient account of how, on the basis of the *General Theory*, a governability paradigm had been constructed:

The Keynesian Revolution was, in the form in which it succeeded in the United States, a revolution in method. This was not Keynes' (1936) intent, nor is it the view of all of his most eminent followers. Yet if one does not view the revolution in this way, it is impossible to account for some of its most important features: the evolution of macroeconomics into a quantitative, *scientific* discipline, the development of explicit statistical descriptions of economic behavior, the increasing reliance of government officials on technical economic expertise, and the introduction of the use of mathematical control

theory to manage an economy. (Lucas and Sargent, 1979, p. 50, emphasis added)

In light of this evaluation, the overall dynamic of the new classical revolution and the subsequent new neoclassical synthesis show striking similarities with the Keynesian revolution and neoclassical synthesis. First, as will be shown below, the former too was also primarily a ‘revolution in method’. Second, a new governability paradigm was achieved only when price rigidities were re-introduced into model. The original New Classical model implied that the economy was essentially ungovernable – in the best case, interventions by the government would be ineffective. It was only when ‘New Keynesian’ price rigidities were re-introduced into the New Classical model that the economy became amenable to monetary stabilisation policy. Finally, the new governability paradigm evolved through the same three phases that marked the making of Keynesian governability – that is, the emergence of a contending economic vision, the formalisation and operationalisation of this vision, and an achievement of ‘empirical fit’ through the use of new econometric techniques. The sections below trace the making of a new neoclassical governability paradigm through each of these three phases.

Phase I: A New Vision – Microfounded General Equilibrium Macroeconomics

It was Edmund Phelps (1967) and Milton Friedman (1968) who, by correctly predicting stagflation, provided the first nail in the coffin in which Keynesianism would be officially buried a decade later. Although Friedman’s position in particular was highly influential in the context of the monetarist/neoliberal turn, the focus of the present account is on a longer-term process – namely, the construction of what here is called the new neoclassical synthesis governability paradigm. In this account, Lucas, rational expectations, mathematics, and microeconomics trump Friedman, adaptive expectations, history, and macroeconomics.

Given that the neoclassical synthesis had already re-integrated Keynesian and Walrasian thinking, the game-changing aspect of the New Classical programme was methodological in nature – its insistence that, just like microeconomics, macroeconomics needed to be based on individual behaviour.

Lucas and his followers claimed to provide a ‘micro-foundation’ for macroeconomics, hoping that “the term ‘macroeconomic’ will simply disappear from use” (Lucas, 1987, p. 107-8). Although the notion of micro-foundations was not new at the time, the Lucas critique was widely regarded as a definitive rebuttal of any kind of macroeconomic model that was not based on individual optimisation behaviour. Lucas (1976) had criticised Keynesian macroeconomic models for their use of behavioural equations whose coefficients were constant across different states of the environment. In order to predict the *changes* in these coefficients in reaction to policy changes, not only actors’ current decision rules must be known, but also their underlying *objective functions* (Lucas, 1977, p. 12; Sargent, 1982, p. 383). Consequently, a macroeconomic model can only be used to evaluate alternative policy options if its equations are based exclusively on the preferences and technologies of individual economic actors (households and firms). Only then can the *structural*/parameters (*i.e.*, those not sensitive to policy changes) of the model be determined.⁶

Given their methodological insistence on the priority of microeconomics, what were Lucas and Sargent’s micro-foundations? In their critique of Keynesian macroeconomics, they argued that in theoretical terms Keynes had been wrong on two counts:

[H]e thought explaining the characteristics of business cycles was impossible within the discipline imposed by classical economic theory, a discipline imposed by its insistence on adherence to the two postulates (a) that markets clear and (b) that agents act in their own self-interest. (Lucas and Sargent, 1979, p. 55)

Lucas and Sargent saw Keynes’ dismissal of these microeconomic axioms as an illegitimate shortcut on the way to a macroeconomic model that would be able to account for the business cycle. In contrast, the New Classical programme was built on precisely these two fundamental axioms – always-clearing markets, and individuals as consistent and successful optimisers (Hoover, 1984). Importantly, the latter implies that individual expectations of the future cannot be systematically wrong. One convenient way to model this is through rational – *i.e.*, model-consistent – expectations (Lucas, 1972; 1976; Muth, 1961).

The real business cycle (RBC) models that were built from this vision

represent the economy as a self-equilibrating system populated by rational individuals with perfect foresight. Based on the neoclassical growth model, they are called *real*/business cycle models because they regard cyclical fluctuations in aggregate economic activity as (a) caused by *real* (as opposed to nominal) shocks – that is, by changes in technology; and (b) as *efficient* adjustment movements of a system that is always in equilibrium. The main policy implication is “that costly efforts at stabilization are likely to be counterproductive” (Prescott, 1986, p. 21):

By seeking an equilibrium account of business cycles, one accepts in advance rather severe limitations on the scope of governmental countercyclical policy which might be rationalized by the theory. (Lucas, 1977, p. 25)

[I]nvolving this kind of complete rationality seems to rule out normative economics completely by, in effect, ruling out freedom for the policymaker. (Sargent and Wallace, 1976, p. 181).

Thus, the major New Classical finding with regard to economic policy was that of ‘policy ineffectiveness’. On the one hand, countercyclical monetary policy cannot have any real effects, as it is neutralised by rational actors who instantly adapt wages and prices (Lucas, 1972; Lucas and Sargent, 1979). All the government can therefore hope to achieve is to control inflation.⁷ On the other hand, fiscal policy is also rendered impotent because rational expectations imply that the representative consumer in the model anticipates correctly that a lower tax rate today will require a higher tax rate tomorrow. Instead of spending it, they therefore save the additional income generated by the government’s deficit spending in order to cope with the future tax burden, and real output remains the same as before. This is what Robert Barro (1974) termed ‘Ricardian equivalence’. Hence, the economy as seen through an early New Classical lens was fundamentally ungovernable.

Phase 2: Formalisation and Operationalisation – Price Rigidity, Again

Like Keynes’ radicalism half a century earlier, the radicalism of the New Classical revolution was mitigated over time. History seemed to repeat itself during the

1990s when New Classical and New Keynesian approaches merged into what has come to be called the ‘new neoclassical’ or ‘New Keynesian’ synthesis.⁸ The various strands within the New Keynesian countermovement to the New Classical revolution shared the goal of using nominal price rigidities to provide a microeconomic foundation for the Keynesian notion of incomplete market clearance (see Mankiw, 1990). While in terms of methodology the notion of ‘synthesis’ is misleading – there is virtually nothing ‘Keynesian’ about the New Classical methodological basis of the new consensus model (Woodford, 2009, p. 269) – from a governability perspective the re-introduction of price rigidities into the New Classical model was absolutely crucial. This is because these rigidities provided a theoretical rationale for the use of monetary policy in short-term demand management. On the one hand, frictions are responsible for the failure of the economy to return instantaneously to equilibrium after an exogenous shock. On the other hand, it is due to these very frictions that monetary policy can have real effects at all, at least in the short run. As Clarida *et al.* (1999, p. 1662) put it: “[T]emporary nominal price rigidities provide the key friction that gives rise to non-neutral effects of monetary policy”. Thus, its New Keynesian elements notwithstanding, current macroeconomic theory has not gone back to Keynes’ notion of *endogenous* coordination failure. Instead, it justifies the need for an activist central bank on the grounds of conventional market failure: If price adjustment were immediate, the economy would always be in equilibrium and there would be no need for monetary policy at all.

In the standard model of the new neoclassical synthesis, central bank behaviour is modelled through the so-called Taylor rule – a quadratic loss function that contains the deviation of the inflation rate from the central bank’s target rate, as well as the deviation of current output from its ‘natural’ level (Taylor, 1993). This latter term – the so-called output gap – is equivalent to the deviation of the unemployment rate from its ‘natural’ level. The prioritisation by most central banks of inflation control over employment finds its expression in a higher weight for the inflation term in the Taylor rule.⁹ Michael Woodford (2003) provided the canonical formulation of the new neoclassical synthesis model. His central contribution was a formal proof that the trade-off between output stabilisation and inflation control in the reaction function of the central bank could actually be derived as the optimal solution of the representative household’s utility maximisation problem (Woodford, 2003, Ch. 6). In other words, a society

maximises its welfare if, and only if, the central bank controls inflation and stabilises output. By showing mathematically that inflation targeting not only worked but in fact was – under certain (heroic) assumptions – the *optimal* policy, Woodford's contribution was crucial for the disciplinary legitimacy of the emerging governability paradigm.

Phase 3: Empirical Modelling – The Promises and Limitations of DSGE

The New Classical revolution went hand in hand with a new modelling agenda. Econometric models of the Keynesian era were based on relationships between aggregates that were represented in a large number of simultaneous equations. The Lucas critique derided these models as inappropriate since they posit coefficients for behaviour that are constant over time and irresponsive to policy changes. In contrast, real business cycle models were built on the dynamic optimisation behaviour of individuals with rational expectations. Dynamic stochastic general equilibrium (DSGE) models earned their name because they are a stochastic version of the older real business cycle models. Like those, they are micro-founded in the sense that they are entirely built on the inter-temporal (hence 'dynamic') maximisation behaviour of rational individuals with rational expectations. Their 'general equilibrium' nature means that prices and interest rates adjust to the point where supply equals demand in every market (Dotsey, 2013, p. 11). Their New Keynesian element lies in the integration of money (as a means of payment), monopolistic competition, and nominal rigidities (see Galí and Gertler, 2007). Through the explicit modelling of such 'imperfections', and through econometric methods like Bayesian estimation, modern DSGE models succeed in combining 'micro-foundations' with an empirical fit that is comparable to large-scale econometric models (Del Negro and Schorfheide, 2012). Over the past decade, central banks all over the world have started to use DSGE models for forecasting and policy evaluation (Faust, 2009, p. 52; Kocherlakota, 2010, p. 4).

One of the main advantages of DSGE models in comparison with large-scale econometric models is that their outputs can be directly interpreted and discussed in terms of economic theory (Dotsey, 2013, p. 11). Although the forecasting performance of vector auto-regression models may in many cases exceed that of DSGE models, their purely data-driven nature makes it impossible to interpret their output in theoretical terms. Therefore, in spite of their enormous

complexity and shortcomings, macroeconomists and policymakers welcomed DSGE models precisely because they offered a way to combine general equilibrium modelling with economic intuition and experience.

We thus see that, as in the case of Keynesianism, it took more than a theoretical revolution to (re-)construct macroeconomic governability. Initially, the New Classical revolution had devastating implications for governability. By adding nominal rigidities to an otherwise Walrasian model of general equilibrium, the New Keynesians put governability back on the table. Taken together these two developments provided a theoretical rationale for the emerging policy regime of inflation targeting. Finally, central banks' adoption of DSGE models for policy purposes in the mid-2000s completed the new neoclassical governability paradigm.

New Neoclassical Governability and Overconfidence

As shown above, the establishment of the new neoclassical governability paradigm followed a pattern that closely resembled the intellectual evolution of the neoclassical synthesis paradigm half a century earlier. And the parallels do not end there – just as its predecessor, the new governability paradigm produced a wave of overconfidence among both economists and policymakers. This is epitomised in the now infamous sentence with which the single most influential macroeconomist since Keynes, Robert Lucas, began his 2003 presidential address to the American Economic Association:

Macroeconomics was born as a distinct field in the 1940s, as a part of the intellectual response to the Great Depression. The term then referred to the body of knowledge and expertise that we hoped would prevent the recurrence of that economic disaster. My thesis ... is that macroeconomics in this original sense has succeeded: Its central problem of depression prevention has been solved, for all practical purposes, and has in fact been solved for many decades. (Lucas, 2003, p. 1)

This optimism regarding the ability of policymakers (especially at central banks) to control the business cycle resulted from the experience of the so-

called Great Moderation (Woodford, 2009). The term refers to a period of low volatility in the growth rate of GDP combined with exceptionally low inflation rates that began during the late 1980s and lasted until the onset of the global financial crisis in 2007. Again, as in the case of Keynesianism, it is an open question whether this was due to 'Good policies, good practices, or good luck' (Ahmed *et al.*, 2004). While some studies emphasised good luck in the form of weaker exogenous structural shocks (Stock and Watson, 2003), others argued that better macroeconomic models had put central banks in a position to effectively smooth out the business cycle through monetary policy (Clarida *et al.*, 2000; Bernanke, 2004). The debate was never settled, but most macroeconomists and policymakers came to share a sense of optimism that strongly resembles the enthusiasm that pervaded academic and policy circles during the 'Golden Age' of capitalism under Keynesian governability. Thus, at a colloquium of the European Central Bank in late 2006, Carl Walsh (2007, p. 142) suggested that the interaction between monetary theory and monetary practice might be in "its healthiest state in the last forty years". Interestingly, this optimism did not vanish with the onset of the global financial crisis, as the following quote illustrates:

We are once again in exciting times for macro modellers: a new breed of policy analysis model is entering central banking. Cutting-edge central banks are again beginning to analyze monetary policy as an optimal control problem within those models. For the first time since the mistakes of the 1970s, *science* is gaining ground in discussions of the art and science of monetary policymaking. (Faust, 2009, p. 46)

Such statements testify to what Ricardo Caballero (2010) has called a 'pretense-of-knowledge syndrome' among monetary theorists and policymakers. Yet what *ex ante* appears as successful stabilisation policy turns out to be destabilising in the long run. This seems to be a recurring pattern of economic history, as illustrated both by the Great Inflation that followed the Golden Age (which at first had been attributed to Keynesian macroeconomic management),¹⁰ and by the Great Recession that followed the Great Moderation (which at first had been attributed to better monetary policy).¹¹ The next section offers some reflections on the possible reasons for this pattern.

Governability, Overconfidence, and the Performativity of Macroeconomics

The economic literature offers various explanations for the recurring pattern of overconfidence and crisis, including, most prominently, Minsky's (1986) 'financial instability' hypothesis and Shiller's (2000) behavioural theory of 'irrational exuberance'. These works leave room for, yet do not elaborate, the performative role of macroeconomic theories and models. One way of thinking about this role is in terms of the normalising force of macroeconomics. Since 'the economy' only really exists as an abstraction, any statement about it is based on a *model* of the economy. In that sense, prevailing macroeconomic models influence not only the ideas of economists and policymakers, but also those of market participants, who equally must operate with some idea of what constitutes a 'normal' economy.

At the same time, what is 'normal' inside the model itself depends to a considerable degree on "the stuff that the model is made from" (Morgan, 2012, p. 26). Technology played a decisive role in shaping the governability paradigm of the new neoclassical synthesis insofar as computational capacity, model structure, and policy implications were all inseparably linked. Indeed, this was no less so than in the case of Keynesian governability. Just as New Classical economists ridiculed Keynesians for their lack of formal sophistication (Lucas and Sargent, 1979), the policy implications of their own real business cycle models could partly be attributed to technological constraints. As Narayana Kocherlakota points out, the complexity of micro-founded macro-models could only be brought under control:

if the model [was] such that its implied quantities maximize[d] a measure of social welfare. Given the primitive state of computational tools, most researchers could only solve models of this kind. But – almost coincidentally – in these models, all government interventions (including all forms of stabilization policy) are undesirable. (Kocherlakota, 2010, p. 5)

In other words: The *laissez-faire* implications of real business cycle models partially resulted from the technological constraints under which the quest for a new paradigm of governability took place. As the 1990s went on,

computational constraints decreased rapidly. It was only with this technological progress that several New Keynesian ingredients could be added to the otherwise frictionless RBC-framework. However, the specifications of DSGE models – and thus the view of the economy adopted by those who used them – were still strongly determined by their general equilibrium structure. This was most visible in the absence of frictions in the financial sector, which was a direct consequence of the general equilibrium micro-foundations of the model (Tovar, 2009, p. 6). In order for a unique equilibrium to exist and thus for the model to remain mathematically tractable, the possibility of default (of the representative consumer) had to be excluded by assumption. This so-called transversality condition has been a central element of all DSGE models – individuals must not be insolvent at the end of their lives (Goodhart, 2009). However, because there was no risk of credit default, there could be no function in the model for money apart from its role as a means of payment.¹¹ Moreover, since in the absence of credit-market frictions the phenomenon of credit rationing does not exist, both the activity of financial intermediation and the level of aggregate liquidity in the economy remained beyond the scope of such models.¹² As a result, at a time when most Western economies were experiencing an unprecedented expansion of credit, DSGE models did not even include a financial sector.

Although central bankers and regulators were of course aware that a financial sector existed in the real world, its absence from their models, combined with the efficient markets hypothesis – which was well-entrenched in policymaking circles (FSA, 2009) – bolstered the governability paradigm's fixation with price stability. As long as consumer price inflation fell within a reasonable range of the target rate – which it did most of the time during the Great Moderation – the governability paradigm tacitly assumed that the financial sector would fulfil its task of allocating capital efficiently. The power of this conviction among both policymakers and market participants was such that even major disruptions in financial markets – including the Asian crisis and the bursting of the dotcom bubble – did not lessen their belief in the 'normality' of the underlying economic situation that expressed itself through continually low inflation rates. This belief proved a highly effective device for the coordination of market expectations, without which the pre-2007 credit expansion may well have been less dramatic or more short-lived. Such overconfidence is best understood as a *performative effect* of the epistemic authority that the formal sophistication of

modern DSGE models bestowed upon economists and central bankers, which helped bring about a situation in which market participants acted *as if* the financial sector was what DSGE models suggested – a smoothly-functioning intermediary rather than the driving force of macroeconomic dynamics.

Conclusion

When political scientists talk about macroeconomics, they usually focus on the translation of economic ideas into ‘policy paradigms’ – a process in which political interests are typically granted precedence over the arcane nuances of macroeconomic discourse. In contrast, this article has argued that such nuances deserve to be taken seriously by political economy scholars. This is because beyond influencing *policy* outcomes, macroeconomics also has performative effects on the very *subjects and practices* that make up ‘the economy’ itself. Advocating a conception of macroeconomic discourse as a quest to establish governability within the model, the article has shown that history’s two governability paradigms have been the outcome of a three-phase process, entailing: (1) the formulation of a vision of the economy; (2) the formalisation and operationalisation of this vision; and (3) the development of technically manageable models that ‘fit the data’. Once ‘assembled’, the governability paradigms of both the neoclassical and the new neoclassical synthesis inspired a sense of stability and control that ultimately proved illusory. In what is merely a preliminary illustration of this point, the final section of this article turned to the period of credit growth that preceded the financial crisis of 2007/08, arguing that a technical feature of the prevailing governability paradigm – the absence of the financial sector from macroeconomic models – had the performative effect of encouraging overconfidence and excessive risk taking by financial market participants. Thus, this article has made two main arguments. The first is that *even in theory*, macroeconomic governability cannot be taken for granted, for it is in fact the outcome of a long and complex historical process. The second is that governability paradigms have the power to perform the economy in different ways. It is in this performative potential that a political economy of macroeconomics is to be found.

Notes

- ¹ The discourse of macroeconomics here includes academic macroeconomics as well as the discourse of policymakers in central banks, finance ministries, and so on.
- ² The view that this is indeed the core argument of *The General Theory* was first advocated by Clower (1965) and Leijonhufvud (1967). The following summary is based primarily on Leijonhufvud.
- ³ The centrality of uncertainty was emphasised by Keynes himself in his only major attempt to influence the reception and interpretation of the *General Theory* (Keynes, 1937).
- ⁴ Interestingly, Keynes was critical of Tinbergen's modelling approach precisely because of the latter's use of time-invariant coefficients, and thus his discarding of the problem of uncertainty (Keynes, 1939).
- ⁵ For detailed a discussion of the contradictions of the neoclassical synthesis see Weeks (2012).
- ⁶ Some readers may well wonder why Lucas' critique of Tinbergen was regarded as a revolutionary contribution and soon became '*the* Lucas critique', for as noted above, it was Keynes (1939) himself who first criticised Tinbergen for using time-invariant coefficients.
- ⁷ This is a tricky task, too, due to the time inconsistency problem faced by the government, which itself is conceptualised as a rational vote-maximiser (see Barro and Gordon, 1983).
- ⁸ In the macroeconomic literature both labels are common, depending on how the author in question self-identifies. The term 'new neoclassical synthesis' was coined by Goodfriend and King (1997), whereas the label 'New Keynesian synthesis' is usually traced back to Clarida et al. (1999).
- ⁹ The problem of unemployment played only a minor role in pre-2008 DSGE models, which assumed away heterogeneity (of households), so that the risk of unemployment was equally distributed across all households (Wren-Lewis, 2007).
- ¹⁰ Indeed, while contemporary Keynesians prided themselves for contributing to the longest boom in the history of capitalism, they were subsequently blamed for

having caused the Great Inflation “by bad methodology, or more precisely, by a misunderstanding of the limitations of reduced-form econometric models for policy analysis” (Freedman and Laxton, 2009, p. 18).

¹¹ For an authoritative discussion of the curious absence of money in the theory and practice of inflation targeting, see King (2002).

¹² Since the global financial crisis, the integration of heterogeneity, default, and financial frictions have moved to the top of the macroeconomic agenda (e.g., Cúrdia and Woodford, 2010; Woodford, 2010).

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