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Credit and debt in Economic Theory: Which Way forward?

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Background

This is my background note for the INET workshop on the “Economics of Credit and Debt” (ECD). The objective of the session is to “explore the role of finance in the macroeconomy.” What are the consequences for economics if finance is not just a ‘veil’ over the economy’s fundamentals, but an essential part of the economy (Bezemer, 2012)?

This perspective on the economy was certainly not the dominant view before the crisis and there is now a lot of soul searching of what went wrong?² Where were the economists, whose profession it was to understand the economy, when we needed them most?³

In response, many key policy advisers have since come forward with proposals for reform (e.g. Tarullo, 2012b; Tucker, 2011; Turner, 2011) and the prevailing monetary policy paradigm is increasingly being scrutinized [e.g. Brooking Institute (2011): “Rethinking Central Banking”]. Several central bankers are openly criticizing the status quo, with Deputy Governor Andy Haldane of the Bank of England leading on and embracing the Occupy Wall Street views of greedy financial institutions and fragile debt structures due to unequal income distribution as major causes of the financial crisis.⁴ He is being cheered on by his fellow regulator, Lord Adair Turner, Chairman of the UK Financial Supervisory Authority, who last year asked if policy makers are radical enough in their pursuit of remedies to prevent another financial crisis (Turner, 2011).

Perhaps it is because the crisis in the UK was so deep that the soul searching among policy makers there have been so penetrating. Or would you have expected these observations some years ago from the Governor of Bank of England (King, 2012):

¹ This note has been written to stimulate discussion on how best to incorporate credit and debt in out theoretical and policy frameworks. The views expressed are those of the author and do not necessarily represent the position of Norges Bank.

² Even the Queen has asked why economists did not see the crisis coming

³ For an overview over many of those economists who saw the crisis coming, see Bezemer (2011).

⁴ Haldane has probably been the most provocative central banker of 2012, with his broadside attack on Basel 3 at Jackson Hole, to his embrace of the OWS in the late October speech on “Socially useful banking” (Haldane, 2012d). In between, he has expressed quite critical and constructive reflections on the state on economics and the way forward, see Haldane 2012a, b and c).

November 24, 2012

- *The (mainstream) New Keynesian model omitted a number of (important) factors, including financial intermediation, money, credit and banking; these omissions obviously limit the ability of the model to help us understand the trade-offs between monetary policy and financial stability*
- *In a world of intrinsic (Knightian) uncertainty it is far from obvious how to make decisions. ... The assumption of rational expectation is helpful, but in practice households are on their own in a highly uncertain and complex world*
- *Although there are by now an extensive literature on financial frictions, it turns out that such extensions make little difference to the propagation of shocks, to optimal policy or to the quantitative conclusions*
- *We need to understand more about how stability affects risk-taking, leverage and the cycle of confidence⁵*

As if this was not enough, BIS economists are asking if (may be) the financial sector has become too big (Cecchetti and Kharroubi, 2012) and the IMF is exploring whether changing financial structures can improve economic outcomes (IMF, 2012a). These are indeed exiting times to be a (monetary) economist and each week gives new speeches or a new policy notes to review and reflect upon.

There is currently a very strong drive in academia on financial stability related research, much of it driven by central banks and the international financial institutions (IMF, BIS, FSB, G20, etc.).⁶ The sheer number of conferences and papers pose a practical problem for those trying to keep in touch with relevant research, and it also raises some deep questions about the process of scientific knowledge, especially when much of the new research is done within “silos” of likeminded researchers. There is a risk of repeating the mistakes before the crisis; as the IMF’s Independent Evaluation Office report recently noted (2011): The analysis before the crisis was too narrow and homogeneous ...

Part of the problem was the similar mindset of many mainstream economists working at the Fund with similar background and training who were not open to dissenting views.

Many central bankers would today agree that there is “broad agreement about change”, but then add that this change needs to be incremental, since “the crisis has not materially shifted views regarding the monetary policy framework” (Orphanides, 2011). For these policymakers the required change is more in emphasis, with greater appreciation for the responsibility of central banks in safeguarding financial stability and therefore its stronger role in macroprudential supervision. But this position goes well together with a continued reliance on DSGE models and “financial friction economics”.

⁵ Interestingly, Mervyn King next introduces a “Minsky-Taylor frontier” as a new monetary policy rule. This is a rather shallow tribute to Minsky, who has contributed much more to the issues raised by King. I come back to this later in this note

⁶ The recent *Second Conference of the ESCB Macro-prudential Research Network (MaRs)* is an example of policy-oriented research covering a wide range of topics and methods

November 24, 2012

If left at that, we would not address the difficult questions of shadow banking, near-monies, financial instability and how to get to the “good financial society”.⁷ So, we have to ask, should we be happy with this incremental change and emphasis on macroprudential policies, or do we need something more radical, both in theory and policy? And if so, which type of a theoretical revisions are required and what would the policy implications be? That is the challenge ahead of us.

What is the problem?

As the IMF/IEO report noted: “The perspective before the crisis was too narrow and homogeneous.” Apart from some dissenting voices at the BIS, central bankers were quite confident that independent central bank with inflation targeting had given us the “Great Moderation”, with risk well diversified among those most willing and able to bear it, thanks to the new process of securitization.

At the same time the DSGE paradigm spread like wildfire among central banks, soon to become the dominant modeling framework. As Haldane (2012b) has observed, it was as we all “succumbed to an intellectual virus which took hold of the whole body financial from the 1990s onwards”. Part of the disease was the total neglect of older theories of the cycle in money and banking credit.⁸ Another was “the emergence of micro-founded dynamic stochastic general equilibrium (DGSE) models in economics. Because these models were built on real-business-cycle foundations, financial factors (asset prices, money and credit) played distinctly second fiddle, if they played a role at all” (Haldane, 2012b).

Haldane also notes “with the benefit of hindsight, we built an edifice, a set of models that were quite peculiar in the assumptions they made (Haldane, 2012a). A key assumption was the use of the “representative agent”. Hoover (2006) argues that the “Keynesians were stigmatized for dealing only in aggregates, but the representative agent is nothing else but an aggregate in microeconomic drag” (ibid). The “average man” is a feeble attempt to mimic heterogeneity, but “there is no agent-by-agent modeling of the sort that would really qualify as microeconomics. That much is obvious.”

According to Hoover, any serious microeconomic theory would admit that there is no easy way to get macroeconomic aggregates to behave like their microeconomic counterparts (ibid, p. 147). Rather than admitting that there is a well-known aggregation problem, DSGE economists justify unrealistic assumptions with the argument that in the future their models will be fuller and more realistic. Therefore, their current generation of Mickey Mouse models is entitled to credence. “To state this argument is enough, in my mind to dismiss it”, argues Hoover (ibid, p. 146).

The lack of realistic financial features in the current workhorse models of central banks has been particularly glaring in the new area of “shadow banking,” i.e. banking services

⁷ A favorite theme of Hyman Minsky and his teacher at Chicago University, Henry Simons

⁸ For a good overview of American Monetary History, see Mehrling (1998). For another, see Toporowski (2006)

provided by markets and institutions outside of the regulated banking sector. The total absence of ordinary banks, not to speak of new forms of banking in the economic models of most central banks has been quite embarrassing. Governor Tarullo of the Board of Governors of the Federal Reserve notes: “The capacity of private financial market actors to create what are, at least in normal times, considered cash equivalents raises broader financial stability questions” (Tarullo, 2012b). Questions that so far have not be answerable within the mainstream (DSGE) modeling paradigm.⁹

Gorton and Metric admit that “many professional economists now find themselves answering questions from their students, friends, and relatives on topics *that did not seem at all central until a few years ago*, and we are collectively scrambling to catch up [italics added]” (Gorton and Metric 2012, p. 1).

It should then be comforting that many of the issues raised by the crisis, such as the massive leverage and credit expansion, the growth of the shadow banking system, and the instability of capitalism have been studied for decades by economists trained in the tradition of J. M. Keynes and Hyman Minsky. However, as Benjamin Friedman (2012, p. 303) notes, embracing some of their insights may be hard, as it would undercut some of the key assumptions of the current policy models, like full model-rationality and the inherent stability of markets. Minsky (1986, p. 281) would add that “if the disrupting effects of banking are to be constrained, the authorities must drop their blinders and accept the need to guide and control the evolution of financial usages and practices.”

Tinkering at the margins of older models or adding some frictions to newer ones will not do the trick. A more wholesale revision is needed. This will require mainstream economists to look outside their traditional group of referees and study older economic thoughts and listen to newer, non-traditional voices.

What happened?

As Haldane observed, before the crisis dynamic stochastic general equilibrium (DSGE) models were becoming increasingly popular in central banking circles. Del Negro (2006) observed that “the number of central bank–sponsored conferences on DSGE modeling and the amount of staff resources devoted to DSGE model development and estimation have risen dramatically over the past five years.”

Despite the unrealistic assumptions and the lack of financial institutional features, these models are still being used in the formulation of monetary policy. As Cœurè of ECB admits:

Even though the models at our disposal proved to be relatively inadequate to deal with the complexity of the crisis, still it is the economic framework developed so far that has guided our policy decisions. To put it differently, economic models have shown severe

⁹ The next three paragraphs are taken from my Levy Economics Institute Working Paper No. 712: *Shadow Banking and the Limits of Central Bank Liquidity Support: How to Achieve a Better Balance between Global and Official Liquidity*

November 24, 2012

limitations, but without them, policy-makers around the world would have been condemned to complete inaction or blatantly erroneous actions. Models are devices to help structure, organise and discipline our beliefs (Cæurè, 2012)¹⁰

This raises the interesting question: Which is worst, monetary policy based on no models or monetary policy based on models that misses essential elements of modern financial economies?

Another interesting question is why banks, regulators, investors and everyone else used these assumptions, which were known to be inadequate? Why were these models and their builders widely respected and followed? Danielsson (2009) suggests that “the math is so sophisticated that it discouraged criticism”, i.e. “complexity kills”. Wyplosz (2009) goes on to note that

A slight variation on this theme is that the mathematicians who built these valuation techniques (of Basel 2) knew nothing about finance and economics, while the top bankers and their regulators, who were supposed to know finance and economics, knew nothing about mathematics and were not willing to show it. But us, academics? Well, same again. If you were questioning the state of the art, your colleagues and students would infer that you are not good enough to master the techniques. Or worse, you were making a lot of money selling your expertise, so it would be silly to undermine your reputation by looking outlandish.

Cynical, yes, but probably true? But it is also important to position the development of central banking theory and policy during this period within the broader shift towards Real Business Cycle theories and the replacement of (old) Keynesianism with New Classical Economics.¹¹ This paradigm shift was again part of the general drift away from regulations to liberalism, in capital markets and in finance.¹² “Everybody” believed in the magic of the marketplace, up to the point where banking supervision was put on autopilot waiting for the market based prudential indicators to chime when a financial crisis was coming.

The recent crisis exposed a huge gap between these models and the new financial reality. In retrospect it is strange how so many economists could justify using these simple “Mickey Mouse models”. But at the time, the beauty of simplicity and model consistency

¹⁰ Cæurè goes on to defend the use of DSGE models in the policy-making process. He is particularly proud of the ECB’s own Smets-Wouters inspired model, together with the valuable extensions provided by recent work of Christiano-Motto-Rostagno (Cæurè, 2012). The strong influence of North Western University economists on the DSGE community in European central bank was quite visible at the recent Banque de France conference “Macroeconomic Modeling in Times of Crisis” that “was held to honor Lawrence Christiano (Northwestern University) for his huge contribution to the DSGE literature”.

¹¹ See Rodgers (1989 for a good overview

¹² See Howarth and Sadeh (2012) for an interesting account of how the Capital Market Committee of OECD took on an entrepreneurial role in promoting free capital movements

carried the day. It was almost as if economists had started believing that the real world was like the models they developed. And Haldane (2012a) adds:

The hope was that, by basing models on mathematics and particular assumptions about 'optimising' behaviour, they would become immune to changes in policy. But we forgot the key part, which is that the models are only true if the assumptions that underpin those models are also true. And we started to believe that what were assumptions were actually a description of reality, and therefore that the models were a description of reality, and therefore were dependable for policy analysis.

There is, of course, the usual discussion of realistic assumptions vs. predictive power (Friedman, 1966), but since most of the DSGE models were calibrated and not estimated, they were in fact immune to falsification. As de Negro (2006) notes: "In the 1990s the prevailing view among some policymakers was that DSGE models provide "good theory" to sharpen the understanding of business cycle fluctuations and to address fundamental policy questions." But many DSGE models imposed very strong restrictions on the time series and were rejected against less restrictive specifications such as VARs. In response new (Bayesian) estimation methods were developed with enough nominal and real frictions that their specification had a good chance of fitting major aggregate time series in a traditional macroeconometric sense (del Negro, 2006). And the search for new frictions goes on, to see if these models can recapture some of the lost ground due to the crisis.¹³

Backdrop: Critical times

Before proceeding to the challenges ahead and what should be done, it is appropriate to note that the backdrop for our discussion is perhaps the worst economic crisis in a century? Wyplosz (2009) called the Great Financial Crisis "a disaster of historical proportions", and that was before the recent stagnation in production and rise in unemployment. Today we read about people jumping windows to avoid eviction in Spain, and Greece is just about to

¹³ As noted above, Mervin King discussed this search for the next friction in a rather long footnote in his recent speech "Twenty years of inflation targeting". I quote it in verbatim King (2012, footnote 12): The only way the addition of a financial sector 'matters' in these models is if we contemplate exogenous shocks to the financial friction itself. That is not very instructive. Several interesting papers presented at a Federal Reserve conference in Washington in March 2012 analysed a wide variety of potential "financial frictions" that might create externalities that would justify a policy intervention. My concern is that there seems no limit to the ingenuity of economists to identify such market failures, but no one of these frictions seems large enough to play a part in a macroeconomic model of financial stability. So it is not surprising that it has proved hard to find examples of frictions that generate quantitatively interesting trade-offs between price and financial stability – the finding in these models is that overwhelmingly the most important objective remains stabilisation of inflation.

November 24, 2012

default on its sovereign debt. During the press conference in Brussels EU officials play around with debt ratios and push the deadline into the future in order to avoid an orderly debt restructuring.

Reputable scholars (Portes and Holland, 2012) report that the combined impact of the fiscal compact and the “six pack” will lead to further depression, but still the ECB and the Commission want to pursue austerity policies to improve the market outlook for EU member countries.

So, these are not ordinary times and we are not just engaged in a coffee shop discussion, these are urgent matters, potentially affecting thousands (if not millions) of lives around the globe.¹⁴ As Marriner Eccles (later Chairman of the Federal Reserve under FDR) noted before Congress in 1933:¹⁵

In the mad confusion and fear brought about by our present disordered economies, we need bold and courageous leadership more than at any other time in our history. The orthodox capitalistic system of uncontrolled individualism, with its free competition, will no longer serve our purpose. We can only survive and function under a modified capitalistic system controlled and regulated from the top by government.

Three Challenges for Credit and Debt in Economics

As I see it, there are three main challenges facing us when we want to incorporate debt and credit in economics. First, there are **the conceptual issues**. There is still an amazing confusion about the basics of money, credit and banking, i.e. what is the difference between money and credit; why don't banks lend their newly acquired (base) money; what is the difference between inside and outside money; etc.? Since most basic textbooks in macro either ignore these issues or treat them in a cursory way, there is a need to settle the facts before proceeding.¹⁶ Then there is the complexity issue noted above by Wyplosz. This has both a theoretical issue and a cognitive side. On the theory side, we need to agree on some “ground rules” of engagement, i.e. the methodological approach best suited to the analysis of modern financial capitalist economies. Do we need to model in General Equilibrium (GE) all the time, or are partial models sufficient? Which features have to be present for the model to capture the essential elements of the economy, and which can we skip for the time being?¹⁷ And then there is the simple fact of limited life with limited time; none of us can follow all relevant research. We simply have to skip some interesting papers, thereby

¹⁴ If you have the time, read J. M. Keynes (1919): *The Economic Consequences of the Peace*; substitute “Germany” for “Greece” in the text, and you have a good account of how badly it can go with unrealistic creditor imposed debt service payments.

¹⁵ For a full account of his amazing testimony before the Senate Committee in 1933, see my blogpost at *New Economic Perspectives: “How to End the Crisis”*; <http://neweconomicperspectives.org/2012/09/how-to-end-the-crisis.html>

¹⁶ For a good start, see R. Wray (2012): *Modern Money Theory*

¹⁷ A related issue is the value of using highly abstract Arrow-Debreu models in economics. See Hahn (1973) for a well argued defence of the value of such models

forfeiting a possible scientific breakthrough. With the increased mathematical sophistication of economics, this has become a real pressing problem. The sunk cost is simply too high to easily disband your existing paradigm. Finally, there are **the communication issues**, very much related to the above. How do you engage others in the quest for better models of the monetary production economy? How can we communicate better, if there is neither the time nor interest on the other side for dialogue? And if so, what is the best strategy for engagement.

Conceptual

The Global Financial Crisis (GFC) has - unfortunately - been a blessing in disguise. As a result of the crisis policy makers are all scrambling for advice and this should provide fertile ground for those claiming to have better models. As noted above, there are still major stumbling blocks ahead, like the tight embrace of austerity policies and the pervasive adherence to the loanable fund theory of interest. But there are encouraging signs, especially among some central bankers and open-minded scholars.

Governor Tarullo of the Board of Governors noted recently (Tarullo, 2012a) that:

More work is needed on fundamental issues such as the implications of private money creation and of intermediaries behaving like banks but without bank-like regulation. These implications are potentially quite profound for central banking and banking regulation, considering that the shadow banking system has caused the volume of money-like instruments created outside the purview of central bank and regulatory control to grow markedly.

And Cœurè of ECB observe that new, exciting research has already arrived that should help central bankers better to understand the interaction between their balance sheets and those of the private and public sectors. New research should also

... help us to grasp the determinants of inside money creation, shed light on spillovers between residential and non-residential sectors, macro-prudential issues, and help to quantify trade-offs in different policy strategies.

The newly established Macro-Prudential Research Network is working on these issues (ref. the recent ECB conference) “trying to develop models linking financial stability and economic performance; early warning systems and systemic risk indicators; and on assessing contagion risks” (Cœurè, 2012). Most of this research is conducted within the traditional economics paradigm, so there is need to broaden up and reach out and connect with other research initiatives if a better paradigm for money and credit is to be established among policy makers. Building on the insights of Keynes and Minsky, and supplemented with recent work by newer scholars, there is a collective weight waiting to be harnessed for policy relevant research.

Bringing forward some of the lost heritage (asked for by Haldane and others) on banking and monetary theory should also be able to connect with policy makers. It is becoming all the more clear as the crisis proceeds, that we neglect the lessons of history at our peril.¹⁸

Complexity

This is a key issue in our discussion of modeling strategies for finance and debt in economics. Let me first present the views from “the Master himself”. Woodford (2012) has recently observed that:

I believe, then, that it is inevitable that economic analysis will largely be conducted with the use of mathematical models, and that often these models will propose “complete descriptions” of “artificial worlds.” This does not mean, of course, that the conclusions obtained from such models should be regarded as applicable to the real world, simply because of the rigor of the reasoning used in deriving conclusions within the world of the model. An assessment of the realism of the assumptions made in the model is essential --- not, of course, an assessment of whether the model literally describes all aspects of the world, which is never the case, but an assessment of the realism of what the model assumes about those aspects of the world that the model pretends to represent. It is also important to assess the robustness of the model’s conclusions to variations in the precise assumptions that are made, at least over some range of possible assumptions that can all be regarded as potentially of empirical relevance. These kinds of critical scrutiny are crucial to the sensible use of models for practical purpose.

This makes sense to me, at face value. I.e. our models will always be approximations, not copies of the real world. The key assumptions must be realistic, and the conclusions must be robust to realistic changes in the same assumptions. So far, so good. Still, when we get down to the specifics of his models, there is this persistent lack of essential features of our modern financial economies, like banks, credit and money.¹⁹ As Goodhart and Tsomocos notes (2011): “In the standard models everyone is risk-less, so anyone’s IOU can and would be immediately and fully acceptable in payment for goods or services.” There is no need for money!

Cæurè (2012) from the ECB puts up a similar defense for the (unrealistic) mainstream models:

Even though the models at our disposal proved to be relatively inadequate to deal with the complexity of the crisis, still it is the economic framework developed so far that has guided our policy decisions. ... Models are devices to help structure, organise and discipline

¹⁸ History of economic thought has unfortunately almost disappeared from the university curriculums; much would be gained if these courses could be restarted

¹⁹ As Frank Hahn noted in 1982 (p. 1): “The most serious challenge that the existence of money poses to the (standard) theory is this: the best-developed model of the economy cannot find room for it.”

November 24, 2012

our beliefs. They help identify the key assumptions on which any policy recommendation rests, and provide an essential framework for general-equilibrium policy analysis. In economics, as in other sciences, they highlight channels of interest and abstract from other factors. They can (and should) be tested against data, bringing our dismal science, economics, one step closer to Popperian refutability. They also encourage the building of new data sets and decisions upon appropriate data concepts. Ultimately, they help us to learn from past errors and provide safeguards against political adventurism.

Well, models should highlight essential features of the economy and abstract from the less relevant ones. They should also be testable and provide the basis for good policy advice. As always the question is which features are essential and required in a good policy model. Some continue to argue that their model can be useful for policy analysis even if the model logically exclude money (ref. Hahn's argument). We should have no illusions about the chances of a new paradigm for credit and debt in economics, as these issues have been around for years, if not decades. But as noted above, the GFC now provides a window of opportunity for more realistic theory- and modeling framework, and the prize is up for grabs. Perhaps will it be for the next generation to see this work come to fruition. Since as Keynes once observed, faced with the radical implications of Abba Lerner's new theory of functional finance (Colander, 1984):

It is very original and grand stuff. I shall have to try when I get back to hold a seminar for the heads of the Treasury on Functional Finance. It will be very hard going-probably impossible. I shall have to temper its austerity where I can. I think I shall ask them to let me hold a seminar of their sons instead, agreeing beforehand that, if I can convince the boys, they will take it from me that it is so!

But when central bankers today ask for a new analytical framework, we should grab the invitation and do our best to provide them with a better alternative. So when Vítor Constâncio, Vice-President of the ECB, notes (2012) that they (ECB) has identified ... "the lack of widely accepted theoretical and empirical frameworks that thoroughly integrate realistic characterizations of widespread financial instability in aggregate models as one of the main weaknesses of contemporaneous economics laid bare by the crisis", we need to engage. True, there is a wide gap between such public invitations and the willingness to embrace change. But when he states that the "academic community and policy authorities should engaged in research to improve this situation" there is an opportunity for dialogue.

Central bankers like him want to have detailed and well-tested models and frameworks with (financial) features ... so that they can base their macro-prudential regulatory policies to contain systemic risk on a (better) scientific foundation. Are we up to the challenge?

Communication

Assuming the best argument wins, the prospect of winning support for a more realistic modeling framework of credit and debt in the economy should have a fair chance. But as

November 24, 2012

Wyplosz (2009) have observed in an excellent note just after the GFC, called “Macroeconomics after the Crisis: Dealing with the Tobin Curse” there are real barriers to communication here, that sticks deeper:

Early on in my career, I tried to master both macroeconomics and finance, because I was enormously influenced by Jim Tobin’s observation that the most important challenge for research was to bridge the growing gap between macroeconomics and finance. ... Quickly, however, macroeconomics and finance became so specialized that mastering both fields appeared to me as mission impossible, and I chose macroeconomics. But I deeply believe that the divorce of these two fields is probably the fundamental reason for the current crisis, this is what I call the Tobin curse.

I sympathize enormously with this description of the unfortunate state of our affairs. As Goodhart once observes, the split between finance and economics in respectively Business schools and Economics Departments has been a curse for our profession, which is now coming to haunt us. At the same time, the sheer complexity of each subject makes it perhaps a superhuman effort to master both fields well? So, we are left with micro oriented finance professors who believe in Modigliani-Miller and macro economists who stick to their DSGE framework without any financial features at all. This is certainly not the best basis for communication with those wishing for a more realistic paradigm of finance and debt in economics.

Then there is the issue of sunk cost. As Haldane again observes (2012a):

There are huge amounts of inbuilt inertia in academia. I don’t see that as a criticism, more of an observation. It’s human nature: People don’t like re-writing their lecture notes, especially when they haven’t got any new notes to write. That’s not a surprise. The incumbent academics and policy makers have too much human capital tied up in the project and are too old – like me – to drive it to the next place.

So perhaps will we have to wait for the next generation to pick up the challenge here, building on the ashes of the current crisis and constructing a better theoretical framework for analyzing our financialized economy?²⁰

Towards a meaningful Macro Model of the Economy

Before concluding with my comments on “what can be done”, I would like to refer back a short paper by Hyman Minsky with the quite so topical title: *Towards a meaningful Macro Model of the Economy*. In that note, which was marked confidential, Minsky put forward a proposal to his close colleagues at Washington University in St. Louis (incl. Laurence Meyer) to “participate in a cooperative research effort on the aggregate behavioral characteristics of

²⁰ Epstein (2002) notes that central bank policy is not just based on arguments, but class struggle and the power balance between the rentier class and workers. Inflation targeting is in his view “a reflection of the growing power of the financial markets” (p. 16)

the thoroughly financial American economy” (Minsky, 1970, para. 1). Large scale econometric forecasting and the monetarist models have failed as guides to economic policy (para 3) and to be replaced with a theory that recognize the financial nature of the economy. “The fundamental time path of the economy is strongly cyclical” (para 17). Therefore “the paradigm for our alternative will be the business cycles” (para 18). “In our formal model construction we will trust aside as irrelevant any model based upon a modification of a barter formulation. Rather we will insist upon a (model that includes the essential elements of) fully developed financial system” (para 19).²¹

Then fast-forward twenty years, when Minsky had “retired” to Levy Economic Institute, and he wrote this comment on Ben Bernanke’s paper “Credit in the Macroeconomy” (Bernanke, 1992-93). He notes the “money and financial interrelations are not (at all) relevant to the determination of the equilibrium variables ... of the dominant economic paradigm” (p. 2).

The dominant macroeconomic paradigm builds upon the microeconomic paradigm that ‘real’ factors determine ‘real’ variables.” The implication is “that in both the dominant microeconomics and the core of the dominant macroeconomics money and finance are neutral. The essential problem is whether any macroeconomic theory that is constructed upon a set of assumptions from which the proposition that money and finance are neutral is derived, can be a serious guide to understanding our economy and to the development of (sensible) policies for our economy (ibid.)

Minsky then goes on the sketch “an alternative paradigm” (p. 5). This is a model based on interrelated balance sheet capturing the essential elements of a capitalist economy among the key sectors: Households, nonfinancial firms, financial institutions and the government. “In this structure the real and the financial dimensions of the economy are not separable; there is no so called real economy whose behavior can be studied by abstracting from financial considerations” (p. 6). In such a modeling framework banking and financial intermediation will be active forces in the economy which by financing investment forces resources to be used to put investment in place, and thereby fostering the development of the economy (p. 18). This framework would also capture the swings in the economy, when public debt financed spending would take over the burden of sustaining gross profit if the private economy weakens (p. 16).

Minsky then pay tribute to Keynes and note that he (in the General Theory) “sought to create a model of the economy in which money is never neutral” (p. 7) “The non-neutrality of money ... is due to the difference in how money enters into the determination of the price

²¹ Minsky recognized that it would be hard to get financial support for this proposal, since he noted at the end that “we cannot expect NSF to fund research whose first premise is that everything that the NSF has funded in monetary or macro analysis (so far) has been irrelevant if not foolish and perhaps downright harmful” (para 20)

level of capital assets and that of current output... This Keynesian non-neutrality reflects an essential aspect of capitalism” (p. 8). And Minsky goes on to note that

IT strikes me that this way of modeling non-neutrality is superior to the asymmetric information way in which non-neutrality depend upon borrowers being smart and bankers being dumb (ibid.)

It is already well known that Minsky’s financial instability hypothesis represent an alternative paradigm upon which we can build a better model of credit and debt today. But these quotes also underlines some important aspects of this mighty endeavor:

- It is not simple, since even Minsky use most of his life on the same task, without completely crossing the line (of formalizing his deep insights)
- Keynes used most of his life developing a theory for a monetary production economy; he was almost there when his untimely death and the IS-LM framework derailed his efforts
- Many other theorist before them and today are working on the same issues, some are close to the finishing lines, other further away. But since our profession moves both in circles as well as forward, sometimes we need to reach back to what others have accomplished before proceeding to the closing line
- I believe we all would benefit from re-visiting the writings of Hyman Minsky in our quest for a workhorse macro model of our monetary production economy.

Which Way Forward

As the experience of Minsky shows us, we should be under no illusions that the mainstream will easily accept an alternative paradigm for money, credit and banking. This is not just a parlour game, but a battle of the minds involving high stakes for strong interest groups as well. Still, as noted several times before, the GFC has left the field wide open for constructive advances, and policy makers are receptive to alternatives to the current workhorse models that failed miserably during the crisis. Sticking to my framework (of conceptual, complex and communication issues), I suggest we need to move ahead on these three fronts to advance forward.

Conceptual

“The workhorse model we used in economics is no longer working properly. Hence we are compelled to think innovatively, to seek insights from disciplines beyond our own”

(Haldane 2012a)

Pluralism

This is an invitation to cross boundaries and mix traditions. We may not immediately be able to bridge the gap between finance and economics, but there is plenty of other ways to

November 24, 2012

cross-fertilize our own profession in the search for better and more realistic economic models. Haldane favors network models, while other would prefer flow-of-funds models. What is important is to be open-minded and not engage in turf fighting.²²

There is such a wide field of inquiry in economics, that it would be wrong to categorize whole groups as being on the “wrong track” altogether. We need to be respectful of alternative traditions (including the DSGE tradition), even if they work within framework seemingly at odds with essential features of the economy. Model specification and choice of assumptions should be scrutinized and be open to discussion. We should, however, insist on empirical validity and falsification as a key criterion for scientific progress.

Modeling strategy

The methodological ground rules should be discussed in the open. Too much disagreement today can be traced back to “meta” themes that are never clearly articulated. Having cleared this hurdle, the discussion should then focus on which are the essential elements that need to be included in a more realistic paradigm for credit and debt in the economy.

Here there are legitimate differences. Some, like Goodhart and Tsomocos (2011) would argue that ...

the main deficiency is a failure to incorporate the possibility of default, including that of banks, into the core of the analysis. With default assumed away, there can be no role for financial intermediaries, for financial disturbances, or even for money.

In their view, the study of monetary policy requires as a minimum “the inclusion of money, credit, banks and liquidity. To do this in a Woodford/RBC real economy model is “akin to performing surgery on the operating table without the patient being present (Goodhart, Shubik and Tsomocos, 2012)

Or as Claudio Borio of BIS recently observed at a DSGE seminar at the Banque de France (2012):

Macroeconomics without Financial Cycles is like Hamlet without the Prince!

Still, as noted above, despite the agreement that the current models are inadequate, the field is so far wide open as to which approach is best suited as the new workhorse model for (monetary) policy making.

Basic view of money

Another issue that needs to be addressed is the conceptual mess related to money and credit issues. Here there are also competing paradigms, but recently the GFC has led to an amazing converges among unlikely bedfellows. As the severity of the crisis increased, the functional finance view has gained support either in the form of Goodley-ian balance sheet

²² Like who is the most “true” Keynesian; such sectarianism will only weaken our common cause

analysis by Richard Koo or Martin Wolf in the Financial Times, or as Austrain inspired gold-bug followers promoting compensatory finance to replace collapsing shadow (near-)monies.

A modern description of functional finance has been provided by (among others) R. Wray (see 2011 for a short summary version and 2012 for the most recent book on the subject):

- *Money is not a commodity or a thing. It is an institution, perhaps the most important institution in the capitalist economy.*
- *The monetary system, itself, was invented to mobilize resources to serve what government perceived to be the public purpose.*
- *The primary purpose of the monetary monopoly is to mobilize resources for the public purpose. There is no reason why private, for-profit institutions cannot play a role in this endeavor. But there is also no reason to believe that self-regulated private undertakers will pursue the public purpose.*
- *The amazing thing is that the free marketeers want to “free” the private financial institutions but advocate reigning-in government on the argument that excessive issue of money by government is inflationary.*

There is a serious need for clarification on this basic issue, since many continue to advocate the “Robinson Crusoe view of money” (see Praet, 2012 for a recent example). There may still be some way before this view of money is accepted since, as Colander (1984) and Wray (2011) notes, functional finance can be too radical for some (even Keynes):²³

Lerner approached Keynes and asked: “Mr. Keynes, why don't we forget all this business of fiscal policy, public debt and all those things, and have some printing presses.” Keynes, after looking around the room to see that no newspaper reporters could hear, replied: “It's the art of statesmanship to tell lies but they must be plausible lies” (p. 1574)

Empirical based macro models

A good way to bridge differences is always to have a clear empirical focus. Haldane (2012c) stresses the need for better data (e.g. for OTC derivatives transactions and the repo market). A better knowledge of the structure of the financial system should provide a better basis for building good models.²⁴ Such knowledge can then be used to evaluate system structures and begin thinking of system redesign, or just improving decentralized decision making with better incentives.

One example of the impact of good empirical work is the recent discussion of the fiscal multiplier. The IMF made quite a splash with its World Economic Report (IMF, 2012b) where its estimates contradicted the official views of the Eurozone countries. The discussion is still ongoing.

Another example is the work done on “financialization”, documenting the exponential growth of finance and how it has come to dominate all aspects of our societies. The same

²³ The scene is a dinner party arranged by Alvin Hansen for Keynes in 1945, on the occasion of his visit to the US

²⁴ Provided there is an interest in matching models to empirical facts

facts are now being rediscovered through mainstream work with flow-of-funds models. It shows how the financial balances have grown over time; the strong growth in OTC derivatives markets; the interconnections between the real economy and the financial sector, as well as the interconnections within the financial sector. This is a good basis for agreeing on the facts and start building models that reflect these essential elements of our monetary production economies.

Operational focus

Maintaining an operational focus throughout should provide access to policymakers and avoid waste of time on esoteric theoretical discussions. The urgency today for better policies should lead us to always test our work against the most pressing policy issues at hand. Obviously, there needs to be long term investment in model building and theory development, but the usefulness of theory development should nevertheless be of overriding concern.

Mixing approaches, focusing on empirical facts and with a clear operational focus should ensure better theories and policies. Central banking has always been an art, as well as a rigorous science. Only by sticking to an open-minded, broad based approach can we be sure to make progress.

Complexity

How can we balance the need for more realistic models with traceability and computational ease? The wish list is long for essential elements that should be included in a new modeling framework (but not all can be accommodated at the same time).

Realism vs. complexity

Cœurè from ECB would like “at least some of the key aspects of, and key players in, the financial crisis: financial factors and intermediaries, the shadow banking sector, the interaction between sovereign and banking solvency risks and financial interconnectedness.

In order to draw the full lessons from the previous crises, it would be important to include elements such as housing markets and mortgage finance, heterogeneous agents (borrowers versus lenders), richer flow of funds analysis and asset and liability structure, as well as to develop good theories of maturity transformation. More generally, models should acknowledge the evolving role of money in the economy, including the determinants of inside money creation (e.g. within financial markets and in the shadow banking system) and how it interacts with central bank money” (Cœurè, 2012)

I could not have said it better, but is it feasible, all at the same time? Key to the way forward is obviously how these different elements are included in new theory and models. Keeping to their financial friction framework, Adrian, Colla and Shin (2011) suggests that “at least the following five stylized facts should be reflected in macro-financial models: coexistence of bank and bond finance, substitution from bank to bond financing, increasing

November 24, 2012

credit spreads, stickiness of equity prices and procyclicality of bank leverage.” How to incorporate all these elements should be discussed in an open-minded manner that should bring the profession forward (and closer together?) towards more realistic macro models.

As Haldane (2012a) notes, “it would be a real mistake to confine ourselves to one class of model. We need a more plural approach to the way we think things through.”

GE or partial models?

Even if many insist on a GE framework (Goodhart, Shubik, and Tsomocos, 2012) or even a DSGE framework (Benes and Kumhof, 2012) there should also be room for more partial models, especially dealing with specific policy issues.

Frank Hahn, who was always a strong supporter of GE, admitted that: *The Arrow-Debreu equilibrium is of great use for many purposes ... but for many important purposes a more modest Marshallian apparatus will do well* (Hahn, 1973, p. 69). And Nobel laureate James Mirrlees concurred, when he recently noted that

It is probably impossible to develop rational dynamics. A possible answer would be that we cannot have it; partial theories may be the best we can do (Mirrlees, 2012)

Still, to bridge differences and to facilitate discussion, we should encourage formal reasoning with the use of mathematical models whenever it is considered helpful. As Haldane notes (Haldane 2012a): “ I do not believe that the route to sounder economic reasoning will involve an abandonment of economists’ penchant for reasoning with the use of models. Models allow for internal consistency.”²⁵

Communication²⁶

Where do we go from here? The GFC has opened up the field for new approaches and policymakers are more receptive than ever for good, solid advice. Can we provide it? And in which form?

Building on solid foundations

The insights of Keynes and Minsky should obviously be part of a new modeling framework for our financial economies. This was Minsky’s main agenda, and a new paradigm for credit and debt in Economics should incorporate his main findings.²⁷

²⁵ Bridging gaps and resolving differences will often require (much) more formal arguments than what is provided in this note. That will invariably narrow down the field of discussion and make more broad sweeping statements impossible. Thus, the amount of progress that can be made may be smaller, but it will be built on more solid ground.

²⁶ I was a bit up against the deadline here; too be expanded

²⁷ Too often scholars pay lip-service to his work, by quoting his (famous) 1986 book: *Stabilizing and Unstable Economy*, without further references. For a personal account of Minsky’s work on banking and endogenous finance, see section VI *Excessive Global Credit* in Moe (2012)

Take charge of the framing

Communication is also about “framing”. As an example, if all discussions of monetary policy have to start within the DSGE framework, than alternative views will not prevail. As cognitive and brain sciences have shown, “reason about social and political issues works primarily in terms of morally-based frames, metaphors, and narratives, and only secondarily, if at all, in terms of policy, facts, and logic” (Lakoff, 2011).

Build alliances

It always pays off to build alliances, on the way to better results. Rather than be concerned with internal discussion, serious scholars should engage with those interesting in building more realistic models of the financial sector. The span of approaches is currently wide, involving cutting edge central bank research (such as in the ECB, BoE and the New York Fed), or in the large international organizations (see Benes and Kumhof, 2012), for a recent interesting example).

Embrace different traditions

As Haldane also have noted (Haldane (2012b)), we need to “reinstating money, credit and banking in the core curriculum, as well as refocusing on models of the interplay between economic and financial systems. These are areas that also fell out of fashion during the pre-crisis boom. ... Institutions also matter, be it commercial banks or central banks, when making sense of crises, their genesis and aftermath. They too were conveniently, but irresponsibly, airbrushed out of workhorse models. They now needed to be repainted back in. ... Conventional models, based on the representative agent and with expectations mimicking fundamentals, had no hope of capturing these system dynamics.”

And as David Laidler (2012) noted over a decade ago, it would be foolish not to have a rather broad based view of what could be relevant for monetary policy implementation.

If we can get less religion and more facts, the future of theory building and policy formulation should become much easier. This would according to Haldane (2012c) be

... a world in which central banking is more conversational, it's certainly more humble about what's possible.

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