

Rebuilding Macroeconomics Discovery Meeting, 23rd January 2018

Is the Financial System Fit for Purpose?

Summary Note

Today we discussed the question, “*Is the financial system fit for purpose?*” There were four topics of discussion: (1) finance and stability, (2) finance and monetary policy, (3) international finance, and (4) financial institutions. We had six introducers who helped start our discussion around these four topics and then the discussion was opened up to our guests. Our introducers are formally cited at the end of this summary.

Stability and Finance

Timothy Johnson began the discussion by drawing out a point in the background note: economists tend to think about *scarcity*, whereas finance focuses on *uncertainty*. This suggests a contrast between how economics and finance (especially mathematical finance) view markets. In economics, a market is mediated by brokers who bring people together for a fee and a representative price emerges. In finance, markets are mediated by market makers (jobbers in old parlance or brokers/dealers in new parlance). They offer a “bid-ask spread” not knowing the position others want to take, and execute whichever side you want to do. This implies if a price is taken in this type of market, it is a disputed price, and not an agreed price as in the way economists typically think of price setting. Economics tends to focus on finding an agreed price that represents the asset’s value. Finance focuses on disputed prices and there is always doubt around that price.

This distinction also highlighted differences in how economists and finance view interest rates. In economics, it is the price of money, with money being a scarce resource. In finance, it represents the credit worthiness of the borrower. Financial markets are dominated by the concept of “no arbitrage” which can only work in a world where different prices are possible (and where you can buy and sell at different prices). This leads into the possibility of arbitrage being related to reciprocity, and introduces a social dimension to finance.

Stefan Leins suggested that after the crisis, the most important policy goal was reinstating stability. It is often said that higher risk leads to higher reward, and with stability comes lower risk and hence lower reward. One possible way financial markets could be destabilising is through competing expectations on how the market will develop in the future. Whilst some agents would prefer stability, others would prefer financial markets to be a destabilising force so that they can bet against each other. How can we protect the wellbeing of people who depend on financial stability from those who seek to destabilise markets? To answer this, it would be useful to describe the intentions of different groups of people and move from discourse to practice: people may *say* they are interested in stability, but still pursue practices that are destabilising. Through this behaviour, radical uncertainty emerges which make planning and the minimisation of risk impossible.

Angus Armstrong suggested that there was a bubble in financial regulation, partly shaped by the intellectual climate at the time before the crisis. The modelling techniques of DSGE used at the time did not typically have a role for finance. The setup of these models also shaped how we thought about certain issues in our institutions. For example, there was seldom a conversation about wealth effects, as in these models with infinitely lived agents there are no wealth effects. A second point was that information asymmetries between borrowers and lenders mean we are necessarily in a world of second best. The issue of whether increased competition in a second best world would lead to a social improvement is unknown. Thirdly, economic models usually describe banking crises as the result of random shocks or “sunspots.” They generally ignore the build-up of fragilities and fail to address the fundamental cause of these crises. Fourth, there is no good theory for private debt in mainstream macroeconomic models.

The discussion was then opened up to the floor. Tim’s point about the distinction between economics and finance was suggested to be analogous to an idea in common-value auctions, where what one person is willing to bid is closely related to their beliefs about what other people are willing to bid. Tim followed up by saying his point related more to the creation of markets, and that this is dependent on whether there is radical uncertainty about prices. The difference between interest and usury was made by saying the rate of interest was a social construct, determined by what people think it should be. It was also said that a high rate of interest does not deter those with the lowest means from borrowing, and so a very high interest rate can be socially damaging and result in an excessive accumulation of debt.

Reference was made to Hyman Minsky’s work about finance as a destabilising force, and that this work has not gained much attention from the mainstream, even after the crisis. A further point was made asking to what extent, or under what conditions, is finance a destabilising force? Put another way, can finance be a stabilising force? Information asymmetry is one argument for destabilisation, but radical uncertainty takes it one step further as perhaps nobody has knowledge, or nobody knows they have knowledge. It was mentioned that markets seem to be particularly poor at intertemporal risk allocation.

An influential narrative introduced by Chicago economists was the efficient market hypothesis. But the word “efficiency” is used differently by economists compared to its meaning in finance. In finance, it is often used to simply say, it is hard to make money in markets. Whereas in economics, “efficiency” refers to not being able to make one person better off without making another person worse off. Under some restrictive assumptions you can show the two are aligned. This was part of the justification for deregulation and massive, unrestricted international capital flows. One of these assumptions is that people who are not yet born are modelled as present in markets, which is clearly not possible. If you remove this assumption then almost all of the implications that come out of efficient markets are also removed.

A fundamental problem in economics today comes from discussing finance as though it were a goods market. This is no doubt shaped by our use of national accounts. Goods markets bear little similarity to financial markets. Saving in an accounting residual; it does not make sense to describe finance in terms of saving goods as the creation of money and credit has almost nothing to do with that. Would financial institutions be destabilising if they could not create money? The prevailing economic models

do not describe a situation where banks and other institutions can actually create money, but this is how the world really is.

We need to reconsider our understanding of financial institutions in macro models. What banks actually do has changed dramatically over the past thirty years. For example, banks now make 97% of their loans to other financial institutions, and only 3% to non-financial institutions. This is significantly different to how banking was in the past. The institutional and regulatory changes that have allowed this to happen need to be examined and we need to ask if we want to reverse this. Economists typically think of money as savings, whereas money can be created by financial institutions separately from real flows. This suggests a very considerable departure from financial and macro models.

Finance and Monetary Policy

Andrew Mullineux agreed with previous remarks that money is a social construct, and noted around 90% of 'money' (defined by the willingness of the public to accept it) is created by banks. What is meant by a bank has evolved over time. The emergence of shadow banking and technology also changes what is meant by a bank. Banking will continue, but money creators may not be banks as we think of them today. For example, the recent emergence of cryptocurrencies such as bitcoin could change how we view money creation in the future. Asset managers also offer accounts that resemble money.

The transmission mechanisms of monetary policy are not fully understood: there are clearly wealth effects through monetary policy, e.g. quantitative easing, but these channels are not well described. This challenges our fundamental understanding of how finance works. We need to better describe financial systems. Sectoral and agent based modelling may prove to be very useful. We also need to be able to explain credit cycles and how they relate to business and political cycles. Many of the monetary models of the past appear to no longer hold: such as the quantity theory of money which has seen an extraordinary fall in velocity.

The discussion was then opened up to the floor. In regards to crypto currencies, a criticism of money makers of the future not being the same as the money creators today was made. This is a bias in economics that markets ultimately determine everything, but money is a social construct determined by the public sector, and as long as central banks are supported by the regulator, they will determine what money is. It is not markets that determine what money is, but rather policy e.g. legal tender and paying taxes. The government can define what fiat money is, but other institutions can create liquidity. We may get to the point of competing currencies fairly soon, where crypto currencies behave and become usable as money, or even central banks might create digital currencies to compete. This reduces the extent of government control.

However, one view was that as soon as government says that cryptocurrencies is not a competitor they want, they will kill the money. This could be easily done by the regulator simply deciding to not accept it for tax purposes or that it cannot be accepted as a medium of exchange. Another view is that criminals also prepared to lose some value in its usage for anonymity. Other competing nation states (outside the core of the international monetary system) may encourage alternative forms of cryptocurrency. The sustainability of bitcoin was challenged by pointing out if bitcoin usage continues at current trends then its usage will consume the world's energy supply by 2020.

Social construction is important to this discussion. People treat money as money until they no longer do. This was central to the build-up of the financial crisis. While people in the financial system at the time believed something to be true (in relation to risks and prices of assets), then it effectively was true in terms of how people were behaving. If you take this confirmative view of things then things are fundamentally unstable as beliefs can change substantially and without warning. This relates to bitcoin in the sense that as long as people think it has a use for something, then it will be used for it. This also relates to the idea of liquidity as you either have liquidity or you do not: there is no such thing as a bit of liquidity. As soon as people question liquidity then it is gone. Liquidity is merely a narrative. For example, afterward changes in rates do not directly affect aggregate demand, but indirectly through money markets. These markets are prone to disruption. During the crisis, the problem was that money markets had broken down.

The point of monetary policy is to provide full employment without inflation. You then need to consider to what extent the financial sector influences that task. In the effort of rebuilding macroeconomics, it is not just about finance, but about how macroeconomic theory defines the role of finance. Banks shifted towards mortgage lending exactly at the same time central bank independence started in the late 1980s. Independence has essentially seen the separation of fiscal policy, which is influenced by politics, and monetary policy. This has led to a situation where banks lend to where they want, and the central bank will just control rates and they are not interested in where the money is going *per se*. When rates were controlled by the government, was the central bank more interested in where the money was going?

An important message from Keynes' *General Theory* was that animal spirits are fundamentals. If you use collateral then as long as the underlying value of the asset is believed to be stable then it is fine. But when beliefs change, this collapses and the credit before is no longer sustainable. The two times when the real economy really broke down was in 1933 and in 2008/9 when rates came down to zero. These episodes prevented the management of recessions as interest rates could not go any lower. However, an alternative view is that even with near-zero interest rates, borrowing rates had not fallen at all, so it was the transmission mechanism that had obstructed the operation of monetary policy and not the lower bound.

There is an emerging field of macro-finance, although this is primarily a standard DSGE way of thinking about the world. This is because it essentially describes financial institutions as warehouses that buy and sell goods. Real world financial institutions do not do this. We need a model of proper macro-finance by including the money creation side to banks: we need genuinely monetary models if we are going to have genuine monetary policy.

Private money is much more difficult to use for exchange, as it needs much more information for why they should trust in it versus a stable government with stable institutions. You can choose between two extremes: (a) what we have now with lots of private money and massive rule books on how to manage it; or, (b) public money with far fewer rules. Perhaps we ought to think about the supply of money and credit in a mixed ownership financial sector. All these rules such as the Basel banking regulations are because we don't have public money.

Open Economy Finance

Alan Taylor suggested that spill-overs is a natural starting point for considering finance in an international context. How does this relate to the high level of financialisation we see today? If you plot out the size of the domestic financial sector in terms of, say, bank balance sheets, you get a 'hockey-stick' shaped graph, with the highest levels in the past decade. Similarly, the value of international balance sheets and cross-border correlations between otherwise separate markets are also rising, with the correlations in GDP movements across countries increasing, and this is also true with financial variables such as in equity markets. An important area of research is to figure out if the correlations in the real economy are driving financial integration, or if the increased exposure to international spill-overs through an integrated financial system is leading to the correlations in the real economy.

Alan is particularly interested in the role of credit and debt in generating those leakages, whether bank credit or other forms of debt contracts; corporate and sovereign debt have become a very important part of the share in international portfolios. A lot of credit creation around the crisis was between Euro-zone countries. A possible area of future research might be in investigating intra-Euro zone financial flows, as these would not have been reflected in Euro-zone current account imbalances. Rich data sets on individual banks, loans and debts would be useful here. Another important consideration is how policy relates to international finance. Does policy contribute towards the spill-over phenomena? Or could policy be calibrated to mitigate them if they are thought to be a problem? The nature of the spill-overs is likely going to depend on the policy configuration, e.g. fixed versus floating exchange rates. Early evidence suggests that the spill-overs are more between contracts with a managed exchange rate. New research questions whether we have really shifted from a Mundellian 'trilemma' to a new 'dilemma.' On the policy side of this, we then get into the current debate about the use and effectiveness of capital controls.

Anton Korinek noted that the financial system delivers the benefits that it is designed for, but questions whether the design of the system is one that society at large actually benefits from. The financial system we have may have been designed for the benefit of financial 'insiders' who reap large profits. But this may not be the design the broader society appreciates, or would benefit from the most. The crisis demonstrated that globally open capital markets give rise to the possibility of more efficient rent extraction opportunities. For example, having access to international capital markets allows you to take larger positions with a risk of losses and, as a result, extract more resources from financial safety nets or less informed savers in other countries.

Are spill-overs desirable or Pareto efficient? In practice, there are two big problems with the idea of leaving international markets alone. First, Pareto efficiency does not imply everybody is better off following a shock, as there may be redistribution consequences that are painful to some, such as with devaluations. Second, imperfect markets mean small movements in relative prices may not have large consequences, but large movements in relative prices are almost always detrimental. Anton's work shows that large depreciations are generally contractionary. In the presence of contractionary depreciations, the first welfare theorem doesn't hold and therefore free capital flows are not desirable. The regulatory environment is becoming more open to the idea of capital flow regulation. If it is the case that capital flows are destabilising, then it would be best to regulate the flows themselves and not the domestic financial system.

The discussion was then opened up to the floor. An issue of macroeconomics in international finance relates to using non-financial models to try and address financial questions. Savings are essentially stuck wherever they arrive for investments. Gross capital flows are what matters for which there is always a net zero, as an equivalent flow comes back in the opposite direction. Using savings and net capital flows misses the picture for stability. In the short-run, every flow is a gross flow with an off-setting aspect. For example, the current account cannot move in a small interval of time. In the medium-run (months), the exchange rate pressures created by the flow generally leads to a current account imbalance. If you look to the most severe crises in the past thirty years then you can see there always was a significant current account deficit as well.

Is the issue with capital flows really an issue of the flows themselves, or rather that everyone starts doing the same thing i.e. beliefs become so heavily correlated (as seen by the high correlations in cross-country variables)? By imposing capital controls, are you merely you addressing the issue of people following the crowd?

The City of London (and hence the UK) was in the “lucky” position that it could extract rents from various areas of the world economy, particularly the Euro-zone, by being the financial centre for Europe. From the position of the UK in particular, the locus of finance may change in light of Brexit. Being a small open economy can have significant negative consequences as you are more vulnerable to reversals in capital flows.

In the Brexit debate we seem to take for granted that the UK will necessarily have free capital flows post-Brexit.

If there are animal spirits in financial markets, what should we do about them? There are many different theories on how these animal spirits would behave, and one may work for some time, but then breaks down. This is because things are so unpredictable, not one theory alone can do justice in explaining observed behaviour. What can you do about it in the context of open economies? It is possible animal spirits can do much more damage with open capital flows.

Finance and Institutions

Franklin Allen began by explaining the great diversity in financial systems among countries with similar levels of development. Germany is particularly interesting in this context as it has come through the crisis fairly well compared to other countries. What allowed Germany to do so well in comparison to other developed countries? Their financial institutions could be part of the answer. Germany has a dramatically different institutional structure versus other developed economies. Its banking system is different with one-third commercial banks, one-third cooperatives, and one-third publically owned. Public banks are typically regarded as inefficient, but in crises the diversity was particularly useful.

Insurance companies play a large role in Germany: they don't have a particular structure of profit maximisation and they are more autonomous institutions which are social welfare maximising. There are a whole set of institutional issues around banking and insurance that make it different to other countries. Another important difference in Germany is their corporate governance structure. Some large firms have 50% of the supervisory board elected by the workers. This creates very different kinds of incentives to what we have in other parts of the world. Their pension system is also a lot different and based on pay as you go. One kind of risk sharing that is highly important is intertemporal

smoothing. Anglo-Saxon based market economies do not do this very well e.g. pension systems: the UK does not share intergenerational risk very well.

One of the most important triggers of the crisis was the bubble in property prices in the UK, Spain, or Ireland and in many other parts of Europe. Many countries in Europe had significant run up in property prices then falls and this affected their financial systems very badly. Germany was not one of them. Germany's property prices have some regional variation, but on the whole it is pretty flat compared to other European countries. This is one of the reasons they done so well, as they avoided all of those problems. Germany poses many interesting questions about institutional structures and macroeconomics. They done relatively very well compared to other developed countries, it wasn't that they weren't exposed before the crisis – they were – but there was something about their institutions that allowed them to come through it fairly well.

The discussion was then opened up to the floor. Looking at the Anglo-American model, you would say we have a complex financial ecosystem, not just comprised of intermediaries. The institutional structure goes well beyond what is represented in very simple macro models. Post-crisis, we have seen numerous attempts to build institutions into these models. Although, the ways of doing this so far makes it look as though you have finance in your model, but what you actually have done is introduce rigidities. They don't take seriously the institutional behaviours of the financial system. The complexity of the financial intuitional framework escapes easy analytical explanation.

Government have long accepted the City of London extracts rents so that they could introduce enormous taxes on them. We haven't quite weaned ourselves off that model. The two largest tax payers in the UK are banks. The change away from this model of low debt levels and low levels of financilisation, would incur large adjustment costs, and also a political adjustment cost.

Institutions are endogenous, and if you think about regulation as we have after the crisis as adding new constraints or laws and regulations on existing financial institutions without getting to the root cause of the financial crisis, you will be blindsided by new institutions that circumvent new regulations. What is the underlying issue? Perhaps incomplete participation in financial markets, as you may be able to make trades today that are beneficial, but are at the cost of other people in the future – one of the main failings of the financial market today is the intertemporal aspect.

When German banks make SME loans, they want much more information about mortgages or car loans etc., and they don't need higher collateral as they have the extra information. This is where digital banking comes into it, as the better you use information, the better you can lend.

Banking in Germany faired fairly well because public banks always have the backing of the tax authority which provides them with a greater degree of stability. One advantage of public banks is that they gain local information through knowing the people they lend to socially which may help with stability. Institutional differences in terms of corporate governance may lead to different macroeconomic outcomes. A company that is only interested in share prices and maximising profits is likely to lay off workers to reduce costs in times of crisis, and then there are the negative multipliers that result. If the corporate governance structure is such that the advisory board is made up of workers, then they are likely to significantly change their behaviours in difficult times.

However, the situation with Germany is not perfect and does have its relative deficiencies. For example, if you look at the USA's top companies they are mostly ones that did not exist 50 years ago (e.g. Apple, Microsoft, Facebook, Google, Netflix) and were funded through venture capital and grew very rapidly. On the other hand, if you look at Germany, their largest companies tend to be much older. Germany does not have as supportive venture capital institutions for fast growth as, say, the USA does. The venture capital that Germany does have tends to be organised through the government, but is not done nearly as well as in other countries, and is an interesting failure of their system. Therefore, the German financial institutional structure is not perfect, but it has very different kinds of macroeconomic consequences in times of crisis.

How do we change things? Many people in policy institutions are against the idea of public banks today. Whilst they are not perfect, if they are setup to where they compete against private banks then this could help reduce their inefficiencies, whilst at the same time, improve the overall stability in the financial system. The institutional setup of the financial system is critically related to the performance of the financial system.

Introducers

Dr Franklin Allen is a Professor of Finance and Economics and Executive Director of the Brevan Howard Centre at Imperial College London.

Dr Timothy Johnson is an Associate Professor in Actuarial Mathematics and Statistics at Heriot Watt University.

Dr Anton Korinek is an Assistant Professor in Economics at Johns Hopkins University.

Dr Stefan Leins is a Senior Lecturer for the Institute for Social Anthropology and Empirical Cultural Studies at University of Zurich.

Dr Andrew Mullineux is a Professor of Financial Economics and Head of the Department of Finance in Birmingham Business School.

Dr Alan Taylor is a Professor in Economics at University of California, Davis.