



# Bulletin

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# Interview with Atif Mian, Princeton University

Özer Karagedikli and Anella Munro



Atif Mian is the John H. Laporte Jr. Class of 1967 Professor of Economics, Public Policy and Finance, and Director of the Julis-Rabinowitz Center for Public Policy and Finance at the Woodrow Wilson School of Public and International Affairs, at Princeton University.

Professor Mian's research has provided insight into the role of household debt and credit supply, both before and after the 2008 crisis. His book with Amir Sufi (University of Chicago), *House of Debt* (2014), explores the role of household debt in precipitating the crisis, its resolution and what needs to be done.

Professor Mian visited the Reserve Bank in Wellington in December 2017. Özer Karagedikli and Anella Munro, from the Economics Department of the Reserve Bank, interviewed him.

*Atif Mian at the Reserve Bank of New Zealand Museum in front of the MONIAC machine built by AWH Phillips.*



## Özer Karagedikli (ÖK)

*Welcome to the Reserve Bank of New Zealand. You started out as a development economist, I understand. What made you switch to finance and housing?*

### Atif Mian

Thank you very much for having me at the Reserve Bank of New Zealand. It's wonderful to be here in Wellington.

I went to MIT (the Massachusetts Institute of Technology) from Pakistan, and as most who go to MIT, I wanted to study engineering. I started doing electrical engineering and computer science, but one of the nice things about education in the US is that it is broad. They make you take other courses, and I took some courses in economics. What drew me to economics was that the questions were more interesting in some sense. They were about society. They were about why some countries grow and others don't, and things like that. And it was mathematical, something that I liked and had a predisposition for. So, I decided to move into economics.

As you can imagine for someone who has come from Pakistan, the question of development is in your head because you see so much poverty around you. A natural question is, can you do something about it? So that was my initial segue into economics – to think more about development, and I started working on that area in the PhD programme at MIT. My advisor was Abhijit Banerjee, who is extremely famous in the area of development. It just happened to be the case that, within development, I started working on banking and the question of finance. That's what my dissertation was on. I looked at the question of privatisation of the financial sector in Pakistan. Actually, because it was

related to finance, but I was by no means interested in finance at that time, the Finance Department of Chicago Booth School of Business was interested in hiring me. So there I was, at one of the best finance departments in the world, having never really studied finance, as a field. But that exposed me to finance, and I always had macro-ish interests, in terms of the nature of questions, and I really took to it. It took a little bit of time to change focus from traditional development towards finance/macro. My early work was on emerging markets, the question of how financial market frictions in emerging countries impact the real economy, looking at financial crises and their immediate impact in an emerging economy context.

As I was working on that in the mid-2000s, we were in the midst of a big credit boom in the US, so that caught my attention. I was interested in figuring out why it was happening and started looking into consumer credit and mortgage markets. Then the financial crisis happened, and the rest is obvious.

## ÖK

*There are different views on the origins of the crisis. In your book, one of the things that comes out is the role of highly leveraged households that were ill-equipped to service their debt. Why is household debt so important?*

### Atif Mian

Let me take a step back and question the question, so to speak. Why should we be interested in crises? The key question is not so much crises, but why do financial markets, at times, behave in a way that results in a loss of employment, a loss of jobs, or mis-allocation of resources. When you pose the question that way, what you realise is

that, it is not necessary for a crisis to take place, for financial disruptions to be important for credit markets, to be important for the real economy. Some of the steps that have been taken on the policy side by various countries, suggest that we may not see crises of the sort that we have seen in the past. For example, now there is willingness to ‘do whatever it takes’, as the famous line says, to save the banking sector. If you’re willing to do that, at some level, you are going to prevent big banking crises of the sort that we have seen in the past. But that does not mean that financial shocks are not going to have the sort of negative impact on the macro-economy that we have seen in the past.

Now that we have made that clarification, let’s come back to this question of crises and think about the real economy and why disruption in the financial markets have, historically, proven to be costly from a real economy perspective, in terms of loss of jobs. Let me first define what I would consider as a traditional and somewhat dominant view of these kinds of crises. The traditional, dominant view, if I were to simplify it, suggests that there are times, when some unforeseen event happens and there is a loss to the banking sector. As a result, bank capital – the net worth of banks – shrinks significantly. That has amplifying effects on the real economy. When bank capital shrinks, the bank cuts back on lending, that means that firms have difficulty borrowing, which means they have difficulty extending working capital, they have difficulty extending credit for investment for capital goods and so on. That leads to a lower level of investment, a lower level of working capital, a lower level of sales and employment. At the heart of this story, are some frictions, namely that the banking sector, when it faces these capital losses, cannot attract new equity capital very quickly. It passes on those losses, so to speak, to borrowing firms and that depresses the overall economy. There has been a lot of work that shows that this story is relevant. I myself have some work that shows that it is relevant. There is a big amount of literature on the bank lending channel. This was a mechanism

highlighted by Bernanke, Gertler and Gilchrist (1999), among others. I do not want to suggest this story is not relevant. It clearly is. But, I think this story is incomplete.

It is incomplete in a couple of important ways. The first way it is incomplete is that the narrative that I just gave takes this kind of shock as coming from the outside, so to speak. This shock tends to be a negative shock to the credit markets, to the financial markets, that precipitates the losses in the banking sector and the real economy follows. When you look at the data – this is some of the recent work that I have done with Amir Sufi and Emil Verner (2017), but there is other work as well – it suggests that, if we want to understand these credit-driven slowdowns in the macro-economy, the predictor of these slowdowns is not necessarily the fall in credit that immediately precedes these slowdowns. It is actually the opposite. If we move further back in time, it is the expansion in credit, which we refer to as an expansion in credit supply that tends to predict, with a lag of three to five years, these kinds of credit crunch moments, if you like, that precipitate these crises. The slowdowns in the real economy that we see in the aftermath of these credit collapses are not independent events. They tend to be associated with this preceding positive shock to credit expansion, what I’m calling an expansion in credit supply. A positive expansion in credit supply tends to be associated with this boom and bust cycle in real activity. That is observation number one. It is different and newer relative to this traditional way of thinking about finance and macro.

*“It is the expansion in credit... that tends to predict, with a lag of three to five years, these kinds of credit crunch moments.”*

The second dimension is more directly related to the question of household debt and household leverage. When you go back to the data, over historical episodes of these boom-bust cycles driven by this

expansion in credit, and you parse credit in terms of what it is being used for, the more important component of credit in terms of explaining these boom-bust cycles turns out not to be the part of credit that goes to firms for the purpose of investment. Instead, it is the component of credit that is going to the household side, largely for financing some kind of demand, typically some kind of durable good, housing being the obvious one, but it could be cars or home equity that are being then used to finance other forms of consumption. That is a very important departure from

*'...this channel works through households. And that is why household credit turns out to be important.'*

the traditional story that focuses on financial shocks affecting the real economy through the aggregate supply side of the economy. While financial shocks are important, quantitatively in the data, a more important connection between finance and macro is through the aggregate demand side. The initial credit supply expansion pushes aggregate demand outwards and then it reverts back. Then it pushes aggregate demand downwards as

a negative aggregate demand shock. And this channel works through households. And that is why household credit turns out to be important.

### **Anella Munro (AM)**

*Let's talk a bit more about this aggregate supply shock. It takes two to tango. It takes a borrower and a lender. What is it about household borrowers' and banks' assessment of credit that ends up badly? Is there asymmetric information? Are households not understanding the credit contract?*

### **Atif Mian**

The question is, how can we generate these boom-bust cycles in an otherwise rational environment? There is some nice theoretical work, recently, that suggests that you can generate boom-bust cycles. What that work points to is that there are some potential externalities,<sup>1</sup> aggregate demand externalities in particular, that can generate these boom-bust cycles, even in an otherwise rational environment.

Let me just quickly give you the intuition for what this channel is. Imagine there is a temporary, for a few years, relaxation in credit standards, or the price of risk or the price of credit, perhaps. Think of that as a collapse in spreads.<sup>2</sup> The question is how much we will choose to borrow, knowing that the shock is temporary. What research suggests is that, even though we know the shock is temporary, households, as a collective, tend to over-borrow. The reason that we over-borrow is the demand externality that I talked about. When I, as an individual, look at those spreads today, knowing full well that credit will expand and lead to a future recession, I take everyone else's actions as given. Since my actions will not affect whether we have a recession tomorrow or not, I go and over-borrow anyway. I don't account for how my individual action affects other people's borrowing.

If you deviate from the assumption of rationality, it becomes even easier to generate these boom-bust cycles, for example, if you believe that expectations formation is not fully rational. An example is a recent paper that suggests that if you believe in diagnostic expectations (Bordalo *et al* 2017), a version of extrapolative expectations, then you can naturally

1 Footnotes to this interview are editorial additions. An externality is a consequence of one person's actions on other parties that is not reflected in market pricing, such as the negative effects of pollution, if not taxed, or the beneficial effects of honey bees pollinating others' crops, if not compensated.

2 Interest rate spreads between risky and safe assets.

have these boom-bust cycles of the kind I described. There is earlier work on hyperbolic discounting,<sup>3</sup> myopic beliefs, that would go in the same direction of generating these boom-bust cycles. The bottom line here is that, for both of these aggregate-demand externality reasons and behavioural reasons, one can imagine these boom-bust cycles. In the data, as I mentioned, these boom-bust cycles are more pronounced for household credit as opposed to firm credit. That suggests that behavioural reasons might be relevant here. The average household making borrowing decisions is financially less sophisticated than the average chief financial officer of a firm making financial decisions, for natural reasons. That is one reason why the household sector may be more relevant in generating these boom-bust cycles.

There is another institutional reason as well that I would like to highlight, because I think it is important in practice. That has to do with our choice, as a society, of the kind of frameworks that we have put in place for dealing with restructuring of debt on the firm side versus the household side. Typically, we have much better mechanisms for dealing with excess leverage on the firm side, or even on the bank side, as opposed to on the household or the individual side. It is much easier to restructure bad debt on the firm or corporate side as opposed to restructuring bad debt on the household side. That further makes household debt more dangerous, from a macro-prudential perspective, and more relevant.

## AM

*Before the crisis, the IMF was talking about the shift in risk-bearing from the government and corporate levels to the household level. For example, pensions have shifted from defined benefit to defined*

<sup>3</sup> With hyperbolic discounting, people have a tendency to focus too much on the near future, for example, to choose a smaller reward today over a larger reward tomorrow, but are indifferent between payoffs after a year compared to a year plus a day (for example, see Ainslie 1991).

*contribution, and the employment contract has shifted from lifetime employment towards “the gig economy”. Are households, structurally, less able to bear risk in the world we are moving to?*

## Atif Mian

That is a very insightful question. From a purely theoretical perspective, the answer should be kind of obvious. But when you look at what direction we have gone institutionally, it is the opposite of what theory suggests should have been the case.

First, let us think of this question from a theoretical perspective.

Any economy, in the aggregate, faces some risks that you cannot do anything about. There is some fundamental risk. For example, for farmers, sometimes weather is good; sometimes weather is bad. So you are exposed to that risk as it will always be the case. As a society, the question is, what is the most efficient way of sharing that uninsurable risk among the different agents of the economy? Conceptually, as we divide up this aggregate uninsurable risk, those who have the most means to absorb risk should bear more of this risk. Governments, for example, have some inherent advantages in bearing risk.

*‘Any economy, in the aggregate, faces some risks that you cannot do anything about.’*

*As a society, the question is, what is the most efficient way of sharing that uninsurable risk among the different agents of the economy?*

Government bonds provide a unique mechanism for shifting risk across generations or for dealing with issues of liquidity, as Peter Diamond’s work has illustrated very nicely, among others. So there are some risks that governments are better suited

to holding. On the household side, wealthier households have more of a cushion to absorb certain kinds of shocks, compared to households that don't have a buffer stock of wealth, so to speak. Naturally, stronger

*'Naturally, stronger balance sheets should absorb more of the risk.'*

balance sheets should absorb more of this risk.

Now, let us come to the institutional features of how we share risk, in practice. In most debt contracts,

risk sharing is done in a way that is not in line with what first principles suggest. In particular, segments of the population who have the least capacity to absorb risk are, one way or another, made to absorb a substantial share of these aggregate fluctuations in risk. That leads to problems.

ÖK

*In your book, you talk about the importance of debt contracts ...*

**Atif Mian**

This is related to the financial architecture of markets, which, in turn, depends on which markets the government and regulators promote. Some kinds of contracts are given legally better cover, and what kind of contracts become dominant ones. For example, the 30-year mortgage exists in the US because that is the kind of contract the government pushed there, but not in other countries. Institutional design, for example, tax laws, tax deductibility, capital regulations, and the establishment of

Fannie and Freddie<sup>4</sup> in the US, all tilt financial contracting in a particular direction, and have ramifications from the perspective of risk sharing.

Now, if you were to design a financial contract or a financial architecture from a risk sharing perspective, you would want individuals who have the smallest marginal propensity to consume<sup>5</sup> in response to those negative macro-shocks to bear the risk. They are not going to translate those negative shocks into demand side fluctuations as much as someone with a larger marginal propensity to consume would do, to absorb the same level of shock.

A borrower in a debt contract, by construction, is typically someone who does not have the balance sheet strength [wealth or liquidity] to do what they want to do, in terms of consumption or investment, with their own resources. They need to borrow from someone who has more slack in their balance sheet to lend to them. That is the way it should be. However, the way a typical non-contingent debt contract is written down, the individual borrowing is also forced to bear the downside aggregate risk.<sup>6</sup> There is no contingency in a typical debt contract that says that, in the event of a macro negative shock, the risk will be shared differently. The key point is that the absence of that state contingency turns out to really hurt the macro-economy, in the event of a macro shock. When the contingency is based on a macro event, we don't have the usual

4 Fannie Mae (the Federal National Mortgage Association) and Freddie Mac (the Federal Home Loan Mortgage Corporation) are government-sponsored agencies in the US that buy mortgages in the secondary market, pool them, and sell the pools as mortgage-backed securities. The development of a secondary market improves the liquidity of mortgages for lenders and expands the funding available for home mortgages.

5 The marginal propensity to consume is the amount by which consumption increases in response to a one dollar increase in disposable income.

6 Idiosyncratic risk is specific to an individual borrower. Because there are many different individuals, idiosyncratic risk can be pooled with others' reducing the down-side consequences of a bad outcome. (Fire insurance for houses is a classic example.) In contrast, aggregate, or systematic, risk is uncertainty affecting the entire market, which cannot be diversified away, and is not linked to an individual borrower's behaviour.

moral hazard concern.<sup>7</sup> The usual moral hazard issue that makes a debt contract optimal, is concerned that the borrower might not take care of the house, and walk away from the contract. If the contingency is only based on macro events, then there is no moral hazard because an individual cannot cause a recession by themselves. Introducing that type of state contingency in the contractual space is really useful from a macro-prudential point of view, for all the reasons we have already talked about such as the aggregate-demand externality, behavioural boom and bust cycles and so on.

How you introduce state contingency into a debt contract is a very interesting question. There are differences in opinion as to what is the best way to do that. A bankruptcy regime is one way to introduce state contingency. There are other ways to do so. Some actual contracts have been written based on those ideas. We had one specific suggestion in the book that you mentioned, but again that suggestion was simply to put an idea out there. The more important idea is that introducing state contingency is important for dealing with this macro-prudential issue.

ÖK

*In your book, you mention that this state-contingency argument goes all the way back to the Code of Hammurabi (Babylon, 1700s BC). In the event of an aggregate weather event, over which farmers had no control, debt was to be forgiven.*

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<sup>7</sup> Moral hazard occurs when an individual engages in riskier behaviour because the costs of the risk taking are borne by others. The usual moral hazard concern with debt is that the borrower may act less responsibly if there is a prospect of debt relief in the event of future repayment problems.

**Atif Mian**

Yes, the Code of Hammurabi is an important historical example. There are more modern versions of that as well. The state-contingent risk can be dealt with by putting it in the contract, or in other ways. For example, countries that have a flexible exchange rate, with flexible monetary policy, have an escape valve for dealing with some of this state-contingent risk. For example, as long as the debt was borrowed in their own currency, those countries can devalue the real debt burden by devaluing the currency. At least for the sector that is exporting, it can reduce the effective burden of debt.

This is a classic example that has proven to be extremely important historically. When countries were pegged to gold, the absence of such adjustment mechanisms became what was referred to as “golden fetters” by Barry Eichengreen (1994). It wasn’t until those countries went off the Gold Standard that they started the path to recovery. That is the classical example of how restrictive debt can be if you don’t have state-contingent ways to reduce the debt burden. Irving Fisher, in the 1930s, called this ‘debt deflation’ and referred to it as the most important problem that was holding the macro-economy back. He argued for a way out of it by sharing aggregate risk more efficiently, rather than pushing all adjustment on the debtor.

ÖK

*A suggestion that you have in your book is indexation of mortgage contracts to local house prices. How does that work, in practice?*

## Atif Mian

Indexation solves the risk-sharing problem. It is not the only way that a contract can be written that serves to make it state contingent. It is an idea that has been tried in practice in the US. There are some start-ups that are introducing mortgages with that kind of risk-sharing feature. There are other ways to do that as well. There is a company that is even bolder than what we were suggesting. It provides mortgages with equity shares in the home. There are innovative products that are, at least, showing the feasibility of these contracts that spread risk more effectively.

*‘There are innovative products that are, at least, showing the feasibility of these contracts that spread risk more effectively.’*

While the argument is that regulation should incentivise agents to write these kind of contracts, the way our current regulations are structured can actually make it more difficult. For example, if I issue a standard debt contract, the interest paid on that contract is tax-deductible. If I issue the same mortgage, but it has state contingency, like the indexing that I

talked about, it would not qualify any more, under IRS (US Internal Revenue Service) rules, as tax-deductible.

*‘The objective should be that we do not want the real economy to suffer unnecessarily from financial shocks.’*

So we are inherently subsidising a contract that has a bad feature from a risk-sharing perspective, but not a contract that would actually be useful for society. That is just one example. It is not the only one. The

Basel capital regulations promote issuance of contracts that don't have contingent features. That, I think, is driven by a fundamental mistake that

some regulators make: they think of prudential regulation as driven by the objective of banking system stability. I think that is a fundamentally wrong starting point. The objective should be that we do not want the real economy to suffer unnecessarily from financial shocks. Just saving the banks is by no means a sufficient condition to serve the real economy goal of macro-prudential policy. We don't see as much of this state-contingent contracting as we really should.

## ÖK

*In terms of adjustment, you have argued that policy should have prevented widespread foreclosures. There were 4.5 million foreclosures in the US. Would that have been a different prescription for the post-crisis policy response?*

## Atif Mian

Coming to the more specific details of the 2008 crisis in the US, one of the big mistakes in the response to the crisis was allowing widespread foreclosures. It makes no sense. There is no way any market could absorb that level of forced sales without having a huge further destabilising effect on house prices. That further lowered the net wealth of households who otherwise would not have been affected as much. It snowballed the initial shock into a bigger and wider shock.

There has now been a lot of very good empirical work that shows that this channel was quantitatively very important in worsening the impact of the 2008-2009 recession. It is also a classical example of how individual agents, banks in this case, did not internalise this negative

fire-sale externality<sup>8</sup> that the entire economy suffered through, in making their individual decision whether to foreclose on a house or not. Yes, households had over-borrowed, had over extended. Certain households needed to be foreclosed upon, but there was this negative aggregate externality through fire sales that needed to be chopped off at that point in time, by allowing restructuring and reducing the foreclosures. That, in turn, reflects failure of the policy side. That was a key mistake, especially at a time when banks needed a lot of help themselves. So policymakers did have leverage over the banks, in a way that they don't have in normal times. But it wasn't used effectively to prevent this very important issue of foreclosures. That was one of the important mistakes of the 2008 crisis.

## AM

*How would that work in practice? Do you mean buying residential mortgage-backed securities (RMBS) in the market or providing liquidity against RMBS collateral?*

## Atif Mian

That kind of help was provided by the Fed, and in very generous ways. That wasn't the issue. The issue really was inefficiency in terms of the decision of the banks themselves. Banks took the liquidity from the central bank, but they did not pass it on efficiently to households. Here again, there is an externality – the bank does not internalise the negative effects of its foreclosure decision on the market if it does not hold a sufficiently high fraction of the overall market. While banks took full advantage of liquidity from the central bank, they did not internalise the

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8 In this context, the fire-sale externality was the negative feedback associated with foreclosures that put additional houses on the market at already depressed prices. The additional listings put further downward pressure on prices, reducing other borrowers' housing collateral values, leading to further foreclosures, and so on.

fire-sale externality that they were imposing on the household and the whole housing market. That is why I referred to central banks having leverage over the banks, to ensure that the liquidity provided to the banks was passed through to the household.

Mortgages needed to be restructured. There are different ways to do that. You can extend maturities. You can do automatic refinancing, at the lower interest rates. Principal can be written down. Some households were grossly under water,<sup>9</sup> through no fault of their own. Because this was a macro event, debt restructuring could be done in ways that would prevent moral hazard to a reasonable extent. So there were ways to restructure debt, but it had to be pushed to the household level through the leverage that policy makers had over banks. The key notion is that it didn't happen by itself. Those ideas are very well crafted, conceptually, in terms of fire-sale externalities that individual banks do not internalise, and that is where the design of policy becomes really important. We need to think through these issues, before these events happen, and be ready to implement policy to respond to these kinds of crises.

We have done fairly well in thinking through these issues, in terms of central bank design, in terms of providing liquidity to banks. That was a lesson learned through the Great Depression. What I am highlighting here is that similar issues exist at the level of the household. Given how important household debt has become, this is a more salient problem now than it was during the 1930s, 40s, 50s, 60s, 70s.... Now that we are here, those are more relevant issues that need to permeate down to the policy level.

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9 The value of the debt exceeded the value of the house.

It is important, for multiple reasons, that we do as much as we can to put things in place, *ex ante*, that automatically resolve these problems. This issue becomes a lot more difficult to deal with *ex-post*. First, from a pure efficiency perspective, we want these things to be priced, *ex-ante*. If this risk is to be absorbed by the lenders, for example, it is fair to set those expectations up front, so lenders price risk in. We can never be perfect, because that is the nature of incomplete contracts. There is always going to be something that is unforeseen. That is the nature of human life that we need to deal with some issues that come about, that cannot be contracted on *ex-ante*. But as much as possible, we should try to do these things in a way that they are addressed from an *ex-ante* perspective.

## AM

*After a decade, have we now recovered?*

## Atif Mian

The short answer is no. There is very clear evidence that we have not recovered. Let me try to at least highlight some of that. One way that we have not recovered is that some of the effects of the crisis are permanent. That is a difficult issue to prove statistically. However, the data does suggest that the global economy permanently deviated from the trend. There is also a lot of evidence now, across the advanced economies, that there is a slowdown in productivity growth. Not only is the level permanently down, but also the trend growth rate of productivity has slowed down relative to what it was before the crisis.

There are other very important distributional impacts of the crisis. The crisis had a disproportionate effect on people with small net worth, more likely to be laid off, and less skilled in some sense. Those people suffered a lot more. There is some work that suggests that this is the case and has had political ramifications. We see that in terms of the rise of populism or nationalism in the US, in Europe. Some of that is related to the effects of crisis: the distributional effects of the crisis, and our collective failure to respond to the crisis in a more equitable way. I think this crisis was really a watershed moment and its long-run effects continue to linger. Even though bank balance sheets are healthy again. The real economy impacts are wider and deeper.

*'I think this crisis was really a watershed moment and its long-run effects continue to linger. Even though bank balance sheets are healthy again. The real economy impacts are wider and deeper.'*

## ÖK

*You talked about where we are after the crisis. The last big crisis that we had was of course the Great Depression. Keynes questioned and challenged some tightly held views of our profession, for example that unemployment couldn't be involuntary. That is now widely accepted. From this crisis, has our profession let go of some tightly held views?*

## Atif Mian

Absolutely. I think that, there has been an important conceptual lesson from the 2008 crisis. Let me make two points. The first is that this question of risk sharing that we discussed earlier, that financial contracts have a built-in inefficiency, from a macro perspective, that really hurts

in specific states of the world. This observation, or insight, is certainly not new. Keynes very much emphasised that in some of his writings. He may have said it differently, but conceptually it was the same. I am particularly referring to his book *The Economic Consequences of the Peace*. He talks about leniency to be shown to Germany following World War I, not just for the sake of the Germans, but his brilliant insight was that this would be in the collective interests of Europe and the West, more generally. He argued against being caught in what he calls “paper entanglements”. What was he talking about? Germany was a very indebted country at the time. Basically, he was saying that, by the logic of paper contracts, people could argue for war reparations and getting money back from Germany. But his core point was that, by doing so, aggregate demand within Germany would collapse, which would have terrible consequences, not just for the German economy, but for demand in the rest of Europe. So forcing Germany to repay all of the war reparations in the debt contracts would be inefficient for everybody. He made, fundamentally, a macro point and it was brilliant, really. It solidifies the value of an economist, from a social perspective, and that was the brilliance of Keynes. [The Marshall Plan] really saved Europe in many ways following World War II. It was driven by this wonderful logic, and the fundamental idea that the collective good should be given primacy over whatever the individual nature of these contracts might be, in this case across countries, let alone across individuals within a country. So that is the first link to Keynes that I would like to make.

The other point I want to make, here, is that, just like Keynes brought in some fundamentally important new notions after the Great Depression, I think there is one very important lesson that comes out of the 2008 crisis that is new, in my view. That is the importance of this credit-driven household demand channel that I highlighted at the beginning. I think this channel is extremely important, and it is important to look into this more carefully, because it suggests, in my view, the deeper structural issues

in the economy that are driving high leverage and slow growth, and that led to the 2008 crisis. The key notion here is that for many decades, it appears to be the case that the global economy is demand-deficient in some way, and credit is being used to generate demand that would not exist without an increased flow of credit. That suggests that the economy is facing some kind of fundamental imbalance. This is an important issue to focus on going forward. We are trying to look at it, but it is a much broader question than can be understood by looking at just a few individuals. This credit-driven household demand channel is the lesson that comes out of the 2008 crisis and recession.

#### **AM**

*In a 2014 review, Larry Summers described your book, House of Debt, as likely the most important book of 2014, and possibly the most important book on the 2008 crisis. However, when discussing your policy proposals, he argued that, like the 2005 homeowners who were used to capital gains, you “are unable to resist doubling down by leveraging up” on one policy idea – mortgage relief to spur spending. Was that a fair criticism?*

#### **Atif Mian**

It isn't a question of fairness, it is a question of whether the argument is empirically relevant. I disagree with the conclusion that not more could have been done on the household side. The way Larry is phrasing it here is calling it mortgage relief in a broader sense and the details clearly matter. Post 2008, mortgage relief could have been done by writing down principal. That is one way. Another is lowering debt repayments, either by lengthening the term of the mortgage, or by automatically refinancing to the lower prevailing interest rate. I think, while writing down the principal may have been more difficult for various reasons, there are many ways

to give mortgage relief without writing down principal, if you are worried about losses going back to banks. Going back to the point I made earlier, to suggest that there is no way that policy could have been pushed further, to avoid the 4.5 million homes going into foreclosure, is, I think, just wrong. It made absolutely no sense from a macro-perspective, to allow that level of foreclosures to happen. There were ways that policy makers could have responded more aggressively, more forcefully, in how they dealt with the banks and what they could have done to prevent that from happening. There is absolutely no doubt, in my mind, given all of the empirical evidence that has come about – by many others, not just ourselves – that suggests that these foreclosures were extremely damaging. Because we are talking about liquidity issues at the household level, what is important is not just that you write down the value of the principal owed, from say 100 to 90. In these events, what matters is the cash flows available to repay debt. That is another lesson from the crisis. When we think about how to share risk, thinking about the liquidity, cash flow aspect is very important. Mortgage relief should have been pursued on these two dimensions: reducing foreclosures and reducing the debt service burden.

**AM**

*That raises an important question about fixed vs floating mortgages. If everybody was on a floating rate mortgage, central bank interest rate cuts would refinance mortgages immediately. What are your thoughts on fixed vs floating mortgages? They are hedging different things.*

**Atif Mian**

That is correct, floating rate mortgages solve this problem but can introduce another, for example, if interest rates were to rise, or spreads were to rise, more generally. At the conceptual level, it is important to

pose this more generally. I don't think adjustable [floating rate mortgages] is the silver bullet that solves this issue. It would have helped in this context obviously, and there is evidence that has exploited the difference between fixed and floating mortgages to show that those households on adjustable rates, and the local economy, benefitted. Anything that appropriately shares risk helps, and there are multiple ways to do that.

**AM**

*We might be in a different world now, because before the crisis we had high central bank interest rates and when spreads rose, central bank rate cuts more than offset the rise in spreads. But now we are in a world of low central bank interest rates, so there is less scope to offset the rise in spreads. As a result, the fixed rate mortgage may have become more attractive.*

**Atif Mian**

Exactly, that is why I was hesitant to say that adjustable is always good. It may be that, going forward, it may be the other way around, given the nature of the risks. The important piece is that there are mechanisms to take these aggregate downside risks away from the debtor and push them somewhere else. Somebody has to absorb them, but again, it goes back to the earlier point I made about aggregate risk – that somebody has to bear it. It is a question of who is in a better position to bear it.

**AM**

*Going back to the risk-sharing idea, how important are well-capitalised banks, in achieving better risk-sharing outcomes?*

## Atif Mian

I think that, in thinking so much about preventing bank failure, we sometimes lose sight of the more fundamental question of what are we trying to do here? What are the banks for? We don't say the same thing about a car manufacturing company or grocery [supermarket] chain. The whole point of banks is things like monitoring and screening borrowers that others cannot do. The point of banks is not to hold government bonds. I can do that, my pension fund can do that. Banks are supposed to take risks. There is this idea that we are supposed to prevent banks from taking risks, but that is fundamentally against the very purpose of why banks exist. That should be the starting point. Of course, we don't want banks to take bad kind of risks, given deposit insurance, and so on and there is the liquidity issue of Diamond and Dybvig (1983) in the background. We understand that. But all of that suggests that banks should have higher capital.

This whole notion of risk weights is very dangerous, in my view, because it fundamentally disrupts the key purpose of banks. A risk-weighting

*‘..banks can have a lot more capital... the idea that capital is a scarce commodity is strange – tell that to Google or Elon Musk. They are doing extremely risky stuff without any debt.’*

approach says that if you hold government bonds, you need a lot less capital, as opposed to lending to start-ups or issuing state-contingent bonds, for example. Those latter functions are much more important. We want banks to be able to do that. Why price them with a higher penalty with higher risk-weights? I am not sure what purpose risk-weights serve. Just looking at capital, unadjusted, should create the right incentives for banks. You want to

use your capital to make the highest returns that you can, while suffering

losses if you make bad decisions. That should be the name of the game. Anat Admati of Stanford University has very forcefully and eloquently been making this point, and I agree with her: banks can have a lot more capital. Whatever the percentage should be, the idea that capital is a scarce commodity is strange – tell that to Google or Elon Musk. They are doing extremely risky stuff without any debt.

## AM

*Can we change topic a bit and talk about the macroeconomic research agenda? Micro-foundations have been important for the development of DSGE models.<sup>10</sup> You have done a lot of work with micro-data. How important do you think micro-data will be, going forward, for our understanding of macroeconomic developments?*

## Atif Mian

You could say that I am biased here.

But I believe very strongly in that.

I think we do a disservice to the profession, more generally, if we don't hold ourselves accountable to actual data. I am a fan of structural work. I think for bigger questions of general equilibrium and so on, the nature of those questions is that we need those models. But we need to hold any class of models accountable to real data. The proliferation of micro-data

*‘We need to hold any class of models accountable to real data. The proliferation of micro-data opens up enormous opportunities... We are just starting to scratch the surface.’*

<sup>10</sup> Dynamic stochastic general equilibrium (DSGE) models are a commonly used type of macroeconomic model.

opens up enormous opportunities and possibilities to do that. We are just starting to scratch the surface of that and it's very clear, in my mind, that the direction that young scholars, in particular, need to focus on is to combine the richness and granularity of the micro-level data with some of the conceptual insights of general equilibrium structural models. But then really test those models and say which ingredients of these models are more empirically relevant? That is a very important question that can only be answered by actually putting those models to the test in empirical data. Just to give you one quick example of this, suppose a model says that monetary policy can solve this problem, but it is assuming something very important about the elasticity of consumption response to interest rates. You know, we need to estimate those things in the data. We cannot just assume a calibrated elasticity of consumption response to interest rates. We need to look at the data to see how people actually respond to interest rate movements and that will then tell us how effective, in practice, monetary policy can be in responding to, for example, aggregate demand shocks. It is extremely important to discipline models with data in a way that is more agnostic, so to speak. That does mean that, at times, reduced-form work is actually more powerful than structural work and then sometimes the opposite, but I think this is an understanding that is important.

**ÖK**

*Do you also observe more push by macroeconomists to use this big/micro-data for better identification of causal relationships, rather than relying on aggregate data in aggregate models such as DSGEs or VARs?<sup>11</sup>*

11 A vector auto regression (VAR) model is a statistical regression model that allows for inter-dependencies among variables.

**Atif Mian**

I think it is fair to say that that is one clear wave in the profession right now. The economics profession more generally has moved towards empirical evidence a lot more than it used to. It is the right time for natural reasons. The fundamentals have been now laid out quite clearly on the theoretical side and some of the data is now a lot more available than it used to be. You are seeing a lot more of this in macro. When a field is undergoing a shift like this there is some resistance as well, for whatever reason. Some have more to lose from the shift than others. There is a political economy in it. We have this in the profession, to some extent, but the broader direction is more empirics.

**AM**

*You participate in a lot of policy discussions and conferences and referee/edit large number of papers. What are the most influential papers you have seen this year?*

**Atif Mian**

This year or more generally? You really narrowed the window!

**AM**

*It could be forthcoming papers, or papers from the last few years.*

**Atif Mian**

Obviously, I know my field better. There are two strands of literature that I have found very useful in understanding the issues we have been talking about. On the theoretical side, it is work starting with Eggertsson and

Krugman (2012) and then there is a follow-on literature and a number of people have contributed to that. It has been very useful in understanding why demand deficiencies in the economy may not naturally be resolved through the usual adjustment of prices, interest rates and so on. That has brought to the surface the potential existence of certain types of externalities, some I have already mentioned. That kind of work on the theoretical side has been very useful.

On the empirical side, I think the micro-data that you referenced earlier, has really led to an understanding and appreciation of the kind of heterogeneity in practice that makes some macro models less relevant than others. I think that empirical work has been very important and it has fundamentally changed the trajectory of work in the macro-finance space, but in macro more generally, as well. The idea is that heterogeneity is very important when we think about financial shocks, because typically, the borrowers and lenders have very different marginal propensities to consume. How they respond to the same shock is very different, depending on who bears the risk. That realisation is extremely important. It has such deep implications. For example, the way monetary policy works and the way fiscal policy works. Certain assumptions that we take for granted in a more unified, representative agent framework do not hold anymore, once you recognise that the actual economy has this important heterogeneity. That is where empirical work is really important and the challenge is to understand what kind of heterogeneity is really important. Heterogeneity can mean a lot of different things – what types of heterogeneity are really important and what types are less relevant? For example is heterogeneity in risk aversion more important than heterogeneity in marginal propensities to consume that is driven by different balance sheets. I think the latter is more important than the former.

The other strand of literature that I think is important is on the behavioural economics side. Everyone understands the limitations of behavioural work – it can have too many predictions and we need to put some more discipline on it. But I think it is really important to push that forward in the macro literature, as well, and to appreciate its implications for the macro economy.

**ÖK**

*What economists have influenced you the most? Dead or alive!*

**Atif Mian**

Dead or alive! Starting with the early economists, I found Irving Fisher to be very insightful, so that's number one. More generally, I think I have really learned a lot from the empirical revolution in fields such as labour and public finance, and so on. They do not have to be directly relevant to my work, but I appreciate the work they do because I think we learn a lot more, in terms of how some markets are. For example, I think some of David Autor's empirical work is tremendous. It has given us important insights into labour markets that we would not have had, in the absence of that kind of work.

**ÖK**

*Are you referring to the China shock paper (Autor et al 2013) specifically?*

## Atif Mian

The China work is one example of that. Before that, I think the empirical work of people like David Card, Alan Krueger, Josh Angrist. More recently, I think the work of Raj Chetty is just absolutely brilliant. Emmanuel Saez on the question of inequality. There is a pattern here. They are all very serious thinkers, but they make their point in a way that makes it very difficult to question their work, because the ultimate argument is based on sound empirical work. It is hard to deny that. That is my philosophy, in general – you want to think about the theoretical foundation very carefully, and take on questions that are interesting from that perspective, but ultimately, the crux of the argument travels the farthest when it is based upon empirical proof, with identification taken care of. Then it becomes really hard to question. That is the kind of recent work that I find most appealing.

## ÖK

*We understand you are a cricket fan and went to the Basin Reserve for the New Zealand-West Indies test. Do you have a prediction for the Ashes (Australia vs England)?*

## Atif Mian

It is hard not to bet on Australia, especially [when they are playing] in Australia.<sup>12</sup>

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<sup>12</sup> This prediction was made on December the 5<sup>th</sup>, 2017, with Australia up 1-0 and ahead in the second test. Australia won after winning the third test, later in December.

## AM

*Thank you very much for your time, and for visiting the Reserve Bank this week.*

## Atif Mian

Thank you for having me, it has been my pleasure.

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