<u>Transcript of the Questions and Answers of the session "Macro-Prudential Regulations: Linkages with macro-economic policies for promoting financial stability"</u>

Panel: Jose Antonio Ocampo (Chair), Andrew Sheng, Sir John Gieve, Jan Kregel, Stephany Griffith-Jones

Questions to the Panel

V K Sharma, former ED RBI: I have a question for John Gieve. The traditional Taylor rule is used to formulate counter cyclical monetary policy to target inflation and output, and the tool used is the interest rate. Why can the same rule not be modified and applied to financial parameters, like asset price inflation and credit bubble? Financial asset prices has been the major cause of this global financial crisis, so maybe counter cyclical monetary policies can target the financial parameters.

Louis Kasekende, Deputy Governor , Bank of Uganda: This is a question for John Gieve. There are some very strong reasons for promoting and supporting the independence of central banks. However looking at the inter-dependency between stabilization, regulation and the fiscal, do you see any risks of delayed action by central banks or by one of the parties? Are there inherent risks that we may then have to deal with?

Sukhdave Singh, Deputy Governor, Bank Negara, Malaysia: This is for John Gieve and Stephany Griffith-Jones. Looking at the current debate around macro-prudential tools, sometimes you get a sense that people have seen it work, but they are asking whether it works in theory. Very often, you hear professionals talking, particularly on inflation targeting, and in many conferences I have attended before the crisis people came up with additional proof to show that inflation targeting was a superior frame work. Now you throw them into this new world where you don't have that sort of elegance of the model which can capture the policy environment. So how much of the debate right now is really because people are missing the elegance of theory, to back up the policies in this complex environment?

Second, despite all our knowledge, policy-makers repeatedly fall into rationalizing developments. Some body mentioned about "it is different this time." You do see policy inertia in the face of new developments. As a result, policy-makers get repeatedly bitten in the hind quarters, because they rationalize it. For us in Asia, we saw it for the first time during the Asian financial crisis particularly in terms of the response the crisis inspired. I know Stephany touched a bit on this particular aspect of it, but I think it is something we as policy-makers need to explore more fully: there is no point in having a frame work for taking macro prudential measures, then when something happens we start rationalizing.

S S Bakri, Institute of UN & UNESCO Studies: My question is related to the overall international financial crisis which developed in 2008-09, I would like to know as to the major reason for this great global turn down, financial juggernaut which happened 6 – 7 years ago. What was the major reason?

Shiva Kumar, Edelweiss Financial services: There was a mention that the deposit insurance scheme can be done away with. I would like to know successful examples of alternative methods in some countries working out well.

Adair Lord Turner: I have a question for Jan on the interpretation of what you were saying on getting rid of deposit insurance and I think that ultimately what that really amounts to is formal direction of credit. But when you first said that you were advising to get rid of deposit insurance, I thought I would disagree with that, we have people talking about dispensing with deposit insurance because of market discipline, and these people who care about their deposits that would place discipline on the bank; that is just not the case because retail depositors never impose any meaningful or useful discipline on it. What you are really saying is that deposit insurance only works for an individual bank, if it is a claim on the rest of the banking system either the past or future and if you really want to have the depositors absolutely certain you are essentially giving a state guarantee. I would say that we are de-facto there already. In the UK we can debate whether we will have an actually funded deposit guarantee scheme but at the end of the day, it is state guaranteed, it will be paid for by central bank money, in which case why don't we just become overt about that. , only by the mechanism of calling it a state guarantee or by switching it through to a narrow bank which is backed by treasury bills which is just another way of making retail deposit state guaranteed. The question once you have gone that far is where does credit come from? If we leave that to an entirely free market, I think where credit will come from, is from set of institutions which are outside what are called banks will manage to create quasi bank equivalents. I am not convinced with Laurence Kotlikof stuff of view that it is all going to be of limited purpose banks, where you have loan mutual funds, and if you run loan mutual funds, they will end up managing to create things that people believe are deposit like institutions. In a sense you then come back to having to control credit supply, you are essentially suggesting something either a direction or incentive or a guarantee system.

Here is my question; it comes back to how much credit is created. How do you actually control those guarantees or their direction in this sense? We want to distinguish between credits against speculation vs. credit against say real new investments that create new cash flows that will pay back the investments. But in a modern economy, a non-trivial part of actual new productive investment is commercial real estate investment. We sometimes think that it is entirely speculative, but we actually we do need to develop new office blocks, new entertainment centers, new retail centers and there is a real development process and as we become more service intensive post- industrial society, a greater proportion of actual real plant and equipment is commercial real estate. How are you going to manage to allow a reasonable degree of credit extension to useful commercial real estate investment without that disappearing into circular commercial real estate speculation, in which the more credit there is, the more the value of the land goes up, therefore the more the credit extended and more the value of land goes up? How mechanically do we do it in a world where the ability of the administrator to discriminate between what is speculation and what is not is probably somewhat imperfect?

D Subbarao : My comment takes off from the schematic that John Gieve gave which is of segmented policy making structure, monetary policy, fiscal policy and policy for financial stability being done by different institutions, often without any co-ordination, often with some conflicting responsibilities. You said that it is sub-optimal, that it is a flawed model, on that there is no disagreement, everybody is clear about that. But what is not clear is - how do we implement that lesson?

Two questions in particular. First, do we know when we should implement monetary policy and when we should implement macro prudential policies? Are they substitutes or complements? We know that both of them are politically difficult, we know that both of them affect aggregate demand and we also know that errors can be costly. But do we know when to implement monetary policy and when to implement macro prudential policy?

The second question, do we have any view on an optimal regulatory structure for taking care of monetary policy and macro prudential policy? There is one view, post crisis, that they should be brought under the same umbrella because that would avoid the problem of lack of co-ordination, but there is another view that they must be under separate umbrellas, that they must be separated, because having the central bank do financial stability would compromise its autonomy, and in particular compromise its autonomy on monetary policy. So do you or does any of the other panelists have any thoughts on these two questions about when to implement monetary policy and macro prudential policy and second, an appropriate regulatory structure. Thank you.

Joseph Stiglitz: A couple of brief comments and questions. I think one of the general issues that have been raised by some of panelists is trade-off between simple rules and discretion, and the growth in the economy. I just want to suggest that there are many opportunities for simple rules. Some of them have already been mentioned like in studies we did at the World Bank several years ago on speed limits. We argued that speed limits would have (this was before the crisis) really dampened a lot of the crises. It is not very difficult thing to implement even though it is not a perfect rule, it certainly would have alleviated the crisis. The rule that all derivatives have to be traded over exchanges is not a difficult rule, it is a very contentious rule, but it seems to me that it is easy to implement. Elizabeth Warren has been arguing that we have no need for a lot of the complex contracts that they are basically rent seeking contracts. Joe Jackoff has talked about the idea of fishing - which a lot of work that goes on financial markets is fishing for fools as he calls it, that you are looking for people who are stupid, so that writing down simple contracts reduces the scope for that kind of rent seeking. Thailand and number of countries used to have simple restrictions on the fraction of lending that could go to real estate, you can say to new real estate. You can write down the rule and then if you got a shortage of real estate, you change the number. We know that if large fraction of bubbles are associated with real estate bubbles, let us try to dampen that. What I would like to suggest is that there may be much more scope for simple rules – you get less perfection relative to our deal models, but maybe we get more perfections relative to the real world. What is the cost of going to these simple rules?

In that respect, I want to highlight what several people have said, there is a natural proclivity in the markets to try to create more complexity, not necessarily as a result of greater efficiency, but because of greater rent seeking. You can see how that happens, and typically in the partial equilibrium way that they are created, they do not think of systemic consequences. When we created first, second, third and fourth set of tranches of mortgages, we did not realize how difficult it be to unwind, to do restructuring of debt. That was not the issue that the people were thinking about at the time they were signing it. But from a systemic point of view, there were simple rules we could have followed like, we could have said you cannot have second mortgage or have a second but not a third mortgage. Based on the same partial incentive, there is a strong incentive to create non-transparent systems. Banks like the OTC derivatives because they make money. The argument is that with some kind of lending activity, you get inside information, which can make money from market manipulation and if we have more transparency we might reduce the scope of that. One has to keep these in mind when designing a simple regulation.

The second point addresses the kind of ambiguity that has been raised as some of us economists believe that that we now understand the structure of the economy, and it is others that don't. But we now know that the common wisdom of the economists was wrong before the crisis. We are still in a position that I still believe that I know, but I still understand that others may not know that I know, and may not give us the same weight to my view as I would give to those views. That in a democratic society gives rise to lots of difficulties. Let me give you just one example on Basel III debate that is going on and relates to tradeoffs that one has been talking about and is at the central of rulemaking. There is a view that the higher capital requirement associated with Basel III will in the short run decrease lending. On the other hand, if you really believe the Modigliani- Miller theorem which is sort of the hype-religion of neo classical economics or most economics, it says it does not make any difference. I think that there is something in between those two, which is that there is inside Modigliani- Miller theorem that markets do not work quite as well as Neo classical economists thought. But then, if you are analyzing that you cannot use a perfect market model, you really have people who are arguing that Basel III will really slow down growth to articulate what they say is the market impediment or market failure, and then you design regulations to deal with that.

The final point I want to raise I think is that the idea of bringing all credits under the ambit of regulation is really important and I think shadow banking system is a problem. The question is can you do it. My suggestion is that it is not difficult, as all credit contracts need to be enforced. Since all contracts have to be enforced, you could require that any contract that is an inter-temporal credit contract has to be registered. So, at theoretical level one could have a complete registration of all inter temporal credit contracts. You can define on what could be brought under the ambit and I think you could bring the shadow banking system in principle, under control. But the question is if you did that would there be an overwhelming task for regulators even if they have the information to actually implement it.

Answers by the Panel

Panel: Jose Antonio Ocampo (Chair), Andrew Sheng, Sir John Gieve, Jan Kregel, Stephany Griffith-Jones

Sir John Gieve: First of all, on the Taylor rule. I think Taylor believes that all that went was wrong because people did not obey his rule properly! Can it be modified? I doubt whether you can produce a sort of modified Taylor rule which puts in financial quantities as well and produces a simple answer. I think one of the main lessons from the great stability is that the Taylor rule, which is what most central banks were operating more or less explicitly, did not capture the growth of underlying imbalances in the economy and therefore was not a sufficient guide to action. I don't think we can replace it with another simple rule. I think that leads to a degree of judgment, discretion, and complexity in trying to assess the stage of credit markets and makes the whole business of policy making messier.

The second question about independence. Yes, one of the reasons for such strong support from the economic profession for the inflation targeting model was that it moved the professional economist out of the advisory seat into the decision making seat, and never before had professional academic economists such a grip on policy making in the major central banks and part of the resistance to abandoning inflation targeting as a doctrine is a worry that this would lead to questions about whether professional economists should continue to take the key decisions and be the key decision makers. Of course there is a risk that if you are trying to take a collaborative approach, you are operating with regulators, political appointees, with ministers and you have political pressures. The necessary measures will be delayed, that is definitely a risk. And there are theories why a politician is interested to do that. My experience of politicians, none the less, is that they are willing to take tough decisions at times, particularly if there is transparency around the analysis on the policy frame work to the public. I think the experience of crisis has shown successive political leaders taking very tough decisions, which they know will be fatal to their own tenure in office; none the less they have done it. I am not skeptical of politicians. Yes, you still need to retain a professional statutory independence in central banking but you need to recognize that it is not an absolute one, that collaboration is necessary and that governments do have a responsibility for stewardship of the whole system. We have seen in Japan actually in the appointments in US and UK, there come moments when politicians say that we want the central bankers who can do this. That is a legitimate thing for them to say and they will appoint people who will do it.

On Dr. Subbarao's point, I was making the simple point that if you are dealing with credit growth you have got to look at the different instruments which have a bearing on credit growth, which include monetary policy, which include regulatory policy, and which include actually fiscal policy through things like government guarantees, through Fannie and Freddie Mac for example, all of which bear on growth of credit and so on. You need to look at them together. Also do we know when to use which instrument? An IMF paper that Stephany referred to is very useful in giving some sort of the pointers , which is when you have commercial property boom, maybe we use a sectoral regulatory measure to begin with. My own view is that you probably have to use everything together to dampen the overall cycle. The example of Spain which had a very sensible dynamic provisioning, perhaps inadequate, still a very sensible dynamic provisioning conservative piece of regulation was an example of how incredibly draconian you have to be on regulatory policy, if your monetary policy is too loose . So you need to look at them together.

Finally, on optimal regulatory structure. I don't believe there is any such thing. Every structure has its vulnerability. So our structure of three separate authorities had the vulnerability that things will fall down on the middle and we wouldn't look at the intersections. We needed to guard against that and we didn't guard against that and now we have drawn most of that together in BOE - there is a new risk, which is you get house orthodoxy, blinkers coming down and there is too much rigid, one bank's orthodoxy and we need to address that. So, you have number of different ways you can cut this. You need to be aware that each one will create vulnerabilities and you need them to work at how to mitigate those.

Stephany Griffith-Jones: I just wanted to make some points also developing some of the ideas that were presented in the panel. One was the very interesting point Jan made on governments acting through certain contingent liabilities in sectors which they want to support. I think another way, which actually is even more direct, is government actually lending through for example public development banks or other mechanism. The government says at that this moment in the cycle, there should be less lending or there should be more lending and they just do it. In Germany, the second largest commercial bank is KFW and it has been a very useful instrument for doing counter cyclical lending in the crisis including to SMEs, maintaining investment in renewable energy and so on. I think part of this mystification of how efficient financial markets are, is that many economists and many institutions have reduced the role of these banks. Again, not so much in Asia. I think that these combined with the kind of instruments that Jan was referring to are interesting instruments which can also give priorities.

And the other issue is what Andrew raised, about keeping it simple. That is one of the strengths of emerging economies and even more in the low income where financial systems are simple. In the past, we were told that this was a bad thing, we were told that they have to be sophisticated, more complex, which means more obscure, more opaque. I think the big challenge is how we get the developed countries and more advanced economies actually to simplify the financial system so that we can simplify the regulation. For example, I read a testimony that Joseph Stiglitz made to the US congress, where he said, if counter cyclical regulations do not work, let us simply limit the growth of credit. I used to work in a central bank and that is how we did it. We decided the credit that could be given by banks annually -

there was not much shadow banking - and it more or less worked. If we made mistakes then of course there was too much inflation or too little growth. Now, that becomes difficult due to the gaming of the system. How can we reduce, particularly in developed economies, the scale and the magnitude of this gaming and of the complexity so that the policy makers can actually see what is going on. That relates to a question asked from Malaysia because to have a sustainable frame work, you need to know what is happening. I remember Zeti Aziz, Governor Bank Negara after the Asian Crisis saying that we need better information, but that of course has to be very dynamic, to the extent that there is lot of financial innovation. May be one has to think, like Elizabeth Warren has said, that some of the instruments of financial innovation are not good innovations and maybe they should not exist. May be regulation should also be about limiting financial innovation that does not serve the purpose of the real economy.

Jan Kregel: Just a couple of quick notes on deposit Insurance. Everybody presumes that it is a good thing and everybody presumes it has avoided the crisis of all sorts. James Tobin long ago pointed out that deposit insurance was created in the US to solve a problem that did not exist. Basically deposit insurance existed in order to prevent a contagion run on a single bank. In the 1930s, in US, there was a run against the entire financial system. So, in fact deposit insurance would not have stopped that. What had to be done was to create the RFC which eventually nationalized all of the banks and then went and resolved those banks which were considered viable and shut down the ones which were not viable. So deposit insurance did not absolutely have any benefit. It could not have solved that particular problem. Joseph has already made reference to the fact that we do have rules about resolving financial institutions that do not meet solvency conditions and we chose not to use them. In fact the limit on the size of the insurance fund was something that promoted the increase in the size of the banking system. If you read Sheila Bair's book, she proudly explains that she managed to do virtually all other resolutions while she was head of the FDIC by way of acquisitions. She did not have to use any other money in the fund, because she knew that if she did so she would never get another addition from the US Congress and secondly that if she did attempt to use the funds for the larger banks the fund was not sufficiently large to do it. That is basically how banks became too big to fail, and this is why we did not apply the resolution mechanisms because the fund was not large enough in order to bail out the very large institutions. If you are going to have a deposit insurance fund it has to be an unlimited contingent liability of the central bank. It cannot be an independent fund. Most countries in fact use deposit insurance as private funds, most European countries that have introduced them have them as privately funded institutions; this is the case of Italy and a number of other European countries and by definition given the size of the banks, if they were to be used the insurance funds themselves would become bankrupt. We saw what happened in Europe, when you had a declaration of full support, deposit insurance did not have sufficient funds to cover it. You have to answer yourself the question of whether these things provide the kind of stability that we think they do and might it not be easier to get rid of them and substitute something else, and this is where narrow banking becomes a viable possibility because it says that you need not have to insure your deposit, if the deposits are in fact held in risk free government assets. The risk that you have there is that you have this 100% risk free banking system all together, and what you have done is completely eliminated liquidity creation.

There are a number of papers written by mainstream Minneapolis Federal Reserve Bank economists who say quite very clearly that if you have 100% risk free assets banking system, this will abolish the banking system. But we do not want to do that. As I started off by saying whether the government decides to do it as Stephany has just suggested, or whether you outsource it to the private sector, you need someone to provide the liquidity to fund the system and allow it to function, this is not only simply in terms of investments as we saw after the Lehman crisis, this is simply to help someone to allow business firms to pay their wages on a weekly or monthly basis. Without the financial system that provides liquidity, the firms can't effectively do that. This is the logic behind this sort of proposal, to try and keep the liquidity part of system and at the same time to eliminate the negative impact the deposit insurance clearly has in terms of moral hazard.

Andrew Sheng: I want to use this opportunity talking about deposit insurance to illustrate the contradictions of the system and that no rule or no recommendation is permanent. Coming back to Stephany's point, it depends upon the architecture of the system. You have to have an idea of what the architecture is. You may have many small banks, the chances are that the failure of small banks actually will increase the contagion in the system and deposit insurance may help. On the other hand, if you are like Australia, Canada, where you have basically five banks, do you really need deposit insurance? Deposit insurance will be an invitation for big banks to be too big to fail. So the danger is you have to think about why you need these rules, in what context and at what stage you need it. The big debate over capital adequacy ratios and leverage ratios is also on this issue. We do not want too big to fail ever to happen again. Rubbish, the banks will definitely get into a crisis; and at that point of time government will face a bail out. Previously, when there was no deposit insurance, banks maintained 25% capital adequacy ratio. The minute you had deposit insurance, and assurances that we will look after you, Greenspan put etc., banks took higher leverage as they had incentive to make more profits until they blew up the whole system. The tradeoff really is at what stage you have the cut off. And the reality is that without the central bank, the government has to bail out the system for a contingency shock for which no banker, no individual, no academic can predict, that is the reality. The whole purpose of government is to absorb the residual shock that nobody can predict. At that point of time you set that rule. The division of labor between the state and the market will then become capital adequacy ratio. What can banks together with deposit insurance operate, at a level that is reasonably profitable, without blowing up the system is the tradeoff between regulation which is like an insurance policy against this one time big risk and then making sure that people do not blow the system up as a whole. So different economies, at different stages of development, need different instruments and different structure and tools. There is no one size fit all recommendation. This is the danger that in the policies which we have done through the World Bank and the global standard setters, we started writing more and about "One size fit all" standards. The trouble is what a good standard is for a global bank is poison for an individual small bank in a small individual emerging market because when the rules are too complicated; the entry cost is too high. In fact if you really think about it, too big to fail banks love Basel III, because the minute you make it very complicated, the entry cost is too high. No small bank can gain entry in to the system because you cannot fulfill all these regulations. We really need to think about is how do we have a proper trade-off and allow national differentiation, emerging markets to say we can agree globally on common objectives, common principles but we cannot have the same rule because what fits you does not fit me. The danger is that if I stuck to that rule, and that rule is wrong for my context and for the global context, we are creating the conditions of failure and we are sowing seeds of our own failure. That is my basic plea, globally agrees on common principles but don't agree on very common standards.

Let me give a very simple illustration on level playing field. Every bank says we must have a level playing field. The reality in market is that the retail has deserted the market. In stock markets, in foreign exchange markets etc., there is no level playing field. If Andrew Sheng, undertakes a carry trade, my banker knows my position, knows the position of a large part of the market and is in a position to manipulate the LIBOR etc., which I am not in a position to influence and actually they can guarantee their profits and yet if Andrew Sheng fails, that is the free market that will teach you. For other guy it is bail out, with my tax payer's money. It is not level playing field and so we are preaching myths. What we have to clearly think very clearly through the system is that we should have relatively simple ways for managing this, until markets begins to operate in a more transparent, competitive manner, and at this point of time, what we have done in the existing regulations, and that is Joseph Stiglitz's fundamental point and I totally agree with him, is that we have entrenched the too big to fail institutions not just in banking system but perhaps may be even in asset managers etc. We need to have a very different way of thinking about this. I am not saying that there is a simple solution to this, but we need to be aware that the concentration in the system is now worsening rather than being better. Maybe, we need to have very unorthodox solutions to a very complex problem.

Jose Antonio Ocampo: By listening to you, I was thinking in the past the World Bank used to tell us in the developing world, save the banks, not save the bankers." That was a rule that we should apply. Actually I had to apply and I had to intervene in banks, I essentially told the bankers until you say you have no equity I will not intervene, that is if you say you don't have equity then the Governor will take over. So I applied the World Bank rule. May be the problem is that some governments are reluctant to do that particularly the US Government was very reluctant relative to Europeans to say that you are bankrupt period - government takes over. A better route is good resolution institution that takes over and as in my country manages deposit insurance as a way of financing interventions of financial institutions. Trying to think of a deposit insurance that is totally separated from government for example is a fiction and I totally agree with Jan in that regard.

Stephany-Griffith Jones: I think the first point that Joseph made so strongly is very important about the issue of simplicity. It doesn't have to be so complex. I think the problem is that the financial sector has sort of intellectually captured everybody else by pretending that that we have to have it so complex; then from the complexity comes opaqueness, the lack of information and the paralysis of the regulators in the relevant moment. I think Louis Kasekende's job is luckily easier than the one of the FED or the BOE. I think that is exactly the opposite of what countries like Uganda were told. Our key challenge is how we reintroduce simplicity into this complex and bloated financial system. My second point relates to this. I agree with Andrew that "one size fits all" is bad but also the emerging economies like India need to make sure that there is financial stability in the developed economies. So we in emerging economies have a major interest to stop all this contagion and for that, it is right that India, China and Brazil require the US and Europe to have simple systems that can be better regulated. If not, we are going keep having crises that spill over. A final point on regulatory structure, it seems to me that Sir John was exactly right that there are no perfect regulatory structures, and as Dr. Subbarao knows that it has to do with the quality of regulation in whatever structure.

Jan Kregel: I believe, it was in 1933 that were two books published. One was Lukeman Currey who pointed out that the kind of what we may call directed lending that existed at that time in fact had a direct impact on the money supply and from then on everybody talked about quantitative controls rather than qualitative controls. The second book was by a Columbia PhD student called Dunkman which was called qualitative credit control and it is a whole book that explained just exactly how at that time you could in fact engage in what is a proposal for a return towards directed lending. The other part of that idea is what to get bankers do what they were supposed to do originally and that is due diligence and the assessment of credit worthiness on the advances that they in fact do make.

Second part of this proposal is basically that you would also be downsizing financial institutions so that the investment units could be of much smaller size and at the same time both the bankers and and at the same time the bankers and the regulators could in fact decide whether or not the kinds of loans they were actually making were in fact relevant. The other part is on Jo's reference to speed limits and Stephany's idea of limits to asset growth. In 1977 Minsky wrote a paper where he basically said that we are doing regulation the wrong way. If we want a particular rate of growth of nominal income, there is a rate of growth of assets that will support that nominal income, then we should set the limits so that banks do not create assets that are in excess of that. His point was that profit making institutions in general would exceed the amount of credit that was required to support the given rate of nominal GDP growth so that you needed to put limits on the amount of leverage that individual institutions could have in order to make sure that they met that particular target. This is sort of idea of turning the regulation on its head, you don't let the banks to do whatever they want to do and then you see they have done too much, then you apply the limit or a governor on it to stop it, you say right from the beginning- this is the amount of credit that the system is going create, and this is how we are going to divide it across individual sectors.

Andrew Sheng: I justify want to take a point that there is no such thing as optimality. I think that is actually a by-product of closed system equilibrium thinking. Closed systems have a best solution. Open system have what is very complex term called equi-finality that means you can get to the same goal but with different roles to do. So emerging markets can take different policy tools to different issues- what is right at one point is not right at the other. To give you a simple illustration, what the current financial regulation has not under stood is that banking is important but not necessarily banks. The biggest payment system operators now are mobile phone companies and they are not regulated by banking regulators. Let me give a simple illustration. This is my favorite Pakistan regulator's idea. He said 15% of people in Pakistan have bank accounts, 72% have mobile phones; who is going to be the big winner in financial payments, because every deposit with a mobile phone company is actually a bank deposit. Think about it. Therefore today every mobile-to-mobile phone payments, they bypass even the central banking money; I can do through bit coin. The whole game has changed because technology has changed the context in which we make these rules. So my basic conclusion is that open system theory is far superior to close system equilibrium, and the trouble is that most of our mind set paradigm is still anchored on the old, we are fighting the lost war. We have to think about how to shift out of the paradigm into the idea that what we are doing what seems to be completely unconventional, unorthodox may be the right solution and what is the orthodox solution may be the wrong one.