

INTRODUCTION AT GSS EU-CHINA PLENARY 8 OCTOBER 2014

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Central bankers and regulators around the world are asking the question: Have we done enough or even the right things to stabilize the financial system? My personal answer is that the present complacency is unsubstantiated, that we need to do much more and that we are steering dangerously close to a second crisis, maybe not as serious as the one we have experienced, but serious enough. The challenge is to benefit from the up-sides and to address the down-sides of a globalization that has brought hundreds of millions out of poverty and almost eradicated death of new-borns in most countries.

Sometimes the obvious is staring us so in the face that we don't see it. Capitalism is the best system ever invented to create wealth. But *unchecked* capitalism comes with down-sides. The success of the Western world is above all the success of the marriage of capitalism with a public order that ensures that the benefits of the system are shared by all. The Americans call it liberal democracy, the Germans embedded capitalism and there are other names. The glue keeping the marriages together is the Rule of Law. And that Rule of Law has started to wither away as the market economy is becoming increasingly global, while the public orders remain mainly national. There is a growing mismatch in territoriality. An overall question is what we can do to restore a rule of law that can steer the international financial markets, domiciliate income, manage externalities, create fair competition and a level-playing field to ensure a sustainable financial system and turn recovery into sustained growth. A very promising development is that President Xi has made the Rule of Law a centrepiece in his Chinese Dream.

This session is mainly about the global financial system. There are three things about this system one has to recognize.

- The first is that money to some 97 percent is created by banks, not by the central banks, but ordinary banks. When they create a credit they also create a matching deposit and in that way the volume of money increases.
- The second is that the creation of new money surpassed the growth of the economies in leading countries before the crisis and that that pattern has reoccurred. This has created a consistent growth of private debt, which has fuelled the debt-driven growth model that has been more or less consciously adapted by Western countries and, lately, to a certain degree by China.
- The problem with the debt-driven growth model is that it creates long-term financial instability. There is increasingly recognized that we have a savings glut on global level, i.e. that the savings surpass the real investments. It is not fully understood how much this glut is created by global imbalances between current account surplus and deficit countries or which role the excessive money creation plays. The effect is anyway that we see investors turning to financial investments as they see a better return on their investments if they invest in already existing assets.

Is this the cause of the bubbles and the crisis? The problem is that we don't have models in which to test our hypothesis. In the traditional macroeconomic models the financial markets don't exist.

The good news is that the progress in ICT enables us to create models with a higher degree of complexity that better represent the world as it is. Simulation models that meet these demands have been created in other sciences. Now it is time for economics to take a leap into the advanced world of ICT.

Global Systems Science offers such a leap and the funding by the European Commission shows to my mind a great insight in both the need and the possibilities.

So let me share with you some of the research challenges as I see them.

The first is to create **an economic model that includes the financial system**. It should be obvious to everyone that a model of the economy that excludes the roles of the banks and other financial actors gives appropriate guidance only in stable conditions.

We also need better **models of the financial system as such** to better judge the effect of macroprudential regulations and monetary policies

The third is that we need **models with more of granularity**. A by now famous example of why we need it is the test made by Federal Reserve a year before the financial crisis. They run the hypothesis that the real estate prices would fall with 30 percent through their model and found that it would not be a big issue as private savings had surpassed the debt build-up. What the model did not tell was that the savings were mainly made by 1 % of the population, while the 90 % that had borrowed had negative savings.

The way out of the Great Depression was a rebalancing of income. Roosevelt reduced the income of the top ten percent with 2.4 percent in 1933 and 1934 and used it to increase the income of the majority with 8 percent. It worked because the propensity for consumption is higher among those with lower income. But there is no way for contemporary decision-makers to test the effectiveness of such actions in existing models. The models are just too aggregate.

A fourth research challenge concerns the global dimension. We need **models in which we can test global interdependencies**. How about the savings glut I just spoke about, the global imbalances, the role of the global reserve currency etcetera. There is no model around in which to test different approaches.

Many express the concern that models that include many aspects will be too complicated. There is a merit in this concern. Complexity has to be managed. One way of doing it is to strive for modularity i.e. that each system should and can be developed independently but with interoperability that enables us to study how changes in one system affects the other systems. Instead of one gigantic system we create a system of systems. We also need to recognize that the leap from the simple PC models of today to the complex models of tomorrow is huge. Economic science is ten years, perhaps twenty years behind physics, meteorology, biomedicine and other natural sciences. ICT is seldom part of the education at the School of Economics. We have to be humble and take one step at a time.

And finally. You cannot see the economy isolated from other global systems such as the energy system or our climate. We need **bridges between global models** that enable us to study cross-effects and interdependencies. One example close to the heart of this conference

is how the financial system can be incentivized to support the long-term investments that are needed for sustainable development and green growth.

There is certainly much we need to understand about how things are interrelated. There are relations between how the global economy works and migration, social unrest, the use of natural resources and many other issues.

I want to end with a final observation. There is a tendency in contemporary research towards fragmentation, although ICT has offered more opportunities for integrated and holistic approaches than ever before. It is mostly due to how we reward researchers. We count their publications in a mechanic way independently of the breadth and depth of their findings. Global Systems Science offers an alternative to this sorry state of affairs, a way of building a broader more holistic understanding of the world we live in.