Quaderni del Festival

14

Nouriel Roubini

The Financial Crisis: Past, Present and Future

festival ECONOMIA trento

FESTIVAL dell'ECONOMIA 2010

Finito di stampare nel maggio 2011
da Esperia srl
Lavis - Trento

I Quaderni raccolgono interventi di relatori di prestigio internazionale che hanno partecipato al Festival dell'Economia di Trento.

Sono volumetti a disposizione del pubblico, che si leggono d'un fiato e compongono una piccola biblioteca del Festival.

Fra i suoi scaffali sono ospitate le voci autorevoli di studiosi di diversi saperi a testimonianza di una caratteristica importante del Festival, la sua natura interdisciplinare, la sua volontà di accogliere e riflettere insieme sul nostro presente senza steccati, senza ideologie precostituite, senza dare nulla per scontato.

Il Festival dell'Economia non è solo infatti un evento di successo, che riempie le piazze della città e le piazze della comunicazione.

È soprattutto una scommessa intellettuale che vuole far uscire l'economia dalle aule universitarie, mettere in gioco le conoscenze, mescolare i saperi e le esperienze per incontrare un pubblico curioso di comprendere in prima persona il suo futuro, il mondo e le dinamiche che lo governano.

THE FINANCIAL CRISIS: PAST, PRESENT AND FUTURE

TITO BOERI As you know, in Italy economists have often been accused of not having foreseen the crisis. At the «Economists on Trial» session held last year, one of the various counts of which we were found guilty was also the failure to foresee the crisis. Personally I believe that a more precise charge which could be levelled at economists is the failure to understand what the critical factors were and the possible propagation of certain shocks, because shocks are by definition something which cannot be predicted. An accusation of this kind can certainly not be directed at Nouriel Roubini, because Nouriel was the economist who more than any of us came closer to understanding the factors underlying

the crisis and to some extent, setting off an alarm bell, without fear of swimming against the tide. On 7 September 2006 Nouriel made a speech at the International Monetary Fund (IMF) in which he underlined strongly the risk of a specific sequence of events in the United States: first of all the bursting of the property bubble in the United States, the fact that this would bring with it a series of crises on the financial markets, the possibility of a shock relating to petrol, a decline in consumer confidence and thus a very severe recession for the American economy. When he made this speech at the IMF it was greeted with considerable scepticism. Many of those present looked at him with the superior attitude of those who believe that all things considered, such predictions were highly improbable. On the other hand, we were coming from years of growth for the global economy, in an era which has been defined as the «Great Moderation», in which there was a decline in the volatility of the most important economic series, gross domestic product, unemployment and so on. There were even some speeches, such as the one by Robert Lucas at the conference of American economists, in which he said that all things considered, following policy to reduce cyclical fluctuation and

anti-recession policy, the battle against such problems had largely been won by economists. There was a general attitude that things were more predictable and that we were in a phase which would be much less volatile.

So Nouriel's message was extremely explosive and I must say that when Nouriel then returned to the IMF a year later, this time he was received as a prophet.

In order to understand why Nouriel went so much against the tide, it is perhaps useful to underline some biographical aspects. Nouriel was born in Istanbul in 1958, then he moved first to Teheran with his family, then to Tel Aviv, so in some ways he has always been an outsider in the places he has lived, because he was there for such a short time. Then he came to Italy, where he spent an important part of his life and gained an important part of his education, studying at the Bocconi University. I would like to be able to say that it was thanks to his education at the Bocconi University that he acquired the talent and skills that allowed him to understand the crisis better than others. Unfortunately, I am a researcher and I cannot fail to make some comparisons. I also studied at the Bocconi at

the same time Nouriel was there and so if we make a comparison and look at the differences between the two of us, with him predicting the crisis and myself instead failing to do so, then the Bocconi factor would seem to disappear in terms of the logic of the difference among differences. It is therefore likely that other factors were important for Nouriel, such as the PhD acquired at the University of Harvard with the supervision of Jeffrey Sachs, who among other things had studied the crisis in Latin America in depth. Then he gained experience at Yale with Robert Shiller, who is perhaps the economist who best understood the role of the property bubble. In addition to this, Nouriel added other factors, above all the in-depth studies that he carried out on major national crises taking place in the 1990s, the Mexican crisis, the crisis in Thailand, the Russian and the Brazilian crises, to name but a few.

Nouriel Roubini is consulted at congressional hearings on a routine basis and he is an economist who has gained authority at global level. As you can imagine, his agenda is very full. The book he has just written, also translated into Italian with the title *La crisi non è finita*, was, he told me, practically written while travelling on planes, because it is the only

time he is not connected to the internet. When he is connected to the internet he manages a very influential site, which is the RGE Monitor. Among other things, I would like to remind the Trentino public that we had already invited Nouriel in 2006, even before he acquired the huge notoriety he has today, and on that occasion he participated only virtually, appearing on screen to talk specifically about online information. Subsequently we have always tried to invite him and this time we have finally succeeded. The important thing is that he will not only speak about the present and the future, the important thing is the methodological lesson we would like to learn from his reflections on critical aspects, current deficits, the fact that a country lives beyond its means and excessive banking debt. These were the factors that led him to underline the risk of a crisis in the United States and the signals which it is necessary to observe, also for those wishing to start studying economics today , the things that need to be studied more in depth. I think that these are times in which it is extremely interesting to study economics and I believe that the example and work of Nouriel Roubini fully document all this. So I will hand over to Nouriel Rubini.

NOURIEL ROUBINI Tito, thanks very much for your kind introduction. It's a great pleasure to be here today. I attended the festival a couple of years ago, very virtually, but I must commend Tito and all the other organisers for organising such an exceptional event year after year.

One of the themes of the financial crisis I'll discuss today is the fact that, quite broadly, there is a meaningful lack of economic and financial literacy among the general public, among policymakers, among the press and some people say even among economists.

Therefore I think it is important to think about why economic and financial crises occur.

If you take the book I recently published there are two titles. The title of the English edition is *Crisis Economics* and the title of the Italian edition says *The crisis is not over yet*.

I think that both titles actually reflect something very important that I want to stress today. The point about the crisis not being over is that, as we have seen the turmoil in the financial market in the last few months in Greece, in Portugal and in Spain and other parts of the euro zone, there has been a transformation of this financial crisis, which started from a problem in the private sector, to a financial crisis

now, where debt and deficit problems in the public sector in most of the advanced economies is becoming a serious problem.

In that sense, there's been a morphing of the crisis from private debts to public debts for reasons I'm going to discuss; that's the sense in which the crisis is not over.

Why a book about crisis economics? You know we have books about macroeconomics, books about microeconomics and books about international economics and so on.

Usually there are no books about crisis economics. Why? If you take the standard textbook on the economics of macro issues there is barely even a mention of the economic and financial crisis. There is a little bit of a talk maybe in some chapters about the boom and bust of the business cycle, sometimes the economy goes up, sometimes it goes down and there are recessions.

But what is happening as an episode of financial crises is something quite different from Europe's traditional recession. Financial crises are a very different phenomenon and beast, and what I find is that, again, in terms of economic and financial literacy, the fact that no textbook of economics devotes

a single chapter, let alone more than one to the issue of economic and financial crises, is something of a lack. So this is a contribution to trying to understand why we have to know about financial crises, what causes them, what their consequences are, whether they can be prevented, predicted and so on.

That's the range of topics that I want to address and in that context the way I think about financial crises is a little bit different from the traditional way.

In the first chapter of my book I talk about financial crises as a white swan event. What do I mean by white swan event? As you might know there is a very famous book by a good friend of mine, Nassim Taleb, called *The Black Swan.* What's the story of the black swan? As you remember, for hundreds of centuries everybody thought there were only white swans, until suddenly, I think somewhere in Australia, a few hundred years ago they found a black swan, something that nobody believed could exist. The way Nassim Taleb thinks about reality, and also economic reality, says that reality is not a distribution of events along a normal distribution, but it is a distribution of events in which there are always fat tails, events that are very extreme are not occurring

with very low probability, but they can occur with very high probability.

In that sense financial crises are black swan events, both because they occur more frequently than otherwise and the consequences of them can be very damaging. And if you think about financial crises as a black swan event, in some sense you get to think of them as random events that come out from a distribution that has this fat tail. So it's more like a earthquake or like a storm that could not be predicted.

Why do I call financial crises instead «white swan events»?

Because by studying them, and in the book the study is not just of these recent financial crises, there are chapters in which my co-author and I go back to even Tulip mania, or the eighteenth century, nineteenth century, you know, economic and financial crises were a common asset bubble, boom and bust of financial economic activity and all the way to the last century, where from the Great Depression to the last thirty years there have been episodes of financial crises, both in advanced economies and emerging markets.

If you take just emerging market economies for the last fifteen years you had a crisis in Mexico

in 1994, the East-Asian crisis in Thailand, Malaysia, Indonesia, and Korea in 1997 and 1998, that emerging market crisis becoming global by the summer of 1998 with the collapse of Russia. Then there was an attack on Brazil and the attack of Brazil collapse in January 1999 and there was turmoil in Turkey, then in Argentina. Then there have been other crises in places like Pakistan, Ukraine, Ecuador and even smaller emerging market economies. Look at the history of the last twenty years. There's a whole series of very frequent financial crises in emerging markets and when you look at the history of advanced economies, it's the same story. We had the stock market crash in 1987, we had the banking crisis following a housing bust in the US in the late 1980s that led to a banking crisis and economic recession, in a long crisis in the early 1990s, with the tech bubble in the 1990s then going bust, with a severe bust of tech stocks in 2000-2001 and then with the 2001 recession.

Then we created this housing and credit and subprime bubble that led to a slightly bigger recession in 2008, in 2009 it became global. There was the financial crisis in Japan, when the bursting of their equity and housing bubble in the early nineties led

to a decade of economic stagnation, deflation and even depression; there was the crisis in Scandinavian countries, Sweden, Norway, Finland; the currency crash of the European monetary system in 1992 and 1993; the exit of the Pound from the monetary union or the speculative attacks against the Italian Lira, or the Swedish Krona, the French Franc. There have been a number of other episodes of banking crises in advanced economies.

So crises, first of all, are not a rare event. When people talk about the crisis and say «We could not predict it», they say this is an event that occurs only once every fifty or hundred years and this is a event, that is a 50-standard deviation away from the mean of a distribution. If you want, use a technical statistical threshold, something so extreme that is so random that it should have never happened. If you look at the history of both advanced economies and emerging markets in the last twenty years, you see these crises occur very regularly. Emerging markets had them almost every other quarter in the last decade or so and they even occurred quite frequently in a wide range of advanced economies. The last three US recessions, for example, were caused by a massive bubble and bust.

The real estate bubble of the eighties went bust with the recession in 1991; the banking crisis and tech bubble went bust in 2000; there was a recession in 2001, and then this latest housing and subprime bubble went bust, causing a severe recession in the last couple of years.

The last two or three US recessions have been associated with financial crises and asset bubbles getting out of hand and going bust.

So first of all these crises occur much more frequently than just extreme events. The second point that I want to make here is that crises are not just random unpredictable events like earthquakes, they are predictable.

As I'll discuss in more detail, financial crises are the outcome of a build-up of economic or financial or policy vulnerabilities and risks that build up over time and at some point reach a tipping point. Therefore they are not random events, they are not black swan events or random earthquakes that you cannot predict. Actually they're man-made, they're not acts of God or acts of nature. They are certainly predictable and when you look at the history of financial crises through the centuries and up to recent times in both advanced economies and emerging markets,

there are many similarities and patterns in each one of them. There are also differences, but the similarities in some sense are greater than the differences.

So first of all they're predictable, and because they're predictable they're also in my view preventable and that's an important point I try to make this way, today. They are not just random events that we have to accept, because if we think about the costs of economic and financial crises, these costs are becoming severe, these crises are becoming more frequent, they're more virulent and the economic and social and financial damage caused by them is becoming more extreme.

Think about how much output fell in so many countries around the world, think about how many people lost jobs, think about how many people became unemployed, think about the losses not just of income and of jobs, but also of wealth. In the US alone, the value of homes fell 30% from the peak, in many other countries you had a housing bust, globally stock prices fell by more than 60% from the peak.

So there was a loss of income, of jobs, of wealth and not only that, but also the cost of cleaning up the mess, the cost of bailing out banks and other finan-

cial institutions, the cost of bailing out households and sometimes even corporations has become also staggering. One of the reasons we now have such a large budget deficit and public debt problem in many advanced economies is that we socialize these private losses, we put them on the balance sheets of governments and therefore those are additional costs in addition to the short term losses of income, jobs, wealth and so on.

And of course there are the social and political consequences of a financial crisis; they lead to social turmoil, they lead to political turmoil. Look what's happening today, for example, in a country like Greece, where you have riots, where you have violence in the streets, people even died, demonstrations, strikes. And this is just the tip of the iceberg, of the social and political turmoil that is going to come from the severe consequences of economic and financial crises. So the damaging effects of crises are huge, therefore they're predictable, therefore they are preventable.

We follow the write-ups of policies, they can be prevented and therefore the way I think of them is as a white swan event, as opposed to a kind of a black swan event.

Now if I have to summarise the common features of many of the financial crises I would argue the following things: in many of these financial crises there is first a period of economic boom that precedes the economic bust; there is often an asset bubble in some asset price, this asset bubble can be an asset bubble in housing and real estate, it could be a housing bubble in equity markets, it could be a housing bubble associated with new technology, the railroads or internet and others, that then leads to the bubble.

By asset bubble I mean a situation in which the market price of a certain asset goes well above its own long term economic fundamental, so there is a deviation of prices from their own fundamental value and that's already a significant source of market failure. The traditional, neoclassical economic model suggests that current prices of all assets reflect all information available today about the fundamentals, about that asset in the current time and in the future. So conceptually, the traditional efficient market hypothesis says there is never an asset bubble. I think we have recognised in the last few decades that there are asset bubbles that because of irrational exuberance, because of policy distortions, because of things that have to do with market

psychology and behavioural finance, asset prices can deviate away from their economic fundamentals. For example in the 1990s tech stocks were doubling in value every year and there were people saying that this was actually justified by the fundamental. It took the bust for us to realise that it was a bubble; in the last decade people said that home prices can increase in value every year by 20-30%.

That was again a bubble only after the fact and we realised that. So often financial crises start from a situation in which there is an asset bubble and a disastrous bubble is then often associated with a very sharp increase in the amount of debt, accumulation and leverage; debt and accumulation of leverage by household sector consumers, financial institutions and also the corporate sector.

Why does this accumulation of debt and leverage occur? For a number of reasons, in the case of households, for example, when the value of your asset, your home, goes up, as in the United States, you want to use your home as a collateral against borrowing and the argument has been made in US in the last decade. Consumers were using their homes as an ATM machine, borrowing in the form of home equity withdrawal, spending more by con-

suming more than their income and by borrowing against their housing wealth. So you have a process of increasing household debt, mortgage debt and consumer debt, credit cards, student loans, auto loans and other forms of leverage of the private system. Secondly, there is an increase in the amount of leverage of the financial system in many of these bubble episodes for two reasons: one is because the demand for credit from the household sector leads to an increase in the amount of credit created by the financial system; two, looser regulation and supervision of financial institutions and easy money and easy credit allows these institutions to de-leverage themselves too much. Again since the value of the collateral, the value of the asset is going up, the financial institutions believe that they can borrow and lend more and more than ever before, because the assets against which they are lending, for example homes, are increasing in value, or assets such as the equity values of tech stocks are rising in value.

So you have a leveraging up of the household sector, you have a leveraging up of the banking and the financial system and often you also have a leveraging up of the corporate sector. When there is technological innovation, that technological boom leads to a

huge amount of resources going to those sectors, the resources going to that sector can be financed either in the form of equity or in the form of debt. When it's in the form of debt, you also have a leveraging up of the corporate sector. So you have this build-up of risk-taking, this build-up of debt and the build-up of leverage; and that's occurring while there is an increase in the asset price. You start with an asset price boom, it becomes a bubble and at some point something triggers the reversal of this process.

Usually when the price doesn't rise anymore and you have just a correction, prices fall, demand for homes falls, quantity falls and then you have this spiral down. You hear the bust and the crash and in the bust and crash, the value of your underlying asset is falling, while your debt is remaining the same. You cannot pay off your debt any longer, because the value of the underlying asset has fallen. You have the unraveling of the asset bubble and the unraveling of the leverage, leading to a credit crunch, and that credit crunch then leads to economic crisis and recession, with falling demand, falling output, falling consumption and falling investment.

This is a kind of very schematic characterisation of the boom and bust, but it is a feature of many

of these financial crises. Now, why do these crises occur? Who are the culprits? Who's to blame? The answer is that there are many different ones, you cannot just blame one set of individuals.

Certainly in many of these financial crises, including the last one, monetary policy is easy. For example, in the US the Federal Reserve, after the bust of the tech bubble, pushed down interest rates to one percent and kept this interest rate for too long. That created easy money, easy credit, that encouraged the housing and sub-prime bubble. That's one source, so easy money and easy credit is a dangerous thing.

Secondly, there was lax supervision and regulation of financial institutions. The ideology in many Anglo-Saxon countries was to adopt a laissez-faire approach to the financial system, where even prudential regulation and supervision of the financial system was not performed. Greenspan and the FED had the power to regulate mortgages; they decided not to do it. So regulators were asleep at the wheel.

Thirdly, there were major distortions in the behaviour of agents in the financial industry, traders and bankers. These distortions derived from the way in which these bankers and traders were being compensated.

If you took a lot of risks, if you did a lot of leverage, made risky investments and originated toxic securities, in the short run the revenues and profits for the financial system were large and the bonuses that these traders and banker received were also very large. But then these investments turned out to be toxic. When they went bust the financial institutions would take the losses, the damage and in some cases become insolvent, while the worst that could happen to the traders was that he or she would not get their bonus.

So a system in which you had only bonuses without a clawback of those bonuses ex-post, if the investment was too risky, created excessive risk-taking, excessive amounts of leverage. A lack of proper corporate governance and the system of paying bankers and traders created these distortions.

Of course, there are other culprits. It was not just the FED and the regulator; it was not just Wall Street and the City. The rating agencies had massive conflicts of interest by being essentially paid by those they were supposed to be rating and being involved in a process that led to misrating of these new toxic securities.

So when you look around, you see a number of factors that derive from and lead to the disastrous

bubble and eventually the bust. And one of the features of financial crises is that after the fact, people ask also the question «How come nobody predicted it, apart from a very few economists?».

You know, I and a number of other people gave early warnings about this financial crisis. But the interesting question is not why Nouriel Roubini or Steve Roth or David Rosenberg or Nassim Taleb or Ken Rogoff got it, why a minority got it, the most important question is «why the majority of people in society did not get it?».

My answer is that whenever there is an asset bubble people live in a bubble and behave as if the bubble can continue forever.

For example, in the United States, US consumers could spend more than their income, as I pointed out, by using their homes as an ATM machine and they were happy, there was economic growth, there was consumption. The politicians and policymakers were happy, because the economy was growing very fast, excessively because of a credit bubble and they were getting re-elected. The traders and the bankers and Wall Street and the financial industry were very happy because they were making gazillions of profit by creating all these toxic securities, mort-

gages, RMBSs and so on, which were a source of high profit for them, and the rating agencies were getting most of their profits by rating these toxic and new exotic instruments. Whenever there is a bubble, society overall also lives in a bubble. Even the press start to believe that things that are not sustainable can be sustained, you start having covers of every magazine talking about the imperial CEO, how brilliant and genial the CEO of a bank or financial institution is, and he's making billions of dollars of profits, not realising that those profits are based on a house of cards.

So the press also feeds the bubble and starts talking about home prices rising forever, while of course there's also a failure of experts, whether these experts are Wall Street economists or other economists, also academic economists. We think about crises being an exception rather than a rule, we don't understand them and there's not enough financial literacy and economic literacy among the wider public, the press or even among the experts and therefore people start to believe things that are unbelievable.

I think that from a market psychology point of view, the reality is that when there is a bubble

there is irrational exuberance and everybody lives in a bubble and everybody on the way up benefits from the bubble. Of course eventually the bubble bursts, and then there are economic and financial costs, disaster, recession, crises, followed by a reality check, but the phenomenon is typical, it has to do with the market psychology and in some sense people don't seem to be learning.

For example, today we're back to business as usual, on Wall Street, proper trading, risk taking, bonuses that are outrages. Why? The average trader does not even remember, for example, the recession of 2001 and the tech bubble, let alone the previous ones.

There is a sense in which we are not learning from history and that's why I think that books like mine and others that tell you financial crises do occur repeatedly over time, that they're predictable and not random events, can increase economic and financial literacy. That's why I think that events like these, like the festival, really can educate people about things they should know about, because there is not enough economic and financial literacy, leading people to believe in bubbles that will eventually burst.

So there is also an element of knowledge, information, analysis and understanding.

That's the kind of context in which we have to think about economic and financial crises. Now, if I have to say and relate these analyses about the past to some of the current events and to some of the future challenges in the global economy, I would like to make the following observation.

As I pointed out, this financial crisis, like many others, was originally driven by excessive debt accumulation in the private sector, as I pointed out: households, banks, other financial institutions, even a fat tail of the corporate sector in a number of countries, like the US, or the euro zone. And while today there is a lot of talk about de-leveraging, when you look at the data you see that this process of de-leveraging of the private sector has barely started. The high debt ratios of the private sector are now stabilising at a very high level, as a share of GDP they've barely started to fall, because the process of reducing debt and saving more has barely started in the private sector and instead what we have observed for last two years has been massive re-leveraging of the public sector.

We have budget deficits of the order of 10% of GDP in most advanced economies and the official IMF and OECD estimates suggest that, by the year

2015, the average public debt-to-GDP ratio in the advanced economies, this is the average, is going to be about 120%, up from about 70% before this crisis, so almost a doubling in the share of public debt as a share of GDP. And in some countries, such as Italy or Greece as we know, that debt-to-GDP ratio is already above a 100% today and expected to become much higher in the next few years, especially in Greece.

So why did this massive re-leveraging of the public sector occur and what are the consequences? And that's the sense in which the crisis is not over, but now we're in stage 2 of a crisis that started in the private sector and has become a sovereign debt crisis. There are three reasons why budget deficit and debt have risen sharply in the last two years.

One is automatic stabilisers, whenever there is a recession; income falls and government revenue linked to income also fall. There is less tax revenue on labour income, for example, so that's an automatic process without changes to fiscal policy.

The second way in which there is an automatic stabiliser is that whenever there is a recession, some components of spending automatically go up for the government. Things like unemployment benefits,

for example, automatically rise because more people are unemployed.

So the first factor is automatic stabilisers, while the second factor that led to the increase in deficit and debt is that during the crisis there was a freefall in private demand. For two or three quarters in the US and around the world there was literally a collapse in consumption demand and capital spending, of real investment by the corporate sector.

If you look at the data for the fourth quarter of 2008 and the first quarter of 2009, it was literally tracking the Great Depression, in terms of how much output, production, demand, exports, imports and employment fell; it looked like we were on the way to another Great Depression.

What was the policy response to this freefall in private demand?

We needed a counter, cyclical, fiscal Keynesian stimulus. We needed more government spending, in order to find a way to increase transfer payments, increase subsidies to the private sector and reduce taxes to prevent this Great Recession of 2008-2009 from turning into another near-depression or another Great Depression.

So that was the second factor that led to the sharp

increase in budget deficit and public debt. The third reason for this sharp increase in public debt has been this socialisation of private losses. Essentially we decided to transfer the losses in the private sector to the balance sheets of governments.

Most of them have been the fiscal costs of bailing out banks and other financial institutions, and these fiscal costs have been very high in the United States, the United Kingdom, Spain, Ireland, Iceland and in other countries that saw major financial institutions going bust. Even in other countries in Europe such as France, Germany and Belgium, for example, where the fiscal costs were not so high, a number of financial institutions went bust and were rescued and that once again increased the fiscal losses for the government.

And it was not just the bailout of financial institutions, but in a number of countries we've also seen partial support for some other components of the private sector. For example, financial support to households in distress in the United States or the UK, or in some cases, the government even decided to bail out corporations. Look at the policy response around the world to bailing out the auto industry, in the case of the US Chrysler and GM, or other types

of financial support from governments even in the euro zone to some auto manufacturers.

We socialise private losses, mostly those of the financial system, but sometimes also of the corporate and household sector and these are therefore added to the stock of public debt and deficit.

So these are the three factors that have led to this massive increase in the amount of public debt and budget deficits.

That's is the sense in which I argue in the book that the crisis is not over. We started with private debt and now we have very large stocks of public debt.

Now, what's going to happen from here on?

The first observation I'll make is that what's happening today in Greece is only the tip of an iceberg or a kind of proverbial canary in a coal mine.

These types of deficit and debt problems exist not only in Greece, but also in Spain, Portugal, Ireland, Italy and other members of the euro zone, but they also exist in other countries. They exist also, for example, in the United States, Japan and the United Kingdom.

There are also very large budget deficits in a number of Central and Eastern European countries. The other day the market became nervous about Hungary,

but there are large budget deficits and a need for fiscal austerity in the Baltic states, in Latvia, Romania, Bulgaria and a number of other countries, including Ukraine, so there's a whole range of emerging market economies, especially in Central Eastern Europe that also have the same problem of large fiscal deficits.

It's a broader phenomenon. It's not just Greece; Greece is just the tip of an iceberg.

So that's the first observation. And while the bond market vigilantes have today woken up in Greece, Spain and Portugal, they've not yet woken up in the United States, the United Kingdom or Japan. Even if the US does not resolve his trillion dollar budget deficit a year, eventually, a year from now, two years from now, or at some point in the future, the market's going to worry about the United States, because even the United States is on an unsustainable fiscal path. It's not just Greece. The budget deficit of the US this year is going to be 11% of GDP, Greece's deficit is 13% of GDP. The United States is going to have a stock of public debt of 90% of GDP in a matter of two or three years.

So these are broader phenomena that affect most of the advanced economies.

Now, if I had to be a little more specific about

the outcomes of these fiscal crises, there are a number of different alternatives. Probably the right way to address these unsustainable budget deficits and debt is to gradually cut government spending over time, when government spending is excessive, and increase revenue, taxes, so that you reduce the budget gap and avoid an unsustainable fiscal situation. That's what needs to happen.

Suppose that debt fiscal adjustment and austerity does not occur and the country keeps on running a large deficit, then what's the outcome?

It depends very much on the situation of a particular country. In some countries, the country has access to the option of monetizing the fiscal deficit, essentially meaning that central banks buy the debt of the government, printing money to finance its budget deficit. So countries like the United States, the United Kingdom and Japan have the option of monetizing this deficit and that means that these countries are most likely not going to face a sovereign debt crisis, they are not going to default on their public debt, because they have the option of monetizing.

Of course monetizing this fiscal deficit is eventually going to lead to inflation and inflation is a tax that reduces the real value of public debt, with

transfer of wealth from creditors and savers to debtors and borrowers like the government. It is like a tax, but it is an inflation tax, it is not decided by Parliament or by Congress.

Suppose, instead, that they don't have the option of monetizing, suppose that you're a country like an emerging market economy that borrows in a foreign currency, then you cannot inflate away the real value of your foreign currency debt and if your fiscal problems are not resolved, you're going to default. It happened in Argentina, it happened in Russia and it happened, for example, in Ecuador.

Governments default from time to time, when their debt is unsustainable.

What about the members of the euro zone? The interesting thing about the members of the euro zone is that, technically speaking, the members of the euro zone borrow like the United States in their own currency, but unlike the United States they do not have automatic access to the printing presses of the central bank.

In the euro zone you have sixteen separate fiscal authorities and you have one central monetary authority, the European Central Bank, and the

European Central bank is committed, because of his rules, to not monetizing these fiscal deficits.

So that means that if – and I am just saying if, I'm not saying for sure – if a country like Greece were not able to resolve its fiscal problems by raising taxes and cutting spending, then the only option is default or an orderly restructuring of that public debt. So you look more like an emerging market economy, where you don't have the option of essentially monetizing your fiscal deficit.

This is the range of policy options that are available if these fiscal problems are not addressed.

And by the way, if there is a fiscal crisis and a financial crisis, then this of course has negative effects on the real economy. The debt of the government is held by households and by financial institutions, and if a government defaults on the losses that the financial institution incurred on that public debt, it can make the credit crunch more severe and lead to another recession.

You could have a cycle in which the financial crisis starts in the private sector, then the private losses are socialised and we have a public debt problem. If you don't resolve the public debt problem, leading to default, the losses are then imposed on the private

sector eventually leading to a more severe economic downturn, like a double-dip in the private sector.

After all, public debt is always private debt, because public debt has to be serviced through some form of taxation or some reduction in government spending. So putting private debt on the balance sheet of the government is not a solution to the problem, it's just socializing those private losses that will eventually have to be dealt with one way or another.

So that's one of the first observations.

I would now like to make another point relevant to the euro zone, after all we are now in Italy, we are in the euro zone where there is a significant amount of financial turmoil. I want to address the following question: just a few weeks ago, there was approval by the EU and the euro zone and the IMF for a huge bailout package available not just to Greece, but potentially to any other euro zone member that could get into trouble. Therefore Spain, Portugal or any other country could qualify for it. The numbers are staggering; the bailout could potentially be 750 billion euro, which in dollar terms is approximately one trillion dollars.

Just to give you an idea, I was involved in the financial crisis of emerging markets. In 1997 Korea

got only ten billion dollars, today a small country like Romania, which has a GDP share ten times smaller than Korea, is getting an IMF programme that is more like twenty-five billion dollars.

Greece got an IMF programme of one hundred and ten billion euro from the IMF and EU. That's a hundred and fifty billion dollars, whereas the biggest IMF package for the emerging market was thirty billion dollars for Brazil in 2002. These IMF packages, which used to be ten billion in normal times and thirty billion at maximum are now a hundred and fifty billion, for a country like Greece, and a trillion for the euro zone, so the scale of these bailouts has got much larger.

But think about it. They announced a trillion dollar bailout package, the market went up for a couple of days and since then everything has gone to pot; stock markets have kept on falling, the euro zone and the value of the euro has continued to fall; the credit spread, namely the difference between the interest rate on corporate bonds and government bonds, has widened, both for high yield and high grade; there is a liquidity crunch in the interbank market and the interest between LIBOR, namely what banks lend to each other, and the interest rate is widening as a sign of a liquidity crunch. We have

every financial indicator getting worse. So why does not even a trillion dollar bailout help?

What's going on in the euro zone?

The first observation I'll make is that first of all, this money is not coming free; it comes with a huge number of EU and IMF conditions. If these countries are not able to make the fiscal adjustment and structural reforms that they have to commit to, the money is not going to come; so it's not guaranteed, it's conditional, like any form of IMF and EU conditions. The second concern of the market is whether we can really believe that a country like Greece, Spain or Portugal is going to be able, socially and politically, to make the kind of fiscal adjustment that is required of them.

In the case of Greece, they're supposed to reduce their budget deficit by 10% of GDP from about 13% to about 3%. You already have riots, demonstrations and strikes in the street in the case of Greece. The same thing is starting in Portugal and Spain.

Spain has barely started its own austerity programme, the first round of austerity measures was passed with a majority of one vote and more austerity has to come. The chances are that the current government in Spain is going to lose its majority, as

members of the coalition are not going to vote for greater austerity.

So the government in Spain could collapse in the next year and the same thing could happen in Greece. So, the markets are saying «We don't know whether you're going to be able to deal with that much fiscal austerity». 10% of GDP, or 6-7% of GDP in Spain and Portugal; that's one question mark.

An additional question mark is the following: suppose that some of these governments are committed to fiscal adjustment, then what will be the consequences in terms of economic growth and the level of output?

While it's obvious that if the debt and deficit of the country is unsustainable then you need fiscal austerity, because if you do not take action you're going to have fiscal train wreck, in the short run, however, raising taxes and cutting government spending reduces economic activity, leading to a recession and the recession becomes more severe. And if fiscal authority leads to a recession, there are two problems with this: the first problem is that austerity becomes unacceptable socially and politically because people are not going to accept austerity if there is continued

recession; the second problem is that you're supposed to stabilise your deficits and debt as a share of GDP, but if your GDP is falling, achieving those targets becomes a 'mission impossible', you enter a vicious circle. That's exactly what happened in Argentina, between 1998 and 2001, where there was a budget deficit. They kept on raising taxes, they cut spending, the recession became worse and achieving that stabilisation of debt became a 'mission impossible'. So that's the second problem.

The third problem that we have to address is the following: if you look at the periphery of the euro zone, countries like Spain, Portugal, Italy and Greece, they not only face a problem of the large amount of public debt and of budget deficit, they also have another huge problem, namely the loss of external competitiveness and therefore the loss of economic growth. Why do I say that? These are countries that ten years ago or more were already losing market share to China, Asia, Turkey and Central and Eastern Europe, because their exports tend to be mostly labour-intensive and with low added value: textiles, clothing or other types of labour-intensive exports that are now much more cheaply produced in Eastern Europe or Asia.

A second problem was that for almost ten years we had wages growing much more than productivity, and when wages grow more than productivity, unit labour costs rise and that leads to a loss of competitiveness. The real exchange rate based on this unit labour cost was rising, and this loss of competitiveness manifested itself in large and growing trade and current account deficits. In the case of Greece and Spain those deficits were of the order of 10% of GDP, while the final nail in the coffin for the euro zone was of course the very sharp appreciation in the value of the euro occurring between 2002 and 2008. So in addition to public debt and deficits, now there is the huge increase in the external deficits of the country, and those external deficits imply a sharp rise in liability not only for the government, but also for the private sector. In Spain, Portugal and Greece not only are there debts of the government held by non-residents, foreigners, but also debts of households, banks, the financial system and corporations, so you have private and public foreign debt that is rising and in some cases becoming unsustainable. So if you have a problem of competitiveness and growth, how are you going to restore that competi-

tiveness and growth? That's the dilemma that the euro zone member countries are facing.

One option of course is to exit from the monetary union and that could happen. I don't say it is a done deal, I don't say it is probable, but there is a scenario according to which in the next three to five years some of the weakest members in the euro zone, starting with Greece, could decide that it's not sustainable to stay in the monetary union, that the only way to restore their competitiveness is to give up, abandon the Euro and go back to a new drachma. That's a possibility. It's not a desirable option in my opinion, but let's be realistic, it's a possibility, the probability is no longer zero. It's not 100%, but there is certainly an increasing probability.

But suppose you want to avoid the breakup of the monetary union, because you think it's going to be damaging, with financial contagion and panic spreading to other members of the euro zone. What can you do then?

There are a couple of options, but they're not very viable: the first option is to have deflation for four or five years, meaning you have a reduction in prices and wages in the country in order to reduce unit labour costs and regain the competitiveness that

was lost when prices and wages were rising. But if you think about it, deflation cannot be a solution, because whenever you have deflation you have a recession, so no country in the world can accept five years of recession and five years of deflation in order to achieve the reduction in prices and wages that restores competitiveness. Again, Argentina tried the route of deflation and after three years of recession they decided to go bankrupt, default and devalue. So the deflation solution to the problem of competitiveness is not politically and socially acceptable, because it means many years of recession and ever deepening recession.

What's the alternative solution?

People say that Greece, Portugal, Spain and Italy should follow the line Germany took. Germany accelerated structural reform and corporate restructuring, increased productivity and growth, while maintaining a cap and a lid on the growth in wages. If you have many years during which productivity is rising more than wages, over time your unit labour costs will fall and you will restore competitiveness.

Now guess what? It took about ten to fifteen years

for Germany to achieve that increasing competitiveness and reduction of unit labour costs.

Suppose that Spain or Greece were to start those structural reforms today, you would see the benefits in maybe five years from now. In the short run actually there would be additional losses.

Why? In the short run, when you have a corporate restructuring it means firing more workers, closing down unprofitable and inefficient firms, reducing their resources in declining sectors and moving labour and capital to productive sectors.

That's necessary, but in the short term it means more economic contraction and the benefits only take place over the medium term. It's hard enough to make structural reforms in good times, after all the euro zone members barely implemented the Lisbon agenda even when there was growth, let alone accelerating structural reforms that are costly in the short run in bad times during a recession.

So again the German solution is right in principle, and in principle all these countries do need reforms and I'm not against them, they have to make them regardless, but the benefits of those structural reforms are only going to take place over the medium term, while in the short run you're going to

have a continuing recession and that's not going to be socially and politically acceptable.

So if deflation doesn't work, structural reforms take too much time, however necessary they are, and you want to avoid exiting from the monetary union and its breakup, in my view there is only one other thing that can happen. That is a continued devaluation or a fall in the value of the euro.

The value of the euro in relation to the dollar has already fallen from about one fifty to below one-twenty, in my view it could fall towards parity, if not even lower.

Why do I say that? Think about it, in 2002 and after a mild recession, the value of the euro in relation to the dollar was well below parity, at its lowest it was about 0.82. So we're a very long away from that bottom figure, we're not even at parity.

So if we want to avoid a situation in which some countries are going to have the option of defaulting and exiting from the monetary union, I think that a further devaluation of the euro is necessary, desirable and unavoidable and that over time this can restore some of the loss of competitiveness of the monetary union.

Now in some cases, in my view, we are essentially at the point of insolvency. Take for example a coun-

try like Greece. Even if they make the necessary fiscal adjustment, I think that the situation in Greece is not just one of illiquidity; it is a case of insolvency.

Why do I say that? Suppose they follow the IMF program and make the draconian 10% of GDP fiscal cuts, they are going to have, officially, according to the IMF programme, another three years of recession, after two years recession over the last two years. Eventually by 2014 their public debt-to-GDP ratio will stabilise at the level of 145% of GDP.

Now who can believe that public debt at 145% of GDP is stable? Any shock can lead you to unsustainable debt dynamics. Debt cannot be stability.

So while Greece needs to make the fiscal adjustment, this is not going to be enough, and coercive restructuring of Greece's public debt should take place and may occur next year.

This coercive restructuring should not be disorderly, you can avoid outright default, you can avoid defaulting as in Argentina, Russia and Ecuador.

The model of orderly restructuring of public debt is one that has been applied by a number of governments in emerging markets, namely Pakistan, Ukraine, Uruguay and the Dominican Republic, where there was an exchange offer. Old debt was

exchanged for new debt and the new debt had three features: the maturity of the debt was stretched out by a number of years, the interest rate on the new debt was capped at a level below market value and the face value of the debt was maintained at a hundred cents on the dollar, with the pretence that there was no haircut. Of course there was a haircut, there was a net present value loss for creditors, because stretching maturity and reducing the interest on a debt implies a loss, but that loss is already priced by the market price of these debts, so it's not an additional loss, and if you allow banks to pretend that this debt is worth a hundred cents on the dollar, the banks do not have to take a haircut.

If you maintain the face value of the debt at a hundred cents on the dollar, most banks hold this debt in their «to maturity» bucket as opposed to their «trading books», so today they're already not recognising these losses.

So there are ways of orderly restructuring for the debt of a country that do not lead to a lot of contagion and damage for other financial institutions. There are ways of doing it in an orderly manner, but that means that the EU and the IMF should not kick the count down the road and try to push the problem

into the future. They should try to restructure it in advance.

If you carry out orderly restructuring, things can improve. If you don't carry out orderly restructuring, then eventually default is going to occur and it is will be disorderly, as in the case of Argentina, Russia and other countries.

So to finalise some of the observations I want to make right now, I have spoken a little more specifically about the euro zone, but as I pointed out, the problem of large public debt and deficit manifests itself in most advanced economies. Eventually even the United States, Japan and the United Kingdom could have a fiscal crisis, if they keep on running up very large budget deficits.

And the trade-off we're facing for all these countries is «damned if you do and damned if you don't».

If you take away fiscal stimulus too soon, because you're worried about these deficits, then you end up risking going back into recession and deflation. However, if you maintain the fiscal stimulus for too long and you have run away fiscal deficits, eventually you have a fiscal crisis, or if you monetize this deficit, you get inflation and then eventually another recession, because interest goes up.

So the path for trying to resolve the need for short term fiscal stimulus and medium term fiscal consolidation is a very delicate one, and I would say, all things being equal, that this implies that the fiscal condition will be for more austerity, while monetary policy has to be easier rather than otherwise.

Central banks around the world and the ECB should have easier monetary policy to stimulate demand, given that fiscal austerity is recessionary and inflationary, and should allow, in an orderly manner, a fall in the value of the euro, which will allow restoration of growth. So you have to have fiscal austerity and monetary easing, and finally the strong countries in the euro zone, like Germany, should have fiscal stimulus, to sustain demand.

They should increase real wages, as a way of boosting domestic demand and demand for euro zone goods and services. It's not enough to talk about fiscal austerity.

If you have fiscal austerity and continued recession, eventually social and political systems are going to resist and stop that austerity and you will have a financial crisis.

You have to have a path that leads to fiscal austerity but also economic growth, and that path requires

structural reform, easier monetary policy and weakening of currencies, while stronger countries, like Germany, need to change their policy to stimulate domestic demand and fiscal demand, as other countries implement fiscal austerity.

If we do these things and do so in a coordinated way, we can avoid the disorderly collapse of the monetary union and another double-dip recession in the euro zone.

If we don't do this, there's going to be a second round of this financial crisis and it will be worse than the first one.

Similar kinds of problems will also be faced by other advanced economies.

I'll conclude here because I've already said many things, but I wanted to put into context not only past financial crises, but also the current economic and financial position, with some of the risks and volatility that advanced economies are facing now with the surge in public deficit and debt, as a way of putting the past, present and future of economic and financial crises into context.

TITO BOERI There is an expression we have in Italy to describe in some way the difficulty that govern-

ments have in implementing this strategy. We call it the art of «punta tacco», (heel-toe), on the one hand achieving fiscal consolidation and on the other succeeding in stimulating the economy. This is very difficult balance for governments to strike today.

As I said before, Nouriel's presentation was also a methodological lesson. I believe that by listening to him we have understood many of the things which led him to understand the origin and mechanisms which subsequently led to the crisis.

On the one hand, the need to bear in mind systemic interdependence and systemic risk. It is a very important fact that many financial analysts, those evaluating financial instruments and rating agencies did not take account of these systemic risks.

Today we have indeed seen careful reflection on these aggregate risks. Those wishing to study economics must study macroeconomics in this way.

The second methodological lesson regards the need to always take account of extreme events, those that have a limited likelihood of happening.

This may involve sacrifices. In the last few days I have read that many are complaining about the fact... the reactions to the question of the Icelandic volcano were excessive. We blocked planes and flights,

also with very high economic costs. Well, taking into account these extreme events means being ready to make these sacrifices because there may be negative events. Clearly one can take action to try and reduce the costs, but this also implies sacrifices.

Finally, an awareness of the fact that there are very inefficient markets. There is a story that Nouriel recounts in his book about an economist and his friend walking along a street and at a certain point they see a 100 euro bank note on the ground. The economist's friend is about to pick it up, but the economist stops him and says «no, it's not worth making the effort. If it were really a 100 euro note someone else would already have picked it up».

It was Nouriel who has accustomed us to seeing these three things, the inefficiency of the markets, systemic risks and the likelihood of extreme events, all together.

QUESTION FROM AUDIENCE What can happen with the real estate market in a country where there is recession and deflation?

QUESTION FROM AUDIENCE Recently there has been much talk of toxic books and also of problems regar-

ding the theory for approaching economics. You yourself talked about changing our paradigm of growth, the way in which we look at economic growth. You also talked about the fact that it is necessary to have adequate policy for economic growth, otherwise we will not come out of the crisis. In particular, among the things I have read recently I particularly appreciated two professors from the Bocconi, Amato and Fantacci, who wrote in a recent book, published last year, that perhaps it is time to distance ourselves from capitalism, even if this does not necessarily mean having to abandon finance or the market economy.

I indeed wanted to ask what your position is in relation to this problem and this type of discussion or whether on the contrary you believe, as another eminent Italian professor has written, also present here in Trento, Prof. Alesina, that we need to keep this system because it is the best.

QUESTION FROM AUDIENCE I would like to ask Nouriel Rubini whether in the equation of potential risks for the euro zone it does not seem to him that he has perhaps put a very strong emphasis on the many negative factors, which are those he explained, and perhaps slightly less emphasis on factors that could lead us to

despair a little less at the moment, while knowing that the risks are high. I'll try and indicate some of these: one is certainly the fact, and this is our fault as journalists, that in Greece we talked about the three deaths in the bank on the first three days of the strikes, we talked less about the fact that the strikes stopped almost immediately. There was only one other several weeks later, and there was about 1/5 less participation on the streets, while in the surveys the government that is imposing these sacrifices is still very strong. In Spain there was not even one day's strike and at all events the public debt of Spain and Portugal for example is lower than that of France and Germany. So certainly in the case of Spain around 50%, while Portugal is around the same level as Germany. There is different budget sustainability.

So there is not just negative news. I'll cram in a few more: one is the margin of privatisation which can take place in Greece, undoubtedly still very high, and I would like to add another. You talked about countries that cannot monetize their debt, but even if we, or above all the Central European Bank is not saying it in these terms, it has actually begun monetizing the debt of some countries in the euro

zone because it has not set any upper limits to the purchasing of public bonds.

My question is this. You talk about restructuring Greek debt within a year as a desirable option. We are talking about a 290 billion public debt, plus the probable debt of banks etc. for half a billion euro, 750 billion dollars. In the end there were some who thought that Lehman Brothers could go bankrupt without having structural effects on the system. Are you sure that restructuring on this scale is manageable?

NOURIEL ROUBINI The first question was about real estate boom and bust cycles and what happens in a recession. The first observation I make here is that people talk about the US real estate bubble and subprime problem, but the fact that the crisis became global has to do not only with the financial transmission of the US shocks to other countries, but the fact that there were financial imbalances starting with the housing market in a number of other countries in the world. You had the housing bubble in the United Kingdom, in Spain, Ireland, Iceland, Dubai, Australia, New Zealand, the Baltic countries and even in places like Hungary and these are, by

the way, many of the countries that eventually got into an economic and financial crisis.

This phenomenon of housing booming and going bust is common to many countries and in all of them you see that when housing goes bust there are negative wealth effects. There are losses for financial institutions, some of them become insolvent, there is a credit crunch, consumers borrowing too much have to deleverage by consuming and spending less and therefore there is a basis of disaster for recession. So to a greater or lesser extent the kind of boom and bust cycle that occurred in the United States has occurred with some nuances and differences in Spain, the UK, Ireland, Iceland, Dubai, Hungary, Latvia and to a lesser extent even in places like Australia and New Zealand.

There are many communalities and similarities. In that sense, crises are again similar rather than different.

I think the second question was whether there is an economic growth model which we should consider.

I think for a long time there has been debate about the merits of the Anglo-Saxon model of a more free market economy, laissez faire kind of approach to

economic affairs, as opposed to the continental, European model of a social welfare state.

Now these crises certainly suggest that the Anglo-Saxon model of a pure laissez faire free market, without even prudential regulation and supervision of the financial system, has clearly failed. There are market failures such as asset bubbles, mistakes in corporate governance, distortions in they way banks are compensated so they take too much risk and leverage. All these market failures imply that this pure laissez faire model is not working.

People say «look, the US and the UK got into trouble, they're in a mess because the Anglo-Saxon laissez faire model doesn't work. Our model is better». But guess what? There have been a whole host of bank institutions that also went bust in Germany, France and Belgium. Also, the amount of economic contraction in the euro zone was actually more severe in terms of GDP as compared to the United States. So the economic and financial crisis was as bad, if not worse, in the euro zone and in continental Europe than it was in the United States and the UK, in terms of numbers and dimension.

In my opinion, this means that the continental

European model of a social welfare state is also unsustainable as a model in its present form.

When public spending becomes 50% of GDP, when tax revenue becomes over 40% of GDP, when countries can maintain that sort of welfare state only by running a deficit of 5, 7, 8, 10, or in the case of Greece 13% of GDP, that's not a sustainable model.

I think we are now at a point in time in which all our economic models are broken. The Anglo-Saxon laissez faire model doesn't work, but the social welfare state of continental Europe doesn't work either.

I think a modern model that works is a market-oriented economy in which governments provide the appropriate types of public goods and services and social welfare, but they do so in a intelligent way that doesn't lead to systematic budget deficit. These governments have much greater prudential regulations and supervision of the financial system.

In the context of the social welfare state, I think one point that has been made is that in order to have enough flexibility, rather than protecting specific jobs we have to protect workers.

If globalisation means that some sectors decline, then of course we have to have a social safety net, but this social safety net should not be such that jobs

are maintained even if they are unproductive. What we need to do is to provide workers with skills, education, retraining, welfare payments, unemployment benefits, health care, pension funds and other portable social safety nets that allow people to be flexible and to move from one job to another.

We have to protect workers rather than jobs and we have to rethink the social welfare state, just as we have to rethink the laissez faire model of the US and the United Kingdom.

As for the euro zone, in my opinion the social and political situation in Greece and Spain looks unsustainable. I don't think that these countries are going to be able to make the kind of fiscal adjustment that is necessary to stabilise their debt ratios.

As I pointed out, the Zapatero government just managed to pass the first phase of fiscal austerity with a one vote majority and much more has to happen. If I look at Spain, for example, in some ways Spain is in better shape than Greece: the budget deficit of the social GDP is lower, public debt is lower and savings are higher. So in those areas Spain is in a better shape than Greece, but there are three or four important areas in which things are actually much worse today in Spain than they are in Greece.

First of all in Spain today the unemployment rate is 20%, while in Greece it is only 10%, and among young people the unemployment rate is 40%.

Secondly, Spain unlike Greece has a huge housing bubble, even bigger than the United States and the bust of the housing bubble has led to massive collateral damage to the real economy.

Thirdly, unlike Greece or Italy, Spain now has the huge fiscal cost of bailing out financial institutions: the banks, the cajas, the savings banks. And the cost of these fiscal losses is going to grow over time and will be an additional burden for the government.

Fourthly, in Spain even more than Italy, Greece or Portugal, the loss of industrial competitiveness was greater because in the boom years wages were growing like crazy, totally unrelated to a growth in productivity, and therefore the loss of productivity, efficiency and competitiveness of the manufacturing sector was even bigger than in other peripheral countries.

So, in some ways Spain is not on the verge of the abyss in the same way Greece is. It's a few miles away, but in many areas there are structural problems that Spain will have to face. The next few months are going to be more severe.

Things like privatisation will help, as will making

more reforms. We'll see what the political consensus for these reforms is.

As I said, I believe that debt restructuring is unavoidable for Greece at this point. However, I'm not saying that the debt restructuring is unavoidable in the case of Spain.

QUESTION FROM AUDIENCE What happens in the United States with the euro being worth as much as a dollar or even less?

QUESTION FROM AUDIENCE Prof. Roubini said things that I didn't know because I believed Tremonti when he said that the question came out of the blue and nobody knew anything about it. However, he also said that there have many crises over the years. My question is this, who pays if not the population, people who earn 1000 euro a month in Italy.

As someone who knows them, in other countries do those in government, politicians and economists pay in any way or will the populace continue to pay for someone else's mistakes in this capitalism which no longer functions?

QUESTION FROM AUDIENCE How did we arrive at the

Great Recession, was it predictable? 25 years ago I did a course, a seminar in theology at the University of Milan. We did not study just theology, but also the link with the welfare state and after six months all these things emerged. Why weren't they taken into consideration? The same thing in Naples, on the euro at university, why weren't the issues considered?

TITO BOERI I would like to take the opportunity to ask a question myself. From the lecture one understands that we have moved from a world where there was great moderation towards a world where there will be much more instability. Earlier you said that there are negative examples in existing models, you gave the example of a country with a relatively small state and another for countries with a relatively powerful state. In a world in which there is more instability, many say that we should move towards a world where the state is more significant, with a very strong presence in the public sector. Given our current knowledge, how do you feel about taking a position on whether in a world which is more instable there is a need for a more or less powerful state?

NOURIEL ROUBINI Well, my answer to your ques-

tion, Tito, is that we have certainly learnt that governments and states can play an important role in the economy. Certainly this Anglo-Saxon laissez-faire model, that I discussed, has been failing and therefore we need the government to provide a social safety net, providing sound and efficient public services.

So in that sense we need more government. But if you take the euro zone and the continental European model, it's also at best a mixed blessing and most likely an economic failure.

You know, economic growth is very anaemic, of all the reasons of the world, the biggest risk of a double deep recession is today in the euro zone, the risk of sovereign default is now significant in a number of member states in the euro zone.

The size of government spending has become inefficient, the extent of taxation has become excessive and large budget debt has become unsustainable.

So if this crisis is just a justification for saying that the whole social welfare model works, my answer is «no, it doesn't work, it's a failure».

There is a third way between the Anglo-Saxon and the continental European models. It's not easy,

it's not simple and it's not just a question of more or less government.

It goes more in the direction of more efficient government, sounder government, better regulation, provision of services and appropriate types of prudential regulation and supervision. It's not the quantity of government, but the quality of government that is important.

On the question that was asked about how the weakening of the euro affects the United States, I would say the following. For a number of reasons I already expect that the recovery in the United States will be anaemic. The shocks from the euro zone make the likelihood of weak economic growth in the United States greater and it's not just the effect of the euro, of course, a weaker euro means a stronger dollar. The stronger dollar means that an improvement in the trade balance of the United States is not going to occur; it's going to be reverse. But there are a number of other channels of transmission to the US that are negative in addition to the exchange channel of a stronger dollar and a weaker euro.

There's been a stock market correction of more than 10% of GDP right now that has hit the euro zone, a US emerging market and that's negative.

There's been a widening of a credit spread both for a high yield and for high grade corporate bonds. The cost of borrowing is rising, the quantity of borrowing is shrinking, and that's also negative for the corporate sector.

A liquidity crunch in the interbank market is now beginning, starting in Europe, but also worrying the United States, the spread is widening. That's also worsening the credit crunch in the United States. So all these are negative challenges of transmission, in addition to the fact that increasing market uncertainty and volatility means that consumer confidence, investor confidence and business confidence in the euro zone and in the United States is going to be damaged because the contagion coming from Spain, Portugal will become regional and then global.

So a weaker euro and a stronger dollar is negative for the United States, but there are a number of other channels of transmission.

Final observation, who is paying for this? Everybody in society pays for it and therefore you have to think about the ways in which you can make it fair. For example, imposing taxes on banks and financial institutions as a way of recouping the fiscal cost of bailouts is necessary and also fair, because the losses

incurred in the financial system and the burden of taxation on labour income is already high and can not be significantly increased. We need to make sure that the losses are distributed in a fair way, otherwise the social backlash against the free market, globalisation, free trade, the financial market and financial institutions is going to become worse over time. We also have to think about making austerity equitable over time.

TITO BOERI Thank you. You have also given us some ideas for the next editions of the festival. Thank you very much indeed.