GOVERNANCE, INSTITUTIONS AND ECONOMIC PERFORMANCE*

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Thank you, Mr. President, for that very nice introduction. Let me begin with a big thank you and two sorries. The big thank you is for inviting me and treating me so nicely. This is my first visit to Uruguay and I love it. The temperature could have been 10 degrees higher but other than that, it's been excellent. The two sorries are first for not being able to lecture in Spanish. Like all Americans I'm unilingual and unfortunately or fortunately, Economics is a one-language subject, in fact a two-language subject: Mathematics and English and in that order. But today, there isn't going to be any Mathematics. I'm going to speak in the second language, that is, in English. The second sorry is that my talk has nothing directly at least to do with the business of central banks or monetary policy; but it's on a kind of big fashionable topic that you hear about all the time so maybe it'll be of some interest. The subject is economic governance and governance institutions and the way they influence the performance of the economy.

If you read even popular magazines like The Economist or certain economics journals you'll find governance mentioned everywhere. Cita-

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tions in the economic literature have grown very fast over the last three decades. Thirty years ago nobody talked about governance at all; now everybody does. On Google, at least when I last tried a couple of months ago, it produced 150,000 pages and now I'm sure it's many more. The problem with this kind of buzzword is that everbody understands it differently. I'll give you my definition, the way in which I'll be using the word and that's at a very basic level of the legal institutional organizational framework that lies behind everything that goes on in the economy. The framework that supports economic transactions primarily by enforcing property rights, enforcing contracts, and also in variety of public goods that are important for the performance of an economy, not only physical infrastructure but also organizational infrastructure. I'll be talking more about contract enforcement that either property right or collective actions because that's where my own research has been, but I'll mention the other two at various times. Therefore, I'll show you a couple of slides talking about why economic governance is important.

I don't think I need to say very much. Everybody knows this. Property rights are very important. Unless you have security of property, people will not have the intention to accumulate and invest productive capital, whether it'd be physical or intellectual capital. They will not have the right security to use their capital to the most productive uses so if you have some savings, somebody else has a more productive use for them with a higher marginal product, you will not let them use your capital, unless you can be sure that your capital and the agreed returns will be given back to you.

And lastly, this is something that is not very well known. Security of property, security of capital, is also important to allow productive use of labor. This is an interesting PhD. thesis presented in Princeton by Field, who is now in the Faculty at Harvard. She found through some data in Peru that if property was secured you didn't have to spend your labor guarding your property. Instead, you could guard their work. That's what actually happened. Families were able to use their labor more productively because their assets, like their stores or their little factories at home, were secured.

Enforcement of contracts. Contracts very often present classic problems that Williamson and others talked about. The problem being that there's an opportunity for doing business together that will be mutually beneficial but each party and sometimes one of the two parties, will be able to secure extra private benefits at the expense of the other party.

If that is a real fear, they will never enter into a productive relationship in the first place and so the opportunity for their mutual benefit will not get realized.

Collective actions. There all kinds of problems that arise that need to be solved largely of the multi-business dilemma type. There are a large number of issues: free-riding; provision of private efforts for collective benefit; proper use of common pool of resources; prevent the excessive use of public resources. Societies have found different types of solutions for them; sometimes through governments, sometimes through communities, sometimes through a variety of other informal social institutions. Lastly, and perhaps crucially important in a number of less developed countries and in others, too, collective actions by the citizens are important to prevent the government from arbitrarily exercising its power for expropriation or corruption type of activities. That calls for collective action by citizens because no one is ever going to be able to do that.

I'd like to talk now about some misconceptions that have to do with governance and I'd like to give you my opinion about them. First and the most important is that governance, although very often we think is something that the government should do, that's not always the case. Don't get me wrong. Governments are important. If governments really fail in protecting property rights, if they're corrupt, all kinds of things, they will cause problems to the economy and that's the major cause of poor performance of many less developed countries, many socialist economies. Absolutely right. But, other social institutions of governance are also interesting. Sometimes they take the place of missing things supplied by the government. The government should have done that but it does not so social institutions will do that. Sometimes they have actually an advantage in terms of information or expertise over the government. And, lastly of course, since the government is not going to guard against its own arbitrary behavior or corruption, it's important to have social institutions that will provide control over the government.

The identification of governance and government is perhaps most clear if you look at the World Bank governance site. Ninety percent has to do with corruption. The World Bank has really exercised anti-corruption about everywhere else except within its own doors but I want particularly to emphasize that governance is not the same as government. The other side of that is that when we think of the private economy we think of the market economy. But, actually, a lot of private transactions take place outside of markets. When we think of markets in the classical supply and demand framework, we think of completely anonymous parties being matched. A supplier and a demander. It doesn’t matter what the name, the identity, the history of the supplier is, or likewise for the demander. The supplier hands in goods of perfectly good quality, and the demander hands over in money in a *quid pro quo* instantly, and that settles the deal. All the suppliers and all the demanders like this. But, in reality, things are usually very different. Transactions usually take place between parties that actually know each other and that will deal with each other for a number of times. The quality of the good or service being supplied is not instantaneously known and payment is not instantaneous either. There’s trade credit, thirty-days next is the usual kind of thing you see in invoices. And this calls in a lot of other problems.

I believe that when you leave here what you’ll remember are memorable things rather than a large number of slides. So let me give you an example of how transactions actually differ from the classical markets. My best example comes from the very beginning of the book and the movie The Godfather. Everybody here has seen the movie or read the book, right? Remember when the undertaker comes to Corleone and asks him to avenge his daughter’s dishonor. The undertaker is completely from outside this world and doesn’t know how things work. The Godfather says to him: “Our families have known each other for all these years, but you’ve never invited me to your house for a cup of coffee, you’ve never called me Godfather, why should I do this?” It’s the importance of a long-standing relationship, right? Finally, he relents and agrees to do that. And even then, the other guy, Bonasera, not knowing asks, “How much shall I pay you?” Remember what Corleone says, and it’s a really punch line: “One day, my friend, and that day may never come, I’ll need some small favor from you. Until then, accept this as a gift from me on my daughter’s wedding day.” This is the classic example of a transaction taking place in which one side is doing something, in return for something that’s not even known; this is not like a loan (this is not like I give you a hundred dollars now and you’ll give me one hundred and five dollars next year). This is an indefinite *quid pro quo*. “I’ll maybe call on you some time, and when the times comes…” Remember, Corleone wants the undertaker to fix his son’s face nicely so his mother won’t see the terrible state in which he was killed. Is he asking for too much or for too little? Who is to judge? This transaction could simply not take place in an anonymous market. The *quid pro quo* would be given in this case by the Godfather's reputation. He can call on any favor he likes. What actually happens is that the Godfather killed an enemy he wanted Bonasera to make the body disappear so in relation to that, fixing up his son's face is too much or little, well, who's is to judge? So it's an extremely difficult problem of governance. This is something that the government could not do, this is something that has to be done on a relational social basis.

Formal law is not the same as effective order. We speak of law and order. We think we'll pass a law and the courts will enforce it. Not the case. Again I'm going to give you some examples. I'm going to illustrate this in the context of a simple more basic problem of social coordination. You need social coordination and the idea is that all you need is some kind of signal from above. That will create a focal point to the action you want to take. A good example of that is the traffic light. The government installs traffic lights at an intersection and the traffic flows, you know when to go, you know when to stop. Will that work? Let's see. There are traffic lights at this junction and they're working. This takes place over a period of four months. [Video shown from:]

Law without order
http://www.youtube.com/watch?v=H2JFL1Sk21Y

Order without law
http://www.youtube.com/watch?v=5WU8hilbN9Y
http://www.youtube.com/watch?v=eC4BN9kInXg

Even with normal traffic lights, if not everyone believes in them and abides by them to the same extent, things can be actually worse. Presumably if the traffic lights were removed in St. Petersburg intersection, people would be more careful. Formal systems whose reputation has not been popularly established can actually be worse than the informal system they want to replace. I should thank Danny Rodrik who first pointed it out to me to the existence of these videos.

You have to distinguish between what's the letter of the law and the way in which the law actually works. De facto system and de jure situation of law. In Russia property rights are nicely enshrined in formal laws but they don't operate too well in practice. China seems to be rather the opposite. It was until recently that property law was practically non-existent. But somehow or other, particularly for foreigners, their investments were pretty secure. India is somewhere in between the two as well as Latin America. The law is not as perfect as we might want; its operation is different from its formalities.

Then another of these government and governance issues is that the government itself may violate property rights. It could be done by directly expropriating assets without compensation. That’s rather rarer than it used to be, although in a couple of countries it’s making a comeback. But, there are other ways than pure and simple expropriation or violation of people’s property rights. For example, to increase the rate of taxation above what people had anticipated. You see examples of that all over. When a price is high, the temptation to increase the profit tax or the export tax becomes overwhelming. A license that you’re entitled to but somebody asks for a bribe, then that in a sense of violating your property rights.

In this context it’s usually found that people’s uncertainties about security of property or direct taxes are worse than a high tax. Of course, right wing politicians will always say that high taxes are bad and sure we know in economics that high taxes will discourage investments, economic activities, etc. But think of Nordic countries or even America in the 1950s. Tax rates were must higher and right wing now regards it as a golden age of American capitalism. So it’s not that high taxes are mere uncertainty; it’s not knowing what’s going to happen next. Or you’re supposedly required to produce twelve licenses to start your business and once you’ve done that a guy comes round and says, “You won’t proceed unless you pay me”.

Likewise, it’s been found that up to a point, the kind of middle-level income, you can proceed with relatively minimum institutions. Going beyond that, to higher income levels, it’s what calls for really good institutions.

A couple of more things on this. In most economies you will find exactly a mixture of public governmental formal institutions and informal private social ones. Examples: even in America, disputes of traders in the same industry are settled by arbitration and something called ADR, alternative dispute resolution forums, and not go to court. That’s where expertise can be used; interpretation of facts can be desployed by industry insiders. Even in America, in finacial markets, reputation is extremely important. This is lovely quote: “In a free society governed by the rights and responsibilities of its citizens, the vast majority of transactions … presuppose trust in the word of … strangers. … Reputation and the trust it fosters [are] the core attributes of market capitalism". Now, who do you think said that? Maybe Adam Smith? No, actually, it was Alan Greenspan.

But, the social institutions don't work perfectly, either. They also have their limits and here's another quote from Greenspan. "JP Morgan thoroughly scrutinizes the balance sheet of Merryl Lynch before it lends. You have to have ex-ante surveillance." Actually in the light of what's been happening recently, perhaps, we should say "should have thoroughly scrutinized the balance sheet before it lent". But the idea is still valid. You don't rely on the Security Exchange Commission to verify the creditworthiness of your borrowers. So, here's a problem of trust. Let me offer a quote by Ronald Regan. Supposedly Gorvachov got very mad at him. "Trust, but verify". So the scope of trust social-based mechanisms, its social mechanisms, is also limited. What does it depend on? It depends on how good the communcations, the information channels are in the social network in which the social-based interaction is taking place.

This whole issue is the classic one that used to be debated for almost one hundred years. Should you have markets or should you have governments? Each and neither. Governments and private institutions of governance coexist. Private transactions take place in networks. What we should be studying is not the state versus the market dychotomy. We should be studying the interaction of all of these different components. They interact well or badly; under what conditions they interact well, etc. We should have in mind when studying all this that we'll never get the first best. Everything has its limits; everything is second best, third best or worse.

Let's know talk about the formal institutions. What are they? I'm going to take a very broad definition. They include things like the basic Constitution, the legislation that gives specific items in the Constitution, all these organizations that will enforce the laws, the police, the courts, the central banks, the various licensing and regulatory authorities, everything. Informal institutions include social networks; they include norms on how one is supposed to behave when dealing with people in the network, and also what one is supposed to do when someone violates those norms. And, just like the government's courts, they can be private measures of adjudications. There can be private methods of enforcement. I mentioned arbitration forums; little before that we had the Godfather's justice. These can be works for non-profit: the industries arbitration tribunals are basically providing that for the service of the whole industry; the Godfather presumes when the other is making a profit, for instance. There’s a whole variety of these.

Let me begin with some ways for private protection of property rights. Again this works ex-ante and ex-post. Ex-ante works by deterrents. You can have private guards that will stop the robbers from coming in. You can have gated communities that will do this for a whole bunch of people. After the fact you can have punishment mechanisms. Other than the Government’s police and the courts, you can have a variety of mafias that will enforce in the niches where the Government is not operating, either illegal transactions or where the Government information system does not get. In fact, the studies of the origins of the Sicilian mafia by Oriano Bandiera, Diego Gambetta and others found that this is exactly the way the mafia originated in the 19th century when the feudal regime was collapsing and Italian state had not yet emerged. Landlords started basically to hire what were the toughest of the bandits to guard their properties. And then the toughest of the bandits gradually got together and formed a society that became the mafias. One way in which these things don’t work perfectly: this creates some negative externality. So if you get the mafia to protect your farm, where are the robbers going to go? They’re going to go to the next farm and so your neighbor is in a worse situation and so the probability of your neighbor being robbed is higher. By hiring the mafia you’re exerting a negative externality and then the mafia can tell the neighbor, “Hey, look, you’re in a bad shape. You’de better hire us as well”. And, in this way they can extort higher fees from everybody. This is the way in which protection by the mafia can actually end up being a bad equilibrium but, once that gets established, individuals can’t get out of it. They’ll have to have a very complicated and even dangerous collective action problem to solve to try and get rid of the mafia.

What about protection by the Government itself? There’s an interesting study from Medieval Europe where the idea was that the city states and each ruler of a city state would have the temptation to levy high taxes on traders coming from other cities, effectively robbing them of their gains from trading. If that happened, they wouldn’t come to trade in that city. Now, of course, this hurts the traders who have an incentive to solve that problem. It actually even hurts the ruler. This is the typical case where lots of models have this problem. Before the fact, you have every incentive to put in place a system that will guard you against your own future temptations. So, how was this problem solved? Medieval guilds basically decreed that if any of their members was robbed in this way by a ruler, none of the other members would do business with that ruler. This by itself won't work because the ruler will then have a temptation to peel off one by one these other members saying: "Hey, look. It's very valuable for me to have your business; I'll treat you nicely." And that might work. So you have a second round of punishment. The guild says that anyone who in violation of the guild's sanctions deals with one of those rulers will himself be sanctioned. It has been claimed that this worked in medieval times.

So, in countries such as India, for example, the business community is pretty tight and has a good of network of information. Could they develop a private norm of no-corruption? The idea there would be that nobody gets a license by bribery. If anybody does, then others will not do any business with this person. Of course, that person in order to fulfill the government contract or to proceed with whatever he's got the license for, is to going to need a whole lot of other inputs, services, etc. from other business people and, if they don't deal with him, his license or his contract will be useless. Of course, at the end, there's a temptation that he can go to others and say: "Look, I'll give you a share of my profit." But then, a second round must begin that anybody who deals with this business person who has been sanctioned in this way will himself be found guilty of cheating against the business community norms.

So, will something like this work? I don't know but at least it's worth trying out. What it needs is some kind of leadership, a large number of business people who will keep this type of thing rolling, good networks of information so that people can find out when someone gets a contract for bribery. My guess is that in India both of these things exist so this may be worth trying out. I don't know whether corresponding conditions exist or what the need for them would be in some Latin American countries; maybe you might have better information and we can discuss in the question and answer session afterwards.

Just a little bit about corruption. An interesting problem about corruption was pointed out in the context of Russia by Schleifer and Vishny. The idea here is that you if you need twelve licenses separately from separate officials, each of them demanding a bribe, then this turns into the classic economics double marginalization problem. Each one of them deciding how much bribe to ask for is not taking into account that this is reducing the business for others. Or, if you are not old enough to know about double marginalization, think of an oligopoly selling complimentary products. If separate oligopolies become duopolists selling software and hardware, if those selling software will not take into account that if the price of the hardware is too high, the demand of the software will go down and vice versa, so if you integrate them together they will internalize this negative externality among themselves and they'll reduce the prices of both of those. This is one case in which monopolization will actually end up in being in the interest of consumers as well.

So, in the same kind of way, in terms of licensing, the thing to do will be to have even though you need twelve separate things put them in charge of agency, of one- stopshopping for licenses. So that one agency is responsible for supplying the twelve of them. It might ask for a bribe but it will be lower than the sum of the bribes that all the twelve people separately will ask. And once you've got this one license from this one body, nobody can challenge that. That should be the kind of top level law.

Again, this is something that's worth trying and maybe something that's even worth trying is to have two one-stop agencies of this kind. You could go to either of them. There's an agency here, there's an agency there. You could go to this one that will give you the twelve licenses for a bribe. There's an agency there that will give you all twelve licenses for another bribe. Either one of those will work. They will then have to lower their demands for bribes to try and attract business. So this type of price competition between these two substitute duopolists, each of them supplying the whole package of licenses, might drive bribery down to a very low level.

To my knowledge this has never been suggested. One-stop agencies are used quite a lot. They're used in a number of states in America; they're used in some developing countries. They're spreading but have competing one-stop agencies maybe is an innovation worth trying.

Let me now turn to contracts. The main issue that arises has been known Williamson and subsequent writings but actually there's this wonderful quote by Hobbes in the Leviathan that if two parties are not performing at the same time, which is typically the case in most transactions as I was telling you, at least there's trade credit, they grant certain quality, etc. So, "For he that performeth first has no assurance that the other will performe after.” This is a classic problem. “Because the bonds of words are too weak to bridle men’s … avarice”. What wonderful writing; let’s start writing like that once again. Now people draw gametrees and do backwards induction; that’s not as much fun.

So, how do you solve these problems? The typical solution is an on-going relationship. You have to have enough surpluses each time in the dealing to kill your incentive to go for a big expropriation or robbery all at once. You can hold up the other party and get a hundred, the relationship will collapse. If the relationship is going, you will get the surplus of, let’s say, 8, each period. If the interest rate is only 6%, then that loss is too much, the loss of 8 per period is not worth having a 100 at once if it’s only 6 each period. So that type of story can typically control this problem.

Other kinds of problems, of course, include ex-ante precautions. You have to choose the right kind of partners and you have to have good ex-post mechanisms for detecting and punishing those who steal or cheat.

I want to distinguish these constitutions into three types and I’ll call them simply: first party, second party and third party. The first party actually just changed the internal pay-offs of the traders themselves in such a way that they will not cheat. And I’ll elaborate on this. This might seem a bit strange to economists at least so I can elaborate on this.

Second party is when cheating is detected, punished, etc. by others who are in this group of traders, not necessarily the same ones you’re dealing with right now but at least they’re in the same group. And third party is when it’s done by someone who is completely outside. The court might be an example; the mafia might be another example, etc. And sometimes it would be done also for a profit.

So, first party. This is something I think is unusual for economists. They don’t think of that but it’s very important in practice. You have all kinds of deliberate elaborate social efforts to get people to think that they should not cheat. Make them feel guilty or ashamed if they cheat. And this is done through religion; this is done through socialization in schools. Interestingly, people who have conducted experiments on the ultimatum game or the trust game, etc., with children of different ages, find that children who are 3-4 years old are very selfish. You may have noticed this well because almost the first words that a child learns to speak after “mama” and "papa" and so on is "mine". It's when they go to school or with their siblings that they're taught they've got to share, "you've got to be fair to others". At that age quite a lot of that sticks and, at least, that's part of the job. Similar kinds of things occur with civil duties. Children who are 6-7 years old are usually taught duties of citizenship. "You have to go and vote; you have to stand on line." All that kind of thing. So, evolutionary biologists and philosophers think these things can be beaten down by cheaters. Although a group that has internalized this kind of preferences has advantages over another group that has not in solving collective-action problems, within the group a cheater will get the higher pay-off. So will that not eliminate the good behavior within the group? The answer is that you have to have, as a part of your norms, a norm of punishment. The majority, the bulk of the population, has to instill a norm. "I will not cheat and if I see somebody cheating I'll punish him even at my own cost". Experimental analysis demonstrates the existence of this kind of thing: acting unfairly on one's colleagues, altruistic punishment in quite a lot of experiments. So the prevailing norm is one of good behavior plus altruistic punishment that can be proved against invasion by cheating strategies and it can be an evolutionary stable strategy. This is what Boyd, Gintis and other people call "strong reciprocator strategy". I'll reciprocate good behavior; I'll punish bad behavior if I see it in society.

Second-party institutions. Here I'm including not just the two people dealing with each other but the whole group of traders that from time to time will deal with each other. Greif studied this in the context of the Maghribi traders; everybody knows this pretty well, I'm sure. He calls this collectivist punishment; collectivist social norms; collectivist social institutions. Industry associations perform a similar kind of role and they perform that role by having a good social information and communication system. So, if somebody cheats the news of that should spread accurately. People should not be falsely accused of cheating but any actual cheating should get known pretty quickly. This depends to some extent on the size of the group. A classic example is e-bay. When e-bay was small, their rating system apparently worked pretty well. Then it became huge and people began to manipulate the system so you could falsely sell something to a hundred of your friends and then you'll have a higher rating and you can start cheating others for a while. So e-bay had to implement a more formal mechanism to guard against behavior of this kind. But even in today's age when we think that communication is very fast, social networks are limited in size. Another example is this: People have studied what's the maximum number of contacts, the first level of acquaintances a person has. One way of doing this is to look at people's Christmas card lists. The limits are under one hundred and fifty mostly. Many of us are actually less than that.

Now, this works in a group and so if A and B are dealing with each other right now and B cheats A, they may not meet again for a while, so who will punish B? B will be dealing with C the next time and it's got to be the case that C finds out from A and punishes B on A's behalf. And that's harder. You have to have the line of communication; you have to verify its accuracy to make sure that people are not being accused of cheating falsely, etc. Even with that, for C to punish B on A's behalf might be a cost possibly. It might be internalized but it might be difficult also to do that. Inflicting punishment at a private cost is in itself public good and so you have another public good provision problem. So, to the extent possible, you will try and find one partner with whom you can have good business relationship and deal with that partner over and over again. But that doesn't always work. Maybe the nature of business changes and you have to deal with someone else so you do need this kind of multilateral social network institutions. Again I have a good example of this. There's an American baseball player, manager, etc. called Yogi Berra, best known for sayings that at first sight seemed stupid; then, you'll think about it a little bit and you'll see that there's a very subtle wisdom in there. So he said of a club where people used to congregate: "The place is so crowded that nobody goes there any more". And of course, the subtlety is "nobody who?" Right?

So here's an example of multilateral versus bilateral relationships. He said: "Always go to other people's funerals, otherwise they won't come to yours." This punishment in its very nature could not be inflicted on a bilateral basis. It's got to be done on a multilateral social network basis.

Third party. This is governance by outsiders with no direct part. They collect information so credit rating agencies are a third-party institution of this kind that will verify whether you're a wealthy borrower when you ask for a loan. There can be arbitration-type mechanisms. There can be even direct enforcement and I'll give you an example of that in a minute. Of course, there can be formal ones. So, private ones: I've mentioned credit rating agencies; I've mentioned adjudication as arbitration mechanisms. A historical example of this is the private judges at medieval fairs that Milgrom-North-Weingast talked about. And enforcement, that's actually inflicting punishment.

Examples of information and enforcement combined: the loveliest comes from Gambetta's Ethnographic Study of the Sicilian Mafia. Right at the beginning he sets up the stage. I highly recommend reading this book. It's a wonderfully rich sociological-ethnographic study informed by good economists, a very rare multidisciplinary success. At the beginning, he sets up the stage by telling us about this cattle farmer to whom he was talking. The cattle farmer said: "When a butcher comes to me to buy an animal, he knows I want to cheat him by passing off a low quality animal, and I know he wants to cheat me by reneging on the payment afterwards. So we both need Don Peppe, the *mafioso*, to keep both of us honest; and we both pay him a commission". So, what does Don Peppe do? One is information. He finds out who the good guys are and who the bad guys are, and the other is enforcement. Regardless of history he'll tell the farmer, "All right, if the butcher doesn't pay you, come and tell me, and I'll go and smash him or whatever". There's a problem here. Nothing intrinsically guarantees that Don Peppe will do this honestly. What he can do is tell the butcher, "Yes, I've known this farmer for a long time and his quality is good". If it turns to be bad, then Don Peppe gets a kickback and the butcher can't actually do anything. So, what will keep Don Peppe honest? Exactly the same thing as the efficiency rate. Don Peppe has to get enough of a fee for his service, for a period, that's enough to kill his incentive to get one big sum but cheating all at once. Don Peppe has to have a minimum fee. Of course, there has to be a maximum fee. People have to have enough for surplus in the relationships themselves to keep on doing this. So there's an upper and a lower fee. This is in a paper I did a while ago. People read that paper and said: "Ah, this is a theory of optimal pricing by the mafia. He should go in the consulting business!" I've thought of that but somehow including on my annual report to the Dean something like "Consulting – Economic Concilliary to the Corleone family" did not seem quite right!

Let's talk now about collective action problems. This is really well known so I won't spend too much time on this. There's a lot of theory on this in game theory. There are lots of empirical studies from the political scientists, etc. They've found that to solve collective actions problems there are a number of common things that it's useful to do. Perhaps the most important is local information. The group itself has to know who the members are, what they're supposed to do, what the consequences of doing the wrong thing will be, and the history of their members. Secondly, you've got to match the rules to the information you have. But now we know that, we have to extricate information; limited information constraints optimal information in a variety of ways. And here is an example. Let's suppose a fishery is being depleted. What policy? The standard economic response would be: Impose a quota. And, experience shows that quotas usually don't work. It's because it's extremely difficult to verify what fish you got, what size it was, all these kinds of way of cheating. So quotas in reality don't work well. What works well? Strangely, the kind of things economists don't normally think of as efficient solutions to the problem. There are things like limits on the time of the year when you can catch, limits on the size of the boat, limits on the size of the nets. The reason is that there's information about these things; they're very valuable. The economists suppose that the ideal solution of quotas is taxes and it would be first best if the right information was available. But because information is not available it's not a constraint optimal solution. It's one of the things that one has to recognize.

And lastly, here's one thing that all the studies find that goes against much of the game theory. In the Standard Theory of Repeated Games, the background is that harsh, severe punishment will induce good behavior. That's not the way things work. The way things work is that if you find somebody misbehaving, the first thing you do is to make a phone call and say, "Look, you shouldn't be doing this, you know". Maybe the other one says: "Sorry, I'll try to do better next time". If that doesn't work, you start spreading bad word about that guy in the community and you gradually escalate. Graduated punishment works much better than the kind of grim-triggered strategy and punishments we know from the theory of repeated games. This is something that I'm doing research on in connection with a couple of co-authors, but we don't really have definitive results yet; we just have a few examples.

As you can see this is a huge subject. I could go on talking for hours and days, of course. But I'll just wrap up about two words about dynamics and reform. We saw some ideas in the ways in which good institutions might seem to work and one thing is that institutions evolve towards this kind of a good state. There are two somewhat opposing views on this. There's a discriminating alignment hypothesis by Oliver Williamson which is more or less positive in this regard. He says that institutions and transactions will align themselves in such a way as to minimize the cost of transactions. Others are less optimistic and there's a lovely example of a disfunctional institution of mutual insurance in farming in Iceland.

In fact, the right thing to do would have been to abandon farming and take to fishing instead. Apparently the disfunctional insurance institution stated where you had to produce hay because you may be asked by your neighbor to deliver the hay lasted for hundreds of years past the time when it became unnecessary. You cannot rely on institutions automatically or quickly evolving in this way.

If you start changing institutions you’ll run into problems, if they clash with what exists on the ground. If you put a traffic light when people don’t believe in the system and it isn’t established yet you’ll have problems that are worse than either really having a properly functioning traffic light system or nicely functioning social non-system of the kind that we saw. There are other examples of this as well.

It’s also true that it may be necessary to accept the temporary worsening of the performance. And the reason for this is an aspect of the theory of repeated games. Repeated games have a dynamic incentive compatibility constraint that says that what you get from cheating should not be better than what you could have gotten if you hadn’t cheated.

If you improve the performance of a formal institution, when an informal institution is what’s currently operating, then people can cheat in the informal system and go and work in the formal one. So the dynamic incentive compatibility constraint is becoming tighter. Performance of the relational system can actually become worse for a while until the outside system becomes so good that people start to use that one. That’s another dynamic problem that needs to be kept in mind.

Should these reforms by instituted by a government or should they come about bottom up? There are examples of both and the best thing seems to be a kind combination where bottom up reforms using local information supplemented by some kind of a facilitating role from the government works well but pure top down reforms don’t necessarily work well. Sometimes a single social entrepreneur can get reforms going. I was talking about this in the context possibly of anticorruption norm in a business community. An example recently is when the CEO of AFLAC, an American insurance company, offered its shareholders to vote on his compensation. That movement apparently is now spreading. How effective that is remains to be seen but maybe it’s the kind of thing that will work. Media play an important role. The fact that crises are conducive to change, although that's debatable, competition forcing change, well, there are a number of these suggestions that with more time I could elaborate.

But let me give you some message to take away, some general things that policy advisers and policy makers may take away from all this. For policy advisors, my advice is that they usually like to say: "Hey, here's the best practice. Do this". This is usually without any regard to what exists. I'd tell them that "At least think that it's possible that what exists there exists for a reason". That may not be an ideal reason but the least I can say is "Think about it, and see if what you're recommending putting in its place will interact well with it or might make things even worse." What will happen in the short run and in the long run? Don't simply say, "This is what works in America, in Western Europe, and that's what everybody should be doing".

There are a number of case studies, a number of theories that will give you some general principles to think about this. But then to apply them, you have to do it in a context. You have to see, understand, etc. what's working. You have to recognize that different countries have different problems; talk to the locals; don't try to go purely top down.

A nice quote in this line is from Biology. It's from Richard Dawkins who said: "Evolution is smarter than you are". Maybe societies with their networks and norms may be smarter than some western adviser who comes down for a day.

But for policy-makers, what usually happens is that they want to copy the latest success. In the 1980s it was Japan. Everybody wanted to do what Japan did and suddenly Japan turned into a not very good model. Then it was China. Now it seems to be Vietnam. Nobody knows how long that will last; they're having some problems as well. But, the thing that economists emphasize is the kind of pragmatic approach. Trying to see what works in all kinds of different places, which of those will work in their context, how they'll mix with each other, etc. That seems a sensible way to proceed, so you should listen to everybody, even the Washington Consensus, although these days that's kind of dirty phrase. Look carefully and there are actually some good things in there. Things like monetary and fiscal responsibility, something that even Danny Rodrik said you should have.

UN agencies, academics, journalists, etc., listen to everybody but don't slavlishly pursue what anyone of them says. Combine what they're saying and come to your own decision.

And one last example. Almost a hundred years ago there was a race to try and reach the South Pole between Amundsen and Scott. Maybe you're far enough South and have some South American connections to Amundsen's trip and you may have read about it. They went about it in very different ways. Amundsen had traveled to the North of Canada, to the Northwest Passage and spent a winter among the Inuit, the Eskimos there, he knew what kind of dress to wear, what kind of sledges worked their best, what kind of food. He combined that with some completely modern things like kerosene for heating, tents, etc. He thought and thought for two years making plans, achieved the right combination: he skied to the South Pole from the edge of the Antartic continent and back in 99 days, a record that still stands. Scott believed that the British had all the answers. Specifically that the British Navy had all the answers. He took horses which were not very good for walking in the snow. Amundsen had dogs. Scott was not very good at skiing, not very good at operating dogs; his food was wrong, a whole disaster with the result that Scott and four of his companions, who reached the Pole a month after Amundsen, under very bad conditions -were delayed and caught in snowstorms of the late Southern Fall, and all five of them died. My advice to policy-makers is "Be like Amundsen, not like Scott".

Thank you very much.