

Thinking Capitalism with Janos Kornai

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Keywords: capitalism, private property, Marx, Schumpeter, Hayek, Kornai.

JEL numbers: P10, P14, P16, P51, B13, B14, B15.

Abstract: We survey Janos Kornai's thinking on the capitalist system, from *Anti-equilibrium* to his most recent work. The capitalist system is one of constant excess supply generated by the dominance of private property, market coordination and hard budget constraint. I put forward some elements of my own thinking on capitalism. Many of them are inspired by insights from Marx, Schumpeter, Hayek and Kornai. I emphasize three additional issues: the role of democracy for the survival of capitalism, political sustainability of capitalism and the role of culture.

1. Introduction.

Janos Kornai produced the most comprehensive theory of “real existing socialism” in *Economics of Shortage* (1980) and *The Socialist System* (1992). This work has been widely cited in economics and social sciences more generally, and stands as an intellectual monument for all those who want to understand how a socialist economic system really worked. While producing his theory of the Socialist Economic System, Kornai’s comparative approach, since *Anti-Equilibrium* (1971) has also given us a “mirror vision” of capitalism as an economic system. This is the object of this paper: to discuss Janos Kornai’s vision of capitalism as it emerges through his writings.

It is not a surprise that one may get a clearer view of capitalism when analyzing non capitalist systems. Indeed, the strength of the comparative approach is that it helps highlight essential differences between different economic systems, which helps better to understand both. It is no coincidence that some of the best insights produced by economists on the nature of capitalism were related to the “capitalism-socialism” debates in the twentieth century. It is well known that general equilibrium theory benefited a lot from the central planning debate (Barone, 1908; von Mises, 1920; Lange, 1936; Hayek, 1945 and others). In fact, the central planning debate produced in its aftermath mathematical models that were very similar to general equilibrium models, but were mathematical models of planning, generating a literature, mostly in the sixties and seventies, called “Economics of Planning”. Early work by Kornai, in collaboration with T. Liptak (Kornai and Liptak, 1965), produced one of the most noted models in that literature. Whereas general equilibrium theory focused mostly on proving existence of equilibria, planning models focused more on generating optimizing models that could be fed to computers and could be shown to produce a solution. Duality theorems and the two theorems of general equilibrium theory showed the intellectual proximity between the analysis of the interaction of many markets under perfect competition (general equilibrium theory) and the elaboration of models of planning, solving for supply-demand interactions between different goods and sectors. In a way, the central planning debate forced those, like Oskar Lange who favored central planning, to respond to the objections of von Mises and others and build models of planning that could be compared to models of the market economy. After the first spurt of models of planning, focusing mostly on algorithms and computational convergence of planning models, incentive theory, and what became later theory, started to be developed in connection with the economics of planning literature. Mechanism design theory, starting with the observations by Hurwicz (1973) on incentive compatibility of models generated in the “Economics of Planning” literature. Indeed, Hurwicz’s concept of incentive compatibility started with the simple question of whether agents in the planning process (enterprise managers) would have an incentive to reveal their true supply and demand plans when given prices

by the planner. It is generally acknowledged that incentive issues were a major problem in real existing socialism. Kornai's famous concept of the soft budget constraint is the most famous incentive issue analyzed in the context of socialist economies.

Despite major advances in economic theory (be it in general equilibrium theory or incentive theory) being produced in relation to questions of central planning, and their comparison with market economies, it is fair to say that neither price theory (general equilibrium theory is essentially a theory of price formation) nor incentive (contract) theory pretend to be theories of an economic system.

The field of comparative economics, especially the work developed by Montias (1976) and others (see e.g. Neuberger and Duffy, 1976) in the seventies, attempted to build theories of comparative systems using abstract mathematical models. These theoretical constructions were very abstract in design, in the spirit of the times (social choice theory seems in my view the closest in terms of abstraction and intellectual ambition), but often did not have enough "bite" on reality, in the sense of delivering specific enough predictions that were at the same time sufficiently close to reality.

Kornai's work, starting with *Anti-equilibrium* was more ambitious and comprehensive than models of general equilibrium or mechanism design as it aimed at understanding both capitalism and socialism as economic systems. It was also much more specific in its predictions than other models of comparative systems. When rereading "Anti-equilibrium" today, one will find that, even though, it is long on concepts, notations and definitions, it delivers a number of important insights (on the role of information or of bargaining) and provides an innovative, original and extremely relevant comparative systems analysis on "Pressure and Suction" (part III of the book).

In section 2, we ask why it is interesting to think of capitalism as a system. In section 3, we briefly discuss some mistakes to avoid when doing comparative systems analysis. In section 4, we present some of the most important views of Marx, Schumpeter and Hayek on the capitalist system. In section 5, we discuss Kornai's views on capitalism since *Anti-Equilibrium*. In section 6, I present my own views of capitalism. In section 7, I discuss the specificities of Chinese capitalism. Section 8 concludes.

2. Why think about capitalism as a system?

While scholars in comparative economics find it natural to think that we need a theory of the capitalist system, this may not be obvious to the economics profession at large. Why would we need to think about capitalism as a system?

Attempts in the 20th century to establish a socialist alternative to capitalism, and their spectacular failure, would seem to force one to think of the difference between the capitalist and socialist **system**. Those not interested in non capitalist systems have usually little interest in understanding capitalism as a system. A large part of the economics profession thinks students should never learn about socialism since it has disappeared. A similar feeling exists among many economists about history in general.

Upon further thinking, it would appear that mainstream economic theory is not really interested in understanding capitalism as a system. General equilibrium theory, though framed as theory of markets, is essentially a theory about price movements, across sectors, in response to exogenous shocks in demand and supply. While general equilibrium theory helps analyze all interactions between markets, its focus of analysis is still partial compared to what one might expect from a theory about capitalism as a system. Disequilibrium theory was seen as very promising in the seventies, partly because it could provide a common framework to understand capitalism and socialism, but mostly because prices are in reality downward rigid. Understanding the macroeconomy in a world where prices are downwardly rigid is fundamental to grasp the business cycle properties of capitalism. Despite its promises, disequilibrium theory was focusing mainly on the analysis of spillovers of excess demand and supplies in one market on other markets. Even though it takes prices as fixed, its focus is still pretty much similar to price theory. Essentially, it still takes supply and demand curves as the basis of economic analysis. All in all, it would seem a paradox that it is in political science, and not in economics, with the “varieties of capitalism” literature, that patterns in institutional variations of capitalist systems have been studied.

Even though mainstream economic analysis has put little effort in understand capitalism as a system, it seems obvious that this intellectual endeavor is fundamental not only for intellectual purposes, but also for practical policy purposes. In particular, it seems fundamental to know what elements of capitalism are fundamental to its existence and what elements can be changed, and possibly could be changed from a normative perspective. Hayek who was prophetic in his analysis of the socialist economy (Hayek, 1945) thought after WWII that the introduction of the welfare state would mean the end of capitalism. His famous book on *The Road to Serfdom* (1944) is mostly about how the introduction of the welfare state in post-WWII Britain would lead to the end of capitalism. In reality, capitalism adapted very well to the introduction of the welfare state. Today, similarly to debates about the welfare state 70 years ago, questions are raised about the link between the introduction of a universal basic income and capitalism. Are they compatible or not? What would capitalism look like

under a universal basic income? Who would have thought capitalism could survive the high tax burdens one has observed since second half of 20th century? Kornai's comparative systems analysis sheds for example light on the inevitability of unemployment in the capitalist economy, raising important questions on social welfare.

Reflecting on this, an economic system is not just about the economy in a narrow sense, but also about the institutions of that system. For example, it has been established that central planning is incompatible with democracy. Similarly, there are many interactions of the economy with the capitalist system's political and legal institutions as well as with the existing cultural values and beliefs. Marx and Weber have given a lot of thought, albeit different answers about the link between capitalism and its "superstructure" and the prevailing culture.

3. Mistakes to avoid in comparative systems analysis.

If one is convinced that a comparative approach can deliver rich insights in comparative systems analysis, there are nevertheless a number of mistakes that one should best avoid in performing such an analysis.

There is no space in this article to list all these mistakes. I just want to point to the most important one. This is what I call the "Negative mirror image" mistake. By negative mirror image, I mean the attempt to characterize an economic system by listing characteristics of one system that are absent in the other system. It is useful to give a few examples. Characterizing central planning by the "absence of markets" and the associated efficiency issues is not wrong, but it does not help analyzing central planning. Similarly, Marxist descriptions of capitalism as market chaos and absence of the "visible hand" of a central planner do not help much to understand capitalism. A similar mistake is often also made in the study of autocratic political systems, as compared with democracies. One thus tends to define and characterize autocracies not in terms of how they really work, but in terms of absence of characteristics of democracies.

The "negative mirror image" suffers at least from two problems. First, it does not deliver interesting insights into how a system works as its characteristics are defined in terms of absence of characteristics that are present in another system. Second, these negative mirror image comparisons are done with a theoretical system. Thus, central planning is compared with a theoretical capitalist system, autocracy is compared with a theoretical democratic system. Since some of those theories may be wide off the mark, in terms of how well they describe reality, the "negative mirror image" framework compares an existing system by the absence of characteristics of another system as described by a particular theory. Therefore, not only does it not provide useful real comparative analysis, but the comparison of a negative

mirror image with a theoretical system may be misleading in the comparison of systems itself.

4. Marx, Schumpeter and Hayek on capitalism.

Before talking about Kornai's view of capitalism, it is useful to remind the main visions of capitalism by some of the big thinkers who were interested in understanding it as a system. I cannot be complete in this article, and will mention only the ideas of Marx, Schumpeter and Hayek. Even then, what follows will necessarily be very schematic and incomplete.

Marx (1867) saw capitalism as driven by greed (the material interests of the bourgeoisie). Greed was at the center of his analysis of the difference between the "commodity relation" (trade in the formation of one's consumption bundle) and the "capital relation" (investment of capital with the goal of increasing one's wealth). Greed was in his view insatiable, leading to a formidable process of capital accumulation to finance profit-maximizing technology. Marx saw the capitalist "superstructure" (formal legal and political institutions, culture) as driven by the class interests of the bourgeoisie, and they formed together a system.

Marx saw capitalism as doomed by its internal contradictions, mainly what he saw as the main contradiction between the global connectedness of production and the private character of asset property. This kind of reasoning is based on Hegelian dialectics characterized by its logical vagueness and rhetorical crispness and does not appear convincing in its logical consequences. That being said, it would be foolish to deny that private capitalist interests in many cases are in conflict with the interests of society at large.

Schumpeter's view was certainly influenced by Marx despite being one of the main intellectual proponents of capitalism. Schumpeter paid less attention to markets, in contrast to classical and neo-classical economists. He emphasized the fundamental role of entrepreneurship, innovation and creative destruction in generating growth. The themes of innovation and creative destruction have been taken over by many economists, in particular Baumol, Aghion and Howitt, and others...

It is less well known, at least among mainstream economists, that Schumpeter, despite being an ardent defender of capitalism, was also pessimistic about its future. In Schumpeter (1942), he predicted that capitalism was about to become more and more bureaucratic and was doomed to choke in the bureaucratization of large corporations and government agencies.

Hayek is a major thinker about capitalism as a system. He strongly emphasized the importance of law (a constitutional order and common law) and the rule of law to protect individual freedom as a basis for economic progress (Hayek, 1960). Hayek also strongly emphasized individual responsibility in conjunction with freedom. We will come back to this when discussing Kornai's concept of capitalism. According to Hayek, society evolves best as a spontaneous order where the role of government should be limited as its actions may often be counterproductive.

Hayek's insights on central planning were truly prophetic. In Hayek (1948), he came up with the idea that central planning is doomed to fail because of the numerous informational issues that should plague the necessary centralization of information required in a central planning system, and that are solved in a decentralized way in a spontaneous market order.

As a classical liberal, Hayek emphasized the danger of too big government encroaching on liberties. He insisted on the importance of fighting to preserve freedom and the rule of law.

5. Kornai's views on Capitalism since *Anti-equilibrium*

Anti-equilibrium represented a big breakthrough in comparative economics and our understanding of capitalism through the systematic analysis of "pressure" (buyer's markets, surplus) and "suction" (seller's markets, shortage), its origins and its effects. Insights on capitalism were derived from a comparison with the socialist shortage economy.

One of Kornai's fundamental conclusion from *Anti-equilibrium*'s analysis of capitalism is that surplus (excess supply) in capitalist economies is the normal state of affairs, not just a feature of business cycles. In contrast, shortage (excess demand) is the normal state of affairs in the centrally planned socialist economy. Surplus produces competition between producers. This competition leads in turn to better product quality, a drive for innovation, advertising to convince consumers to buy one's products, price reductions and discounts. Kornai stated that surplus is a fundamental cause of competition, partly independent of market forces, at least in contrast with shortage, which creates monopoly positions for producers, and where competition is among buyers.

Kornai's theory emphasizes mostly the reproduction of surplus and shortage. Among the causes of surplus versus shortage, he identifies the dominant ownership form in society (Private versus state ownership) as well as the political power structure favoring either.

I emphasized here Kornai's main originality in understanding capitalism in *Anti-equilibrium* but the book contains many other originalities.

First of all, in the book, he takes the transaction as the unit of analysis, not the market. This is extremely insightful as the institutionalist school, with North (1990) and especially Williamson (1975), argued that transactions should be the main unit of analysis, as this would help to understand transaction costs and improve our understanding of how institutions helped either reduce transaction costs or instead increase them.

Second, Kornai introduced the importance of aspirations in determining economic behavior as well as adjustments of aspirations to environment. This is closely related to themes of behavioral economics analyzing how people determine their choices. In connection with this, he talks about the role of conventions and rules of thumb, an element that would be analyzed later, for example by Schotter (1981). In that context, he made the distinction between routine responses in particular situations and larger adaptations to a more changing environment. These are themes that one finds for example in Simon (1947) or Nelson and Winter (1982).

Third, Kornai emphasizes the importance of bargaining in transactions. His analysis is very close to what would be called later "Nash bargaining" but he emphasizes how bargaining power is affected by the fundamentals of the economic system (pressure or suction, i.e. situation of excess supply or excess demand).

After *Anti-equilibrium*, Kornai deepened his analysis of the socialist system in his two major works, *Economics of Shortage* and the *Socialist System*. The major innovation, though not the only one, is the concept of soft budget constraint.

The introduction of the concept of the soft budget constraint and the analysis of its consequences and its causes (the communist regime and dominant state ownership) was a major breakthrough in understanding generalized shortage, its reproduction and its consequences (in the short run, medium run and long run) in the socialist economy. The emphasis is on a disaggregated approach in order to avoid the pitfalls of aggregation of surpluses and shortages. Those two books provided the most comprehensive analysis of the socialist system so far. They also paved the way for an analysis of the capitalist system in contrast to the socialist system.

The two essays in Kornai (2014) provide the most advanced thinking of Janos Kornai on capitalism as a system. The first essay emphasizes the fundamental role of innovation under capitalism and lack thereof in the socialist economy. Gomulka (1986) had already approached the subject. Much of the comparative systems analysis focuses on issues of allocative

efficiency. When it comes, however, to dynamic efficiency, the capacity of an economic system to deliver innovation is of first order importance. Here, it is quite clear that capitalism is very good at delivering innovation while socialism is not. Creative destruction and endogenous obsolescence of capital play a key role in the growth process. Endogenous growth theory (Romer, 1990; Aghion and Howitt, 1997) provides the analytical tools to understand the power of growth compared to static efficiency. It also contains technological optimism about capitalism since the main variable creating growth is the stock of knowledge. So, growth can continue as long as scientific and technological knowledge continues growing.

Kornai's second essay provides his most complete analysis so far on the building blocks of the capitalist system as a system of chronic excess supply. Chronic excess supply is incompatible with supply-demand equilibrium of price theory. The closest formal models that can be used to understand chronic excess supply are search models, but they have not really been used for comparative systems analysis so far. The main innovation compared to Kornai (1971), is not only the emphasis on the dominance of private property and market coordination in capitalism, leading to entrepreneurship, innovation and supply drive. Now, hard budget constraints play a key role in the analysis. Hard budget constraints play a key role in capitalism in curbing demand so that the economy stays in a state of excess supply. Moreover, hard budget constraints play a fundamental role in making the process of firm exit work. Indeed, firm exit is a key ingredient in the process of creative destruction, as it frees resources for new entrants with higher productivity. Downward price and wage stickiness reinforce the effects of hard budget constraints on excess supply, keeping the latter always at a positive level since higher than equilibrium prices maintain a high level of supply and a lower level of market demand. Kornai mentions efficiency wages as a cause of downward wage rigidity, but downward price rigidity and the speed of upward price adjustment are still not totally understood well by economists. When comparing Kornai's analysis with other analyses of capitalism, hard budget constraints are very close to Hayek's emphasis on the role of responsibility in a free society. Responsibility is the flipside of freedom. If we are free to choose our actions, we must also take responsibility for them, according to Hayek. Kornai does not use that kind of terminology or reasoning, but his analysis implies that private property means risk-taking, and thus acceptance of the downside risks.

Kornai also discusses business cycle issues and long run trends of capitalism (the development of welfare state, softening of budget constraints, globalization, information technology, ...)

To sum up, for Kornai, excess supply is the norm under capitalism. The dominance of private ownership and market coordination, together with

hard budget constraints implied by private ownership lead to innovation, competition and creative destruction, generating growth via innovation.

6. My own views on capitalism.

My own views of capitalism were strongly influenced by Kornai when I was a student in the eighties. As a scholar of the transition process, I was forced to think about the capitalist system in a serious way. Rereading Kornai's views on capitalism throughout his career has forced me to think more systematically about my own views of capitalism that are admittedly very partial. Moreover, apart from Kornai, there are a whole series of thinkers who have influenced me.

Since my research on transition, summed up in Roland (2000), I was strongly influenced by the institutionalist school. Here are some fundamental ideas I got from the institutionalist school. First, transactions, not markets or supply and demand, are the basis of the analysis. This is a key insight I understood when analyzing the output fall in Eastern Europe. It cannot be explained by general equilibrium or price theory and the models that explain the output fall (Blanchard and Kremer, 1997, Roland and Verdier, 1999) take the transaction as unit of analysis. A key insight of institutionalism is that legal institutions affect transactions while political institutions affect the rule of law and protection of private property rights. Moreover, liberal democracy, separation of powers (Persson, Roland and Tabellini, 1997, 2000) and press freedom are fundamental to protect freedoms and human rights. Many of these institutions are under attack today in the world. The outcome of these attacks may well determine the future of capitalism.

I realize that many of my ideas about capitalism are also directly or indirectly influenced by Marx's analysis of capitalism that I read carefully at the time in writing a book on *use value* (Roland, 1985). A key insight, nearly trivial in its truth, that I got from Marx is the importance of greed and the related capital accumulation. Kornai calls this the "expansion drive". Marx emphasized the role of capital accumulation in realizing aspirations derived from greed. He analyzed the role of "primitive capital accumulation" since individual capital needed to reach a certain threshold before being able to benefit from the economies of scale described by Adam Smith. Marx also described vividly greed-driven innovation and unbridled expansion towards new inventions, new products and new territories. Some of this improves welfare and living standards, but capitalist expansion also has a negative effect on depletion of resources on the planet. It also tends to destroy primitive and more traditional societies once they come in contact with capitalism. Marx did not, at the time, insist on the environmental consequences of capital accumulation, but their analysis fits well in the Marxian logic of how capitalism operates.

Another idea I took from Marx is that unbridled capitalist expansion favors tendencies towards monopoly that need to be counteracted. This was true in the nineteenth century but is still true in the twenty first century with the advent of the so-called FANGS (Facebook, Amazon, Netflix, Google). Monopolies also use their political power to oppose anti-trust measures that would hurt their profits. Another idea that was present in Marx's writing, but that is very much debated today is that the dynamics of capitalism cannot assure a stable and decent life for workers in the long run whose role is essentially that of a commodity. The welfare state was introduced to counteract this tendency, and these days discussions on universal basic income relate to this fundamental problem faced by capitalism.

The tendency towards increases in inequality à la Piketty and the development of a plutocracy benefiting from this increase in inequality are a fundamental feature of capitalism.

Another theme present in Marx is the recurrence of global financial crises. These crises have the potential to become ever more severe with the higher interconnectedness of firms and financial markets. The occurrence of these crises relates to hardness of budget constraints but also to mass psychology. Fortunately, the Great Depression produced Keynesian macroeconomics, whose insights proved already extremely helpful in the Great Recession of 2008. Nevertheless, financial instability and the occurrence of big crises are a big vulnerability of capitalism. Even the Great Recession of 2008, despite good monetary and fiscal policy, in the US at least, led to major losses of jobs and housing for millions.

Another important idea present in Marx is the importance of class interests in politics. Government in capitalism is not a social welfare maximizer like in Pigovian public economics, but it is also not the Leviathan of public choice theory. In my view, the best way to think about government under capitalism is that it is a locus of influence activities by class interests and special interests. In many policy areas, special interests manage to defend monopoly positions and special interests of particular capitalist groups. Worker interests are also defended, in particular via trade unions. Democracy, with the principle of "One man, one vote" (one person, one vote) has helped the majority of poor correct income inequalities via the political system. Universal suffrage inexorably led to the introduction of the welfare state.

Where Marx was wrong, of course, was to think socialism and central planning could solve the problems of capitalism. The failures of socialism and central planning have helped us recognize that capitalism is necessary to obtain growth and prosperity. These failures have left us with the difficulty to grapple with the trade-off between preserving the dynamic properties of capitalism and simultaneously making progress in social welfare. Globalization with rule of law at the international level together with

democracy at the country level can help keep that balance, but there are several caveats. First of all, the international rule of law is still fragile, which means that the global economic order is vulnerable to disruptive shocks. Misguided protectionist tendencies, that are becoming stronger by the day in advanced industrial economies, are difficult to counteract. There is also no institutional mechanism to protect people from capitalism's destruction of the planet's resources.

Schumpeter has of course been an important source of inspiration for my thinking about capitalism. As a student of the socialist system, I became acutely aware of its failure to generate innovations, and, *mutatis mutandis*, of the importance of innovation and entrepreneurship in generating growth, key ideas expressed by Schumpeter.

These themes are well known. One idea that is less well known was Schumpeter's pessimism about the future of capitalism. In *Capitalism, Socialism and Democracy*, he pointed to the bureaucratization process that was taking place both inside large corporations and government agencies. He thought that this bureaucratization process was inevitable and would destroy the positive elements of capitalism, especially the dynamics of innovation and creative destruction.

Schumpeter saw this as a slow and irreversible process towards socialism. In hindsight, he was blatantly wrong, but it is nevertheless worthwhile discussing some of Schumpeter's ideas. The progress in development of technology and the greater diversity of products and services associated with economic development substantially increase the informational requirements of coordination within firms, between firms, within government agencies and across governments. Too little attention is paid to this. It is generally known that the increasing complexity of economic relations became the Achilles' heel of the socialist economy (Nove, 1977; Roland, 1989, 1990), vindicating Hayek who had predicted the socialist economy would know a problem of information overload. Too little attention has, however, been paid to the issue of complexity in advanced market economies. Take international trade agreements. The text of such agreements has become increasingly long over time. The same can be said of legislation in advanced democracies. Brexit made it clear 1) that divorce from the EU is complex, 2) so is the negotiation of a new relationship between the UK and the EU. The issue of complexity is easy to understand. For every new product, the number of informational links necessary to manage becomes ever larger as the economy develops. These links are usually managed in a decentralized way in a Hayekian way, but, to the extent that any new informational link in the economy involves a management cost, however small, these informational costs should grow exponentially with the level of economic development. This should reduce marginal returns significantly. Inside government, the issue of complexity is even more severe as

governments must manage a large amount of informational links with the economy. Think only of financial regulation. The 2008 crisis made policy-makers and the general public acutely aware of the need for financial regulation. Nevertheless, there is no consensus among experts about what optimal regulation should look like. To a large extent, that is due to the fact that financial regulation issues are very complex. In a celebrated book, Gordon (2016) has documented the growth of total factor productivity over time in different economies and found that the IT revolution did not increase TFP as much as the technological revolutions of the early twentieth century. If this is indeed the case, it is quite possible that the IT revolution has substantially decreased the costs of informational links, while not decreasing complexity.

I have mentioned above how my thinking about capitalism was influenced by great economists. Let me mention some more personal insights that I have developed in recent years.

A first insight is about the importance of democracy for the survival of capitalism. I am aware that this is controversial, but I became more and more convinced of it over time. Democracy not only protects freedom, of fundamental value in itself but also for successful economic growth. It also helps collective action of the majority of poor to correct the inequalities of capitalism. This is a property that may not be seen as desirable by many. Nevertheless, it is in my view not only important for its intrinsic value (reduction of inequality) but also more generally for the political sustainability of capitalism, a point to which I come below. A point that has not, in my view, made sufficiently is the positive role of democracy in mitigating the capital levy problem. The capital levy problem itself has not been given enough attention in economics (see for example Persson and Tabellini (1994)). The problem is related to the issue of lack of government commitment. Before an investment has been made, the ex ante elasticity of capital to taxation is very high. At that stage, capital has not yet been transformed in physical capital and it is very sensitive to variation in tax rates on capital in particular countries. Based on public economics, the tax rate should be low on tax bases that are highly mobile. Once a capital investment has been made, its elasticity to taxation becomes essentially zero as the capital investment is now a sunk cost. If the government lacks commitment, it should promise a low tax rate ex ante, but will be tempted to charge high tax rates once investments have been sunk. As a consequence, lack of government commitment should lead investors to shy away from investing despite ex ante promises of low tax rates. Autocratic governments have in general issues of lack of commitment, and the capital levy problem should have negative effects on investment in autocracies unless autocratic governments are able to come up with credible mechanisms for commitment to avoid predatory behavior. Democracies tend to solve this commitment problem much better than autocracies. Tax rates may change in democracies,

but this happens only as the result of a legislative process. So, even if the executive branch of government is strongly tempted to tax investments that have been sunk, only the legislative branch of government can make those decisions. The separation of powers inherent to democracies thus provides a strong institutional protection against the capital levy problem.

A second insight relates to modern political economy: How to assure the political sustainability of capitalism? This is an important question that, in my view, has been given too little attention. There is no foolproof solution to the political sustainability issue, but it is reasonable to argue that the dividends of growth need to be redistributed in order to minimize the number of losers. In other words, a sustainable capitalism needs to be inclusive.

A third insight relates to the role of culture in capitalism. Research I have done on the topic suggest that capitalism has fared best in countries with an individualist culture fed by centuries of market development, improvements in protection of property rights, protection from state encroachment, as well as social stratification. The individualist culture emphasizes citizenship, equality before the law, freedom and social prestige is associated to standing out from others. The social prestige motivation gives a cultural motive for innovation that dynamically dominates efficiency advantages from collectivist culture in terms of coordination of production (Gorodnichenko and Roland, 2017).

Individualist culture, citizenship and equality before the law are also congruent with the institutions of democracy. We found that democratization tends to occur earlier in individualist countries as collectivist cultures may keep “efficient autocracies” for very long periods (Gorodnichenko and Roland, 2015). Taking culture into account leads one to reject the unilinear trend towards democracy implied by modernization theory (Lipset, 1959).

Individualist culture is also a good antidote to nationalism as it emphasizes individual citizenship and universality of human rights, in contrast to national, ethnic or tribal loyalties.

Individualist culture on the other hand makes collective action more difficult, because the free-rider problem is more acute under an individualist culture. Collective action problems have been ubiquitous in countries with an individualist culture, be it with the Dutch Republic between the sixteenth and eighteenth century, with the European Union, or within international organizations set up to provide public goods at the international level, be it peace, trade, health or protection against climate change.

7. How to think about Chinese capitalism?

This is a special question that needs to be raised given the unique institutional setup of contemporary Chinese capitalism. China is a capitalist economy with a communist political regime emphasizing the leading role of the party. China has had a collectivist culture for thousands of years. Politically, censorship and lack of property right protection are not good for innovation in the long run. China's autocratic political regime deprives citizens from freedom and human rights. All these characteristics contradict some of the elements I put forward in the previous section. On the other hand, China's autocratic system is very stable, as it has solved most problems of government: succession, information and taxation.

There are rules for succession. Mostly, mandatory retirement ensures rotation of leadership at the highest level. Since Deng Xiaoping a leader used to nominate his successor's successor. Deng thus nominated Hu Jintao, Zhiang Zemin nominated Xi Jinping and Hu Jintao nominated Hu Chunhua. Nevertheless, it is unclear whether Xi Jinping will follow that rule.

Informational problems were a big problem under Mao Zedong. The vertical communication channels did not function during the Great Leap forward when provincial leaders did not dare tell Mao about the famine that was developing for fear of retaliation if bringing bad news. Instead, they invented fake news about the "success" of the Great Leap forward. Since that terrible experience, leaders have learned to use alternative communication channels. This is why they tolerate both local protest actions and limit censorship of social media, because they provide alternative communication channels in case the vertical channels do not work properly. During the SARS epidemic for example, whistleblowers played a role in ensuring the diffusion of information.

Taxation is not a problem in China given the large state capacity. The government can afford to charge low tax rates as it commands large control over resources of the large state sector (Gordon and Li, 2005). The leaders of the Chinese Communist Party also have an instrument that is generally absent in advanced democracies, namely large campaign mobilizations, in case of an earthquake or a national catastrophe.

China's collectivist culture is a disadvantage for innovation, as I argued in the previous section, but it is an advantage in terms of coordination. This is probably one of the reasons the collectivist countries from East Asia have become the manufacturing hub of the world. China still has much scope for economic catch up, but given its cultural disadvantage in terms of fundamental innovation, it is doubtful that it will overtake the richest countries of the world in terms of GDP per capita.

The Chinese system has been so far quite inclusive even though it is not a democracy as poorer segments of the population have benefited strongly from the 40 years of fast growth.

What about the capital levy problem? As argued above, this is a weakness of non democracies. In China nevertheless, specific institutional solutions have been found such as the combination of meritocracy within the hierarchy (promotion based on economic performance) and rotation of cadres, as explained in a recent paper by Li (2017).

China, as a market economy, has become very dependent on the world economy for its growth. Without competition from the world economy, Chinese economic dynamism, based mostly on export promotion, would likely fade away and the state sector might take again the dominant role in the economy. In contrast to 20th century communism, China needs strong integration in the world economy and Chinese leaders therefore have no interest in dominating the world. Differences in cultures and political regime with the rest of the world, and especially with advanced Western democracies, will nevertheless undoubtedly lead to frictions that must be managed peacefully

8. Conclusion.

In building a comprehensive theory of the socialist economy, Janos Kornai's comparative analytical approach has also provided many elements for a comprehensive theory of the capitalist system. In reviewing Kornai's thinking about the capitalist system, I have also provided some elements of my own thinking, emphasizing the importance of democracy for capitalism to survive, the issue of political sustainability of capitalism and the role of individualist culture in the capitalist system.

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