Political Systems, Economics of organization, and the Information Revolution (The Supply Side of Public Choice)

Jean-Jacques Rosa

Independent Institute Working Paper Number 27

April 2001

100 Swan Way, Oakland, CA 94621-1428 • 510-632-1366 • Fax: 510-568-6040 • Email: info@independent.org • http://www.independent.org

European Public Choice Society Meeting

Paris, April 18-21, 2001

Political Systems, Economics of organization,

and the Information Revolution

(The Supply Side of Public Choice)

Jean-Jacques Rosa

Institut d'Etudes Politiques de Paris
March 2001

Abstract:

The political history of the twentieth century was characterised by great variability in the social and political systems in both time and space. The initial trend was one of general growth in the size of hierarchical organizations (giant firms, internal and external growth of States) then reversed in the last third of the century with the universal return to the market mechanism, break-up of conglomerates, re-specialisation and downsizing of large firms, the privatization of the public sector, the lightening of the tax burden in a number of countries, the atomization of several States (U.S.S.R., Yugoslavia, and Czechoslovakia) and the triumph of democracy.

This paper extends the Coase analysis to the field of Public Choice. It shows how the cost of information is the basic determinant of the choice between markets and hierarchies. The relative scarcity of information thus explains the great cycle of political organization which lead decentralized and democratic societies at the end of the XIXth century to the totalitarian regimes of the first part of the XXth century, and then brought back most countries towards democratic regimes and market economies by the end of the "second XXth century".

JEL P0, H1, N4
Political systems, Information, Markets, Hierarchies, XX th century.

1. The contribution of history: the twentieth century and the variability of political systems

The hectic political history of the twentieth century was characterised by great variability in the social and political systems in both time and space. But while diversity dominated in space, with some countries adopting dictatorial or totalitarian systems while others remained democratic, in the time dimension a remarkable similarity in the evolution of different systems was observable: in the first part of the century the trend was one of general growth in the size of hierarchical organisations (giant firms, states outwardly expansionist and inwardly increasing their share of total employment and national income) then reversed in the last third of the century with the break-up of conglomerates, re-specialisation and the downsizing of major firms, the privatisation of the public sector, the lightening of the tax burden in a number of countries and the splitting-up of several states (the U.S.S.R., Yugoslavia, and Czechoslovakia) into smaller states, thus increasing the world total.[1]

In the European countries where the industrial revolution developed, the political systems at the end of the nineteenth century had mainly evolved towards liberal capitalism, where the role of the state remained limited and democracy was tending to spread. However the first half of the twentieth century was characterised by a huge increase in state intervention in the economy, while the wars and the great depression led to the democratic regimes giving way to dictatorships and totalitarian, fascist, nazi and communist regimes. International free-trade yielded to protectionism and exchange controls. Nationalism and central (as well as private) planning replaced market forces within national economies tending to autarchy.

And yet, the last part of the century witnessed a complete reversal of the trend, a return to a situation comparable to that at the end of the nineteenth century: the return to open international trade after World War II, the liberalisation of capital movements and freeing of domestic prices, a return to flexible or floating exchange rates after 1971, a general move towards the privatisation of state industries with effect from the seventies, attempts to lower the overall rate of taxation, then market globalisation and the failure and disappearance of the communist regimes.

These developments were general: they affected all countries, albeit to different degrees. They also had the character of a politico-economic long cycle, with all the variables moving in step as time passed, in strong correlation with one another.

Increasing government controls, the decline of the markets and democracy from the last decades of the nineteenth century until the cold war in the fifties, then making way for liberalisation, the withering of statism and dirigisme, the return to the markets and the triumph

[1] The number of independent States in the world went from 74 in 1946 to 192 in 2000 and the movement goes on. For an analysis of this general trend see Jean-Jacques Rosa, Le second XX ème siècle, Déclin des hiérarchies et avenir des nations, Grasset, 2000.

of democracy as of the sixties and more especially the seventies, coming to full bloom in the last two decades of the twentieth century.

This « great cycle » of the political organization, with their national variants, demonstrated that in practice there was room for choice among political systems. In any one country, this choice is likely to vary with the period, and is reversible. As between countries, national choices cover a fairly broad range of situations, but the influence of the "cycle" prevails over the differences that subsist between national political systems. All countries, including the liberal democracies that survived the upheavals of the thirties and forties, developed more government control, more centralisation, more authoritarianism in some fashion. And symmetrically, all countries, including those that had adopted the most centralised of communism's models, by the eighties and nineties were re-introducing privatisation, the free play of market forces and often democracy, within regimes that sometimes remained authoritarian[2]. Just as in the ebb and flow of business fluctuations, the tide of government control carries all boats with it whatever their characteristics, so the positioning of different societies continues to differ as does the breadth of the transformations they do accept.

We propose in what follows to analyse the determinants of this grand cycle of political systems, the key feature of the twentieth century.[3] We seek to identify the universal causes of the general rise in *etatisme, dirigisme* and imperialism in the first part of the century, followed by the mysterious triumph of capitalism (Paul Krugman, "Capitalism's Mysterious Triumph", Nihon Keizai Shimbun, 1998) and that, no less mysterious, of democracy (Francis Fukuyama) in the second half. These determinants are economic and belong, more specifically, to the economics of organisations.

2. The fundamental question

The existence of a choice of political (or "institutional") systems implies that there exists a range of elements to choose from. From the economist's perspective, the definition of a choice implies that of distinct terms, items that can be selected in variable combinations on the basis of their respective costs and advantages, that can then be evaluated. In what terms are choices of political systems in the broad sense (i.e. systems of organisation of societies) usually evaluated? What is it that one chooses? And in what dimensions can one describe these choices?

---

[2] As the example of China, and even Cuba, testifies.

[3] The determinants of the evolution through time of various societies mays also possibly explain the diversity of national systems. But there may be other differentiating factors in national systems which remain stable through time (geographic characteristics, for instance, as mentioned by Jared Diamond in Guns, Germs and Steel, or those stressed by Jeffrey Sachs (   ) which explain the disparities in levels of development. In that case, the great cycle determinants would differ from the determinants of permanent differences in political systems.

A/ The inadequacy of existing analyses

The elements of choice that have been used in the economic and political debates on comparative systems are societies seen *en bloc* as “models”, examples to be imitated, Weberian “ideal types”, but whose comparative costs and advantages are difficult to identify because of their multi-dimensional character.

All the century’s political and ideological debates were organised around the clash of ideas, the choice to be made, on an all or nothing basis according to their advocates, between major “ready-made” systems, hardly modifiable in their workings because of the internal cohesion they were supposed to possess by virtue of the complementarity of their component parts: socialism, capitalism, fascism or nazism and corporatism, each claimed absolute superiority which, if borne out, would logically lead to a monopoly in the organisation of all societies on the planet, the exclusive and universal domination of the ”model” concerned.

Nevertheless, the complementarity of their characteristics, the necessary coherence of the national models observed, was not established by analysis. No more than the universal domination of one single national model whose superiority over all others had been proven. Thus the list of reference systems may vary according to the observers and commentators, as they are not defined analytically in terms of an exhaustive list of necessary features. The packages of organisational characteristics these national models represent correspond in reality, in each case, to the practical experience of a particular society at a given point in time, but not necessarily to any inevitable combination that imposes itself upon us. Thus some countries have been taken as the example or archetype of a solution for others: Nazi Germany, Fascist Italy, even Franco’s Spain or Vichy France for fascism and corporatism, Soviet Russia for communism, and the United States for capitalism, with Sweden too for social-democratic capitalism and, further back in time, Yugoslavia as the example of socialism as a temperate autocracy (the so-called “human face” socialism).

In fact, these are *ad hoc* classifications which do not correspond to discrete categories but rather to particular (national) cases, kind of “niches” regimes located in an area of choice defined in several more fundamental dimensions. So much so, that different names may often cover similar characteristics. Communism and fascism, for instance, both have recourse to authoritarian decision-making machinery, while condemning democracy. Both models, to different degrees, call for state control of the economy. Similarly, U.S. capitalism and European corporatisms have in common their compatibility with democratic politics and the maintenance of a sizeable private sector in the economy.

These “ready-made” systems of “ideal types” are themselves packages of fundamental characteristics, just as products, in Lancaster’s hedonistic analysis, are packets of characteristics that constitute the true underlying objects of choice.[4] In reality, there is a blend of the characteristics of “pure” systems, each combination being specific to each nation and each period of time.

---

[4] An analysis developed by Sherwin Rosen in “Hedonic Proces and Implicit Markets”, Journal of Political Economy, .

What then are these characteristics which define at a more fundamental and more general level the universe of choice of institutional systems? The multiplicity of variables used in the description of political systems is usually reduced to just two dimensions enabling the variety of the range of organisation of societies to be described. These two dimensions correspond to the traditional frontiers of economics and political science as they separately emerged in the nineteenth century: the dimension traditionally known as “economic”, defined in terms of who decides on the management of the production of goods and services, and the dimension known as “political” being that defining the spread of control of collective decisions, (essentially in modern times those implemented by the state)[5], measured on the democracy-autocracy axis.

In practice, in the literature of economics, the range of systems is usually pruned down to the “economic” dimension alone, that is to say, systems are distinguished by their answer to who decides about production. And this question of the allocation of production decisions is itself reduced to an even simpler choice between state ownership and private ownership of the means of production. All systems can thus be classified along a single scale in terms of the role of the state in the economy measured, for example, by the total amount of tax levied from the national income, all other activities going into the ragbag category of “private sector”. This latter concept is itself imprecise, if not confused, because it includes *inter alia* both firms and markets, two institutions that operate in fact quite differently.

But even when limiting themselves to their traditional domain to reduce the complexity of the problem, economists have been hard put to it to formulate satisfactory theories on the choice of systems reduced to the allocation of ownership between the state and those operating in the private sector.

As one of the acknowledged specialists in the field, Dennis C. Mueller, stresses in his classic text reviewing the work done in this area, Public Choice II [6]:

> « Much attention in both lay and academic discourse has been given to the question of the proper size of government and the reasons for its growth. Public choice, the economic analysis of political institutions, would seem to be the natural tool for answering these questions, and in recent years it has frequently been employed in this task.” (Mueller, op.cit., ch. 17, page 320).

The author finds in the literature five main explanations for the size of the state:

> « The first three hypotheses (the government as a provider of public goods and eliminator of externalities, the government as a redistributor of income and wealth, and interest groups as inducers of government growth) are essentially drawn from a classical theory of the democratic state (Pateman, 1970)[7]. Ultimate authority lies with the citizens. The state exists to carry out “the will of

[5] In fact, as pointed out by several economists, including Gary Becker, economics is not defined as an area of study but as a method of analysis, that of the theory of choice. Indeed this view underlies the Public Choice approach, or the economic analysis of the “political” field.

[6] Dennis Mueller, Public Choice II, A Revised Edition of Public Choice, Cambridge University Press, 1989.

[7] C. Pateman, Participation and Democratic Theory, Cambridge University Press, 1970.

the people". State policies are reflections of the preferences of individual voters. In the public choice literature, the state often appears as simply a voting rule that transforms individual preferences into political outcomes. Most of the classic works on public choice – beginning with Arrow (1951), Downs (1957), Black (1958), and Buchanan and Tullock (1962) right up to Groves and Ledyard (1977a) [8] are based on this citizen-over-state view of the polity.

The fourth and fifth hypotheses reviewed here (bureaucratic power as inducer of government growth, fiscal illusion as enhancer of government growth) place the state above the citizens. It is the preferences of the state, or of the individual in government, that are decisive. Citizens and political institutions constitute at most (loose) constraints against which political leaders and bureaucrats pursue their own personal interests. This state-rules-citizen view of politics underlies Puviani's (1903) work and characterizes that of Niskanen (1971) and Brennan and Buchanan (1980) [9].

… both views might be correct to some degree. Government officials and bureaucrats may have some discretionary power to advance their own interest at the citizens' expenses, but citizens' preferences, as registered through existing political institutions, may also constitute a consequential constraint. If so, then all the five hypotheses may help to explain the size and growth of government." (Mueller, op.cit., page 344).

These economic models do not pass the test of empirical verifications according to Mueller, including those of « a couple of studies (which) have attempted to test for the relative strength of demand and supply factors »:

« Although the results for a single country often appear plausible and statistically defensible, when one compares the different time-series studies one finds little overlap in the key explanatory variables. Thus, little consensus exists in what the key determinants of the growth of government are. Some variables, like the relative rise in the price of publicly provided goods, appear to be significant determinants of government growth. But, even a generous allowance of their impact leaves much of the growth in government, or relative disparities in government sizes across countries, unexplained (Borcherding, 1977a, 1985). What appears to be needed are new theories to explain the growth of government, or more imaginative testing of existing theories (Lowery and Berry, 1983)"[10], (Mueller, op.cit., p. 346).

[8] K. Arrow, Social Choices and Individual Values, , 1951. A. Downs, An Economic Theory of Democracy, Harper and Row, 1957. D. Black, The Theory of Committees and Elections, Cambridge University Press, 1958. J.M. Buchanan and G. Tullock, The Calculus of Consent, University of Michigan Press, 1962. Groves and Ledyard, "Optimal Allocation of Public Goods: A Solution to the 'Free Rider' Problem", Econometrica May 1977, pp. 783-809.

[9] A. Puviani, Teoria della illuzione finanziaria, Palermo, 1903. W. Niskanen, Bureaucracy and Representative Government, Aldine, 1971. G. Brennan and J.M. Buchanan, The Power to Tax: Analytical Foundations of a Fiscal Constitution, Cambridge University Press, 1981.

[10] T.E. Borcherding (ed.) , Budgets and Bureaucrats: The Sources of Government Growth, Duke University Press, 1977a, "The Causes of Government Expenditure Growth: A Survey of U.S. Evidence", Journal of Public Economics, December 1985, pp. 359-82, D. Lowery and W.D.Berry, "The Growth of Governement in the

Let us add that these theories are even more hard put to it when it comes to accounting for trend reversals in the overall development of political systems, for example, the rise of *etatisme* at the beginning of the century or the return to liberalism at the end of the period:

- On one hand, because these theories are fundamentally static: those relying on the specificity of public goods (Samuelson), as those on the monopoly power of officials and bureaucrats (Niskanen's theory and the hypothesis of fiscal illusion) postulating an advantage by its nature asymmetrical, permanent and non-cyclical. There is at present no theory to explain the increase and decrease in the monopoly power of the bureaucrats or the increase and decrease of fiscal illusion.

- On the other, because the theories on the growth of the state based on demand factors, which can work in principle both in favour of state increase and decrease, appear in fact fairly irreversible in periods of near continuous growth of *per capita* income and, in the absence of any significant turnaround in the relative prices of public and private goods and services, it is hard to see why the demand for public goods or for redistribution[11] or for the reduction of externalities would decrease after having increased. At best, one might concede that state intervention had overshot its optimal level and returns to equilibrium after some excesses, but there again one would need to explain the initial disequilibrium and the subsequent tendency to return to equilibrium. It is more likely that the theories we have are not adequate, as Mueller maintains.

These difficulties come as no surprise, since the size of the state or the state sector in the economy is only one of the aspects of the multi-dimensional reality of political systems and there is nothing to say that this variable can be explained in isolation from all the other aspects of political institutions.

United States: An Empirical Assessment of Competing Explanations", American Journal of Political Science, November 1983, pp. 665-94.

[11] In the analysis by Meltzer and Richards ("A Rational Theory of the Size of Government", Journal of Political Economy, 1981, pp. 914-27) demand for redistribution depends on the distribution of primary incomes, compared with the equalitarian distribution of votes. To explain recent tendencies towards a reduction of State intervention, it would need to be demonstrated, and this has not yet been the case, that the distribution of primary incomes has changed considerably to justify a reduction in the demand for redistribution, assuming that the model were capable of generating this possibility.

Thus, as we saw, the other term of this very simplified choice, "the private economy", embodies a reality itself complex and heterogeneous. The private economy includes in particular two quite different elements, firms and markets, which evolve in opposite directions rather than in parallel. When the firms expand, the market area shrinks (mainly but not exclusively the business-to-business markets) because beneath there is a situation of rivalry and alternative relationship between these two types of institutions, as Coase points out.

The description of societal choices just in terms of a choice between "State-private" or "State-private entreprises" or else "State-market" is thus curtailed with respect to the real institutional choices based on the selection of optimal size of all hierarchical organisations as an alternative to the markets. It is therefore this last alternative which appears to be much more fundamental than that which presents the state as a point of reference in all choices of social organisation.

<u>In other words, the size of the State alone is not an adequate foundation on which to define the choices of political system</u>. The definition of choice in terms of an alternative between the State and another option fails to encompass all the ways in which production may be organised. The three above-mentioned alternatives totally disregard the institutional options within the "private sector" in the first case, the existence of markets in the second, and the existence of private firms in the third.

Thus any model seeking to represent societal choices based on a choice between the State and other aspects of political organisation is, in each case, a mis-representation. Hence the absence of any completely convincing theory of the choice of systems in current literature. Which also accounts for the unsatisfactory results of the empirical tests of these poorly argued theories.

The situation is even less satisfactory in "political" terms, in the narrowest sense, i.e. the way in which the production choices of collective services are controlled. The explanations for the degree of democracy or authoritarianism, and in particular those for totalitarian regimes, which have played a pivotal role in the mid-twentieth century, remain very weak.

It is only very recently that economic theories of dictatorship and democracy, and in particular those of Tullock (<u>Autocracy</u>, Martinus Nijhof, 1987) , Wintrobe (<u>The Political Economy of Dictatorship</u>, Cambridge University Press, 1998), North and Weingast ("Constitutions and Commitment: the evolution of institutions governing public choice in seventeenth-century England", <u>Journal of Economic History</u>, 1989), Barzel ("Parliament as a wealt maximizing institution: the right to the residual and the right to vote", <u>International Review of Law and Economics</u>, 1997), Ekelund et Tollison (<u>Politicized Economies: Monarchy, Monopoly, and Mercantilism</u>, Texas A&M University Press, 1997), have been formulated. None of their work has given rise to a generally accepted overall theory. They frequently incorporate explanatory factors of a circumstantial and particular nature. These factors are not those that Public Choice literature has used to explain the growth in the size of States. And there is, as yet, no consensus on an exhaustive list of determinants of actual political systems.

Thus, in the absence of any generally accepted economic theory, commentators all too frequently fall back on explanations of the choice of public systems based on ideologies, i.e. (arbitrary) preferences of citizens and their leaders. These preferences have to be regarded as arbitrary as we are unable to explain either their determinants or their developments.

The most frequent explanation for metamorphoses in political systems therefore refer to changes in the prevailing ideology. The rise in socialist, dirigiste and anti-democratic ideologies throughout the first part of the century apparently led to all pervasive state control of the economy and of society and the adoption of authoritarian political regimes, whilst the liberal (in the european sense) revival since the end of the seventies would explain the greater recourse to the markets, privatisation and globalisation heralding the decline in the State's role whilst democracy asserted itself as the only acceptable way in which to control political decisions

In this scheme of things, the choices of society's organizational architecture are made solely in the "political sphere" and are accordingly determined by the a priori (or "ideological") preferences of citizens and their leaders and are subsequently applied to the "economic sector", via a more or less state-governed organisation of production. Thus the changes which took place during the last century allegedly stemmed from changes to the dominant ideologies and political philosophies adopted by individuals and governments. The political determines the economic.

An important example of this ideological argument is provided by Bradford De Long in his review of Mark Mazover's book, <u>Dark Continent : Europe's Twentieth Century</u> [12]. DeLong wrote the following on his website :

> « ..Europe in the first half of the twentieth century was a horrible, alien place - that people did not think like we do today, that blood and gore were welcome by many, that it is only by sheer dumb luck that Europe today is (mostly) peaceful and (mostly) rich. We could well and easily be facing today not the Europe we know, but a Hitlerite or Stalinist alternative.
>
> ….Europe is the continent inhabited by the most bloodthirsty humans ever. It was the Europeans of the first half of the twentieth century who slaughtered a larger proportion of their fellows than anyone else, anywhere, anytime.
>
> … The driving forces behind Europe's holocausts were ideological. Ideas were in the saddle and rode mankind."

This thesis otherwise presupposes a change in human nature, or at least the possibility that aberrant or inhuman forms of behaviour were temporarily adopted, which were in any event deeply wrong.

This is an idealist or "platonic" thesis that recalls Keynes's aphorism concerning the ideas of some academic scribbler which long afterwards determine the policies of governments. It also

[12] Knopf, 1998.

corresponds to Max Weber's view of the determinant role of ideologies, and religious ideologies in particular, in organising and developing the economy.

But can one prove that ideas are the primary cause of institutional change and not just a simple echo of a propaganda argument or supplementary contention in respect of institutions whose determinants lie elsewhere ? This is the viewpoint of Robertson, (quoted by E.L. Jones in Growth Recurring, Economic Change in World History, Oxford University Press, 1988, p.101,) one diametrically opposed to that of Weber.

The Weber-Keynes thesis is obviously flattering for producers of ideas and doubtless corresponds to an overrating of their own role by intellectuals who, in the same vein, see themselves as the ultimate determinants of social change. But it underrates the fact that ideas serve as an auxiliary justification for political choices, the reasons for which may lie elsewhere. In the event of war for example, politicians and military leaders seek explicitly to harness people's minds through propaganda. Ideas are therefore instrumental. Intellectuals, by virtue of their position, are involved in ideological warfare, i.e. in the ideological dimension of war. But these wars may in the first place be wars between States whose material interests and survival are at stake, and not primarily wars of ideas. These are wars between nations and leaders for the control of land and peoples rather than wars between systems.

The ideological thesis only shifts the burden of explanation towards that of changes in preferences. And we are already familiar with the objections that economists would make to this kind of approach: firstly that they are not verifiable because there is no way of rigorously gauging preferences; on the other hand that they only replace the question of changes to institutions by an explanation of changes of preferences; finally they question the direction of causality between institutions and preferences, institutions being capable of determining preferences just as preferences may determine institutions. Thus, was the apathy of the Russian people brought on by Stalin totalitarianism, or was it Czarist authoritarianism and subsequent Soviet totalitarianism which brought about or compounded the apathy of the Russian people ?

Furthermore, all the theoretical ventures from the economists leave room for a certain duality in the approach to political systems: the State's intervention in the economy on the one hand, and the dissemination of control of political decisions on the other. And they, notably, do not propose any joint explanation of the structure of the political system (in terms of democracy versus authoritarianism) which hitherto was only rarely subject to economic analysis, while throughout history there has been a frequently observed correlation between increasing market influence (with several variations which are more bound up with the differences between one society and another than with the course of events within a single society).

Economists who have taken a close look at trends in politico-economic systems, such as Schumpeter, Hayek and Friedman, have pondered on the independence of the political and the economic dimensions; Schumpeter argued that State centralisation of the economy, socialism, is compatible with democracy, and decentralisation of control. But Hayek and Friedman subsequently held, on the contrary, that socialism leads to the withering of individual freedoms and consequently of democracy, although it is possible for political democracy, through its very own mechanism, to lead to socialism, without it being possible to prove this reverse causality in a generally accepted manner, however.

In practice, we have seen that the various characteristics of political societies evolve in concert with the great institutional cycle which closely associates government control, a decline in democracy and increases in firms size. These three aspects undoubtedly need to be explained at the same time, unless one assumes that pure chance is responsible for the parallel nature of the developments observed, which is difficult to demonstrate.

B/ The fundamental choice in the organization of production : markets vs hierarchies

The difficulties we encounter in explaining that the variations in the dimension of the State's influence in the economy stem from the fact that the variable selected, the degree of State control over production, which is supposed to represent a concise indicator of the choice of a political system in the broad sense, is not so in reality. Nor is it in fact subject to the direct and deliberate choice of the economic agents [13]. They do not directly choose between the share of production that they would like the State to take on and the share which would be left to all private activities. We can postulate that most individuals are indifferent as far as this is concerned, except the most politically militant. According to economic theory they are ready to select the most advantageous product or service offering, be it from a private or public sector provider.

Moreover, the activity of the State is not limited, once and for all, to a specific list of goods and services, any more than a firm is definitively bound to a specific product. Which means that it is pointless to look on the demand side of its services for the determinants of growth in turnover of the State compared to that of private firms, any more than the changes in demand for a private good or service can alone explain the way a market is divided up between competing entreprises. It is therefore the cost functions, on the supply side, that determine the relative sizes of a sector's competing firms. It is similarly on the supply side of Public Choice that the analysis of developments in systems of organisation must be based.

In this approach, the fundamental choice on which political or economic systems are based, is not that of the identity of the producer (the State or private agents) by the consumer, but the way in which producers organise production, i.e. the structure of supply. This is the choice which, in the introduction to traditional textbooks on comparative economic systems, is embodied in the fundamental question: who produces what, and how? "Who" referring here either to a small or, conversely, a large number of decision-makers.

A system is defined by the set of relations amongst specialized producers, which relations coordinate their complementary productions to supply goods and services to the consumers. Consumption itself remains, for the most part, individual in nature and is thus not subject to a specific form of social organisation.

---

13 Except in the case of a referendum on nationalization, or in the opposite direction, on privatization..

A system is defined by the degree to which production is integrated within units of varying scale and by the varying degree of development of markets where transactions between these production units take place.

Now this organisation of production, this overall architecture of supply, flows from a choice with a universal basis, that of the kind of bilateral relation existing between all individual producers so as to coordinate their specialised productions: either market or hierarchical transactions. There is an economic analysis which tells us how choices of the organization of any production are made, a choice between a hierarchical organisation and a market organisation. This is Coase's analysis (1937) on the nature of the firm. It shows that the firm uses the hierarchical decision-making mechanism to reduce transaction costs which are higher in the market mechanism. The choice of one or other of these mechanisms depends on the level of transaction costs, the market making intensive use of transactions while the integrated hierarchy economizes on them. And as the two mechanisms are substitutes, when one makes use of hierarchies one does away with markets and vice versa.

The choice between market and hierarchy is exhaustive at an individual level. It describes the only two possibilities of productive cooperation between two individuals; by adding up, these individual choices determine the optimal size of hierarchies and consequently that of markets. The more producers there are that choose the hierarchical relation, the larger the hierarchies are on average and the smaller the number of market trades.

There is therefore a continuum of organisational formats in whole societies, ranging from those where there are only individual entrepreneurs to those where there is only one vast hierarchy bringing together all the individuals in the society. The degree of hierarchisation within society also establishes the degree of concentration of decision-making, since in a hierarchy one individual decides for all, whereas on the market place everyone decides for himself. The degree of hierarchical development therefore determines the distribution of decision-making throughout society and thus the answer to the question "who produces what, and how".

The fundamental choice of systems therefore hinges on the size of hierarchies, which corresponds to the number of decision-makers. If there are few decision-makers, there have to be many subordinates, who have to be brought together in huge hierarchies, each with its manager or decision-maker. The basic choice of systems consists in determining the size of each hierarchy which leads, given the resulting average size in the population of hierarchies, to the number of decision-makers within society and, by the same token, to the (residual) role of the markets.

So we have to distinguish along the production axis, which defines economic systems, between predominantly bureaucratic societies, centralised in nature, (those where there are few decision-makers and accordingly a reduced number of very large hierarchies and where the principle of authority and subordination governs most of the production process) and societies which are market-driven and decentralised (with a large number of decision makers and thus small hierarchies trading with one another through the market).

One can, accordingly, calculate the rate of centralisation of decision-making as the ratio of the number of decision-makers (at the top of a varying number of hierarchical structures, be they private or public) to the total number of producers (the working population) for any group or society.

This rate of centralisation (which is the classic coefficient of concentration) varies between zero and one. It equals one in the case of perfect decentralisation (where there are only individual entrepreneurs deciding for themselves, hence as many decision-makers as workforce members) and tends to zero when a single person takes all decisions for a very large number of subordinates (as is the case for a single giant firm or a totalitarian economy).

The rate of centralisation depends on the average size of hierarchies (private and public) within society. When the average size is very small, there is a very large number of small pyramids and thus many decision-makers. When this average size reaches the size of the total population, there is only room left for a single pyramid, one single huge conglomerate within society. Most generally this unique conglomerate is the State itself. But there may also exist highly centralised private economic systems, dominated by a few very large firms, or even a single one, as is the case in some under-developed countries, the so-called “banana republics”.

Thus one can define a single axis on which all existing economic systems are located. This axis is defined by the degree of centralization of production of the overall economy and not by the share of state ownership in the economy.

C/ The State as a firm and the organizational determinants of its size.

The degree of State control of the economy, which is poorly explained as the hypothetical choice between the State and the private sector, (as the latter is not a homogeneous whole from an organisational point of view) can be readily analysed in terms of a choice between markets and hierarchies. The State is a hierarchy which produces services, in the same way as the various other types of firms, be they profit-making or not. It is subject to the same constraints and its development responds to the same determinants. Generally speaking, all hierarchies will grow as transaction costs increase and dwindle as transaction costs fall and market transactions, consequently, increase.

Therefore one should not look to the particular kind of services that the state provides, or how it organises its property (i.e. its control, be it democratic or autocratic), to find the reasons for its growth. One has to seek them among the general determinants of growth of all firms in the 20th century. According to the transaction costs theory of the firm the growth of the State is explained by the initial increase in costs during the first part of the century and its recent decline is due to the recent decrease of these costs, following the information revolution. It then becomes possible to explain also the parallelism between the development of the large-scale entreprises and that of the largest of them all, the State, during that same period. The first part of the twentieth century was both the time of State expansion in geographic terms as well as in the share of the national income of the economies they control and that of the emergence of huge private corporations, while the area of intra-national and international markets was shrinking.

Accordingly, the theory of the firm extended to the State - the supply side of Public Choice - provides us with an explanation of the great institutional cycle of the twentieth century.

The simultaneous development of very large States and huge private entreprises explains both the development of corporatist systems which organise collusion between these very large hierarchies and which largely repudiate the market mechanism, but also the increased rivalry between private firms and States, each of these organisations seeking to harness for its own benefit the economic transactions previous handled by the market. The collusion between firms and States does not rule out competition between these two forms of hierarchical organisation. The conflict between private shareholders and managers on the one hand, and State managers, on the other hand, is embedded within the general development of hierarchies to the detriment of markets.

Before examining the consequences of this concentration of decision-making within the economy on the way in which decisions are controlled (the "political" domain), we need to briefly justify the assertion that a State is a firm.

It is quite clear that the State is a hierarchy which produces certain goods and services, and primarily services which have a definite public character (indivisibility, no rivalry in consumption, non-excludability). But can one really place the State and the private entreprises in the same theoretical category ? Can one treat the State exactly like any other organisation? Does one not require, as far as it is concerned, a particular form of analysis?

The nature of the State

Coase defined the «nature of the firm» as a hierarchy, as opposed to a market mechanism. But his analysis applies as much to all organisations which aim to produce services. Alchian and Demsetz[14] have thus identified the various types of firms that exist such as partnerships, mutuals, profit-making corporations and others, for example sports clubs and churches, all productive organisations to which we can add States.

The production of services and the hierarchical link define a (hierarchical) "organisation" to which it is better to refer as a "firm" in so far as the term organisation is used for all forms of organisation, including those which are not hierarchical, like the markets.

[14] "Production, information costs, and economic organization", American Economic Review, 1972.

The same is true with the "nature of the State" as with the nature of all other firms. As a hierarchical productive organisation, in this respect similar to all others, the State is, in the main, a firm. Not one which is directly profit-making, but a firm nonetheless, a kind of mutual, for clients come to know the price ex post (the amount of taxes) and may benefit from discounts (tax reductions) in the event of an operating surplus appearing during the financial year. As with many mutuals, the State is a managerial firm where the interests of the managers frequently prevail over those of the client-owners because property rights are reduced (simple usufruct and the absence of the right to sell off the capital), whilst profit is on principle ruled out.

The State is understood here in the broad sense as encompassing all political organisations of a country including all local authorities, as well as the firms in the public sector. As such, it is a conglomerate firm bringing together under the authority of the government a wide range of diversified activities.

Thus the State's production is not limited to pure public goods which are very few in number. But the State enjoys a comparative advantage over other firms in the production of public goods which are mostly impure ("club goods"). This advantage, which leads to private companies frequently giving up the production of such impure public goods although they would have the capability to do so, flows from the monopoly of organised constraint that the State has and which provides it with a major competitive asset and exclusivity in the production of the less impure public goods (national defence, justice, police, forced transfers). The more public the goods are, the greater the advantage enjoyed by the State over its private competitors.

As with any private conglomerate, the State is opportunistic when fixing the scope of its activity. It is involved in all forms of production in which it hopes to generate a surplus. It may, of course, have an initial field of specialisation (pure "public" goods). But if its optimal size increases a great deal, it is prompted to expand into activities outside its core business, such as car manufacturing, publishing, newspapers or insurance and banking.

Each time the cost of the hierarchy falls, all firms grow (see further the "organisation theorem") and the State expands more, thus investing in activities less and less "public" and more and more private and increasingly divorced from its initial comparative advantage. It is not the economies of scale in the production of any particular good which explain the size of conglomerates: these vary from one business sector to another, which explains the differences in size of typical non-diversified corporations of various sectors. [15]

Optimal size may differ for example between banking and catering. But there must also exist general factors which affect the size of most hierarchies, such as those which led to the emergence of giant firms as of the end of the XIXth century, a new and striking trend analysed by Schumpeter and subsequently by Chandler.

The only common factor in the size of entreprises, influencing all of them without exception in the same way, is the optimal size of management, i.e. of the bureaucratic apparatus for managing the hierarchy, and this depends on the level of transaction costs. These are the

[15] As well as, most probably, a part of the differences in size of hierarchies from ine country to another, as far as the sectoral stucture of national production differs from one country to another.

economies of scale of hierarchical administration as a whole. Thus it is the change in economies of scale of bureaucratic hierarchies which determine the common fluctuations in the size of all firms, including the political firms that are called States.

This conglomeral State firm optimises the use of the resources at its disposal. True, in such a mutual with so many members, the citizen-taxpayers detaining limited rights of ownership, the managers are able to give priority to the pursuit of their own interests, to the detriment of those of the client-owners. Nonetheless the government of the State has to provide the various categories of clientele with sufficient satisfaction if it wishes to maintain its decision-making powers in running the organisation, failing which the cost to which it is exposed, in terms of the likelihood (or risk) of losing its hold on power, will increase.

What managers of the State maximise is the surplus that they appropriate, under the constraint and the monitoring of individuals and groups with the power to fire them (the list of which depends on the effective political constitution of the country and the respective powers of the various groups). The managers of the State seek to maximise their revenue, monetary and in kind, while minimizing the risk of being fired, either democratically by a vote, or through a coup d'Etat or revolution. To do this, they have to deliver benefits to the groups and individual citizens by carrying out transfers through the tax system but also through regulations and through cross-subsidies via the production of the public sector goods and services (for example between taxpayers and users of the State railway services, between categories of electricity consumers or among persons covered by the statutory health insurance).

In a managerial firm, growth in sales and production may be the managers' main objective. Such a firm may grow more than a firm closely controlled by its owners. The increase in the size of the State thus may exceed that of well-controlled private companies, shifting the borderline between private and political production to the benefit of the "political" sector of the economy. But private firms and the State can only grow in the long-term to the degree that their management costs fall relative to the operating costs of the alternative production mechanism, the market.

Three statements follow from this conception of the state as a firm [16], differing from traditional conceptions:

a) First of all, the conception of political production is considerably broadened. Its scope is not defined on an a priori basis by a list of goods and services, nor by a list of pure collective goods. There is no fixed domain for the State. Political production is what the State produces

---

[16] An approach pioneered by Lane ("Economic Consequences of Organized Violence", Journal of Economic History, 1958) , Auster and Silver (The State as a Firm, Martinus Nihjoff, 1979), North ("A Neoclassical Theory of the State", in Structure and Change in Economic History , 1981), Olson ("Toward a more general theory of government structure", American Economic Review, May 1986), Hirshleifer ("Anarchy and its Breakdown ", Journal of Political Economy, 1995), Dudley (The Word and the Sword, Blackwell, 1991), Grossman ("Rival Kleptocrats: The Mafia versus the State" in Fiorentini and Peltzman (eds.) The Economics of Organized Crime, Cambridge University Press, 1995), ….

and which enables it to engage in redistribution to bring net benefits to various sections of its clientele so as to maximise its surplus while at the same time staying in power.

b) What the state produces is a variable range of services defining a sector of production amongst others within the national economy. But rather than steel or cars, the initial or core speciality of the State is clearly collective goods in general and especially transfers between groups of citizens: its comparative advantage is at its greatest for goods having a high degree of "publicness". Starting with its basic specialty, the use of organized constraint, the State, in expanding, will gradually invest in activities where its competitive advantage is progressively weaker, only to obtain a very small surplus, if any, in its marginal activity.

b) As a firm submitted to a budget constraint, and whose managers may not be confirmed in their positions by the client-owners at the end of their term of office, the State has to optimise the use of its resources. Governments do not maximise a profit but a surplus that does not appear explicitly. Nonetheless they are well advised to maximise this surplus in order to allocate it efficiently to target groups if they want to stay in power. Becker (1983) models the competition between groups for transfers, leading to an efficient political equilibrium. There is no State in his model because he assumes implicitly that all these transfers can be made costlessly and without managers on a perfectly efficient political market. But if the transaction costs are positive, there will be a hierarchical organisation to manage the transfers in the place of the market mechanism, in line with Coase's analysis. Hence a State and hence a government.

We have thus established what is the « economic » axis along which various political systems can be classified: these are distinguished from one another by the degree of concentration of production decisions, private as well as public. This essential agregate variable depends on the basic choice made independently by all individuals between market production and hierarchical production.

The degree of concentration of production decisions depends directly on the respective development of markets and hierarchies in society. A system with few decision-makers is necessarily very centralised, structured into very large hierarchies bringing together a large number of underlings under the direction of one manager. In fact, the allocation of decision-making affects more the working of a political system than the allocation of ownership (where these differ), since all hierarchical organisations are very similar in the way they function, whether they be owned by the State or by private capitalists. As emphasised by Niskanen and Tullock [17], there is no great difference in the way the large public and private hierarchies operate. A civil servant would not feel out of place in a major corporate bureaucracy.

[17] See Gordon Tullock, Economic Hierarchies, Organization, and the Structure of Production, Kluwer, 1992.

The reason is that in the large organisational pyramids, hierarchical behaviour takes over from market behaviour, which calls for very different human qualities and decision-making rules (command and obedience vs. consensual exchange with decision-sharing), a phenomenon reported by Weber and by Whyte. [18]

But the relative importance of the two production organising mechanisms will also determine the position of a political system on the other traditional axis : that of the degree of control over the leaders, whether leaders of the State hierarchy in a democracy or an authoritarian regime, or managers of a private firm, which could be managerial or controlled by its shareholders. The concentration of production decisions leads to the concentration of the monitoring of these decisions. The centralisation of the economy thus leads to the concentration of « political » power (control), i.e. to authoritarian or managerial regimes.

D/ The organisation of production determines the organisation of monitoring

Any society is defined, on the one hand, by a set of decision-makers and, on the other, by the set of all those who are entitled to designate and monitor the decision-makers, that is, by the distribution of decision-making and the diffusion of monitoring of these decisions.

Thus, two axes define a matrix of systems, characterised on one of them by the degree of centralisation of production and on the other by the degree of democratic dispersion for the monitoring of these hierarchical decisions in society.

A matrix of this kind possesses an infinite number of possible solutions, all practicable in principle if the variables defining the two axes are independent of one another. In such case, one can find real examples of "democratic socialism" as well as dictatorships with a decentralised, competitive economy. Whe know, however, that this is not observed in practice. Moreover, the independence of the two axes is questionable. The choice made along the « economic » axis determines that to be made along the « political » one, as Marx, Hayek and Friedman have suggested. More specifically, the degree of centralisation of the production determines the degree of centralisation of the monitoring of collective decisions.

Accordingly :

1/ The size and the number of hierarchies determine the extent of the domain to be monitored. Large hierarchies imply diversified finance, hence an agency problem between the suppliers of funds and the managers, which pre-supposes monitoring of the latter by the former. The problem does not appear in a highly decentralised production organization where the producers are individual entrepreneurs.

[18] Whyte, The Organization Man, .

2/ The size of the hierarchies also determines the dispersion of monitoring among the population, since :

a) The larger the hierarchies, the more subordinates there are in society. Now the individual values that the proper functioning of the hierarchy requires are those of submissiveness and obedience (see for example Herbert Simon, Administrative Behavior,). When the number of subordinates in society increases, subvissiveness prevails. And it is very difficult for any subordinate to practise obedience towards management and at the same time monitor what management is up to, which calls for a spirit of criticism, independence and questioning, not highly appreciated in the hierarchical production system.[19]

The choice of organisational form determines both the production system (hierarchical or market) and the role attributed to the individual in society together with the qualities he is called upon to practise. Hierarchies and markets require different behaviours and reward different individual characteristics (socially acceptable behaviours). And these socially rewarded individual qualities (initiative and individualism in the case of the market, submissiveness, obedience and conformity in the case of the hierarchy) define in their turn the possibilities of organisation of political control, of monitoring the decision-makers. It is impossible to reward certain qualities in daily professional activity and expect diametrically opposed qualities of the same individuals as citizens controlling the decision-makers. Consequently, when individuals work mainly in large hierarchies, they learn conformity and obedience and then are hardly capable of demonstrating initiative and independence, which are essential for democratic control to work properly. Conversely, if they need to demonstrate independence of mind and initiative in their business on the market, they will not easily submit to orders and authority, a necessary condition for the operation of a political dictatorship.

b) At the same time, the manager must possess this independence and individualism. He must also ensure his directives are adhered to, requiring some degree of authoritarianism. On the other hand, the larger the hierarchy, the greater the agency cost because the large number of owners makes democratic monitoring of the manager more difficult. The large hierarchy is thus likely to be managerial.

[19] It is a classical problem of « cognitive dissonance » in individual psychology.

It follows that the organization of production, including the production of goods and services by the “State-firm” since politics is a sector of production like any other, will determine the degree of dispersion of monitoring for hierarchical productions, be they private or public.

In an economy with highly centralised production the system for monitoring collective decisions will be concentrated in the hands of a few decision-makers. The « political » system in the strict sense will be autocratic or undemocratic.

Instead of politics constituting the determinant (itself unexplained) of the organisation of production, it is the organisation of production, dependent on transaction costs, that determines the role and behaviour of the individual in society : obedience or initiative. It accordingly determines the character of the most appropriate political regime that is practicable in that society.

A society dominated by immense hierarchies needs the submission of individuals. It necessarily promotes a political ideology and a social morale that make the most of this type of behaviour. A society of this kind cannot be really democratic, even if it retains the outward formal trappings of political democracy. On the other hand, a society formed of large markets and small hierarchies must necessarily rely on initiative and give responsibility to generally informed individuals. It promotes the dispersion of decision-making and relies on individuals whose behaviour makes democratic monitoring possible and effective.

The organisational analysis of production systems restores the unity of human behaviour in terms of production and control and hence the close link between the economic dimension of social systems, which is tied to the degree of centralisation, and the specifically political dimension, i.e. the degree of democracy or dictatorship in the monitoring of collective decisions. In this way, the unity of analysis of economics and politics that constituted the original programme of Public Choice is restored. The organisational choices are made in the same terms in the two dimensions of the distribution of decision-making and the distribution of control.

From this viewpoint, it is easy to model the choice between two mutually exclusive terms at individual level : the hierarchical firm or production decentralised by the market mechanism. Indeed, the relative prices, or relative costs, are pretty clear. The analysis bearing upon a fundamental choice, between two quite distinct terms whose relative costs are known, can been handled in accordance with the classical principles of economics.

3. Information and the organisation theorem

The fundamental question that explains the variations of political systems during the century is consequently that of the choice of the optimum dimension of hierarchical organisations, States and firms. According to Coase, it is the transaction costs that determine the choice of organisational form, hierarchical or market. In his view, as confirmed by the analysis of Dahlman [20] , the main component of transaction costs is the cost of information.

It follows that trends in the relative cost of information, the price of information relative to other goods and services, determine the relative development of hierarchies and markets.

This is due to the fact that market production (decentralised) is based on the use of a great deal of information on the part of all the players. The number of potential trades is far greater on markets than within hierarchies. They take the form of a lattice connecting all the potential participants.

In an economy where the number of producers is N, the total number of potential trades is N.(N-1)/2. It follows that the amount of information that a supplier or purchaser on a market must accumulate is far greater than what an employee uses within a hierarchy, where the number of possible trades is simply N-1 for a number N of participants. Decentralised market production requires a total volume of information that increases rapidly with the number of participants compared with what any hierarchical organisational structure requires.

Hierarchical production economises information by reducing the amount to be gathered for each stage in the production process because of the smaller number of potential trades there are. It keeps the information for the small number of decision-makers at the top. This same information is then reproduced and disseminated down to the operational echelons, which have no need to acquire it independently or process it themselves. A hierarchy is an information-saving mechanism.

When information is rare and costly, the hierarchical organisation form is more advantageous than the market form. This result flows from extending Rybczinski's theorem to the problem we are dealing with here.

If we consider decentralised production forms involving market trading as constituting a production sector using « information » intensively as a factor of production, and hierarchical forms as another sector using the same factor sparingly, the theorem tells us that an increase in the availability of a production factor will bring about a rise in the production of the sector which uses it most intensively. It follows that the information revolution, which has caused the cost of storage, processing and transmitting digitised information to plummet,

[20] Carl J. Dahlman, "The Problem of Externality", Journal of Law and Economics, April 1979, pp.141-62.

will result in the market production sector expanding and the hierarchical production sector contracting.

The lower cost of information affects the choice of form of production in all production sectors. As we have shown above, it thus alters the organisation of control of collective decisions, the political system.

The markets expand and the hierarchies contract, whether they be private or public. This explains the break-up of the conglomerates, the re-specialisation of firms, the reduction of their average size in terms of employment, the break-down of the empires and the splitting-up of the largest or most heterogeneous states [21]. Centralisation decreases, the dictatorships and totalitarianisms fade away while the control systems develop towards democracy.

Against this analysis one can put forward sophisticated constructs aimed at showing that information is a public good and, as a result, cannot be priced on the market and its relative price with respect to other goods and services has no meaning for individual decision-makers.

In reality, however, most information is not « free » but has a well determined private cost. Information in general is inseparable from a material carrier with the character of a private good. Furthermore, legislation is developing to enforce property rights over information. And lastly each individual has to make a personal effort and commit expenditure to absorb the information effectively, though « free » in principle, but which has to be sought, sorted and understood. There is a « domestic production of information », to borrow from Becker's concept on consumption. So that truly free information, available to all without significant cost for acquisition or sorting, is pretty stale stuff, already incorporated into what the competition is producing, stripped of any competitive value, with its marginal productivity (due to its exclusivity) at zero. As Hayek pointed out, it is particular information, specific to a product, a place, a date which has value for firms and entrepreneurs, as for the other economic agents. General information that is freely available has none.

It follows that it is best to handle information in the same way as other private goods and services : it has a production cost and a utilisation cost, it is unequal in quality and constitutes a production factor in short supply used in all human activities.

Information is thus a factor whose shortage is as universal as time in the Becker and Linder analysis. As the latter has particularly illustrated the consequences of the growing scarcity of time in all aspects of organising daily life, we have christened the organisation theorem based on shortage or abundance of the information factor, the Rybczinski-Linder theorem.

But has this analysis any relevance in accounting for the whole course of the political systems throughout the twentieth century ?

[21] These trends over the last two or three decades are analysed in greater detail in Le Second Vingtième Siècle, op.cit.

The two information revolutions and the great cycle of systems

The cost of information has actually followed a cycle since the end of the nineteenth century. It first increased dramatically with the second industrial revolution at the end of the nineteenth century (see Beniger, The Control Revolution, Harvard University Press, 1986, and Alfred Chandler, The Visible Hand, Belknap Press, 1977). Conversely, it fell dramatically during the recent information revolution in the last third of the twentieth century.

In his book The Control Revolution, Beniger draws upon Chandler's historical work to show how the extraordinary development of production capacity during the second industrial revolution, in the United States at the end of the nineteenth century, brought about a remarkable increase in the speed of production flows. Hence a sudden leap in the amount of information needed to control this speed-up in all the processes, of which rail transport, steel output and petrochemical production are such good examples.

The multiplication of production capacity, much greater than the increase in the capacity for producing and transferring information, turned the latter into a very scarce and costly commodity with respect to the suddenly more abundant goods and services.

The techniques of collecting, storing and transfer of information did not advance at the same pace, with catastrophic results for the first railroad companies. The response of the firms faced with this relative shortage of information as against the higher output rates consisted in falling back upon the familiar mechanism of hierarchical management. There followed the bureaucratisation of these firms, the development of bureaucratic management techniques and hierarchisation.

The giant firms and giant organisations that then developed for the first time were designed to enable large scale production to be handled at high throughput rates thanks to the economy of information (scarce and costly) that hierarchical bureacratisation makes possible. The trend was to last until the sixties.

The information revolution and the growing abundance of information

The invention of printed circuits and microprocessors was to revolutionise the storage and transmission capacity of information in binary digital coding, to the point where the fall in the cost of storage and coding (hard discs and digitisation), processing (microprocessors) and transmission of information (modems and mobiles) led from the sixties on to what was known as the «information revolution ».

« Moore's Law », named after one of the architects of this revolution, states that the capacity of microprocessors doubles every 7 to 8 years. Computing power is advancing at a giddy speed. One of the most widely used microprocessors, the INTEL 80-86, increased its computing power by 50% every year between 1978 and 1997 while the price of a MIPS (one thousand instructions per second), the unit of measurement of that power, fell on average by 25% per year over the same period. This represents a performance improvement of the order of 300 times over that time period. The cost of processing information is nosediving.

The price of information relative to goods and services is subsiding. Yet information is a universal factor of production, an input to every activity without exception. For this reason, the information revolution ought not to be limited to the mere use of computing in the firms. All organisations are affected and all hierarchies stand to lose their competitive advantage with respect to decentralised production mechanisms in the market.

The result is the phenomenon of institutional atomisation we referred to earlier.

But the value of this analysis depends on its ability to explain some of the trends observed for which the theory of ideological choice between two opposing systems, private property versus state property, capitalism versus communism, provides no answer. We can show this with a few factual implications of the organisation theorem.

4. The corollaries

Reformulating the analysis of politico-economic systems in this way is only of value to the extent it enables us better to explain the realities as we observe them, on one hand by explaining phenomena not explained hitherto and, on the other, by improving the overall coherence of the analysis.

Several corollaries of the organisation theorem fulfil these conditions. They define the logical consequences of the analysis, which can be compared with the historical trends and thus constitute indirect tests of the validity of the analysis.

First corollary:

Capitalism and socialism move on parallel lines, in the same way, towards a greater or lesser degree of centralisation depending on the period, while differing at all times, structurally, one against the other, in their average degree of centralisation.

True, the two systems have been antagonistic throughout the century, more particularly during the cold war beteen the United States and its allies and the USSR and its protectorates. However, the trend towards concentrating decision-making was evident in the two types of system, even if it did not go so far in the democracies as in Nazi Germany or, even more so, in the USSR under Stalin. US capitalism became concentrated in the first part of the twentieth century and the European forms lapsed into dirigisme and corporatism.

This is the development denounced by Hayek who rightly saw a similarity with the German system and the other totalitarian powers. Dirigisme and the social-democrat drift into government control in the thirties, forties, fifties and sixties testify to the same trend towards concentrated decision-making both under state leadership and in the private sector. Corporatism is also an example of centralisation of the production apparatus alongside a weakened democracy.

The evolution of the arrangements for organising production followed the same lines in the different variants of capitalism and socialism. The degree of centralisation was different in each country but all were moving in the same direction. We find evidence of this in the economic literature dealing with the critical study of concentration in the capitalist system in Schumpeter, Mason, Bain particularly, and Galbraith.

States and firms wax and wane in phase, so that enterprise economy and market economy are not synonymous but constitute in reality two contrary systems, whereas socialism and etatisme, on the one hand, and giant private firms, on the other, go hand in hand. The direction (but not the degree) in which the United States and Russia moved between 1875 and 1950 was similar; in both cases there was growing centralisation of the productive apparatus, more planning (public or private, depending), gigantism and hierarchical organisations.

Second corollary:

Socialism was not an « error » : it was economically effective at one point, and the same is true of dirigisme, etatisme and planning.

First we see the parallel trends that affected the democratic and capitalist countries as they did the authoritarian and socialist societies. As the latter saw it, there was no massive political error lasting 70 years, nor crippling inefficiency in the political systems in those countries that chose the socialist route.

Like major corporate capitalism, socialism was effective in production terms until around the sixties (see particularly R.W.Davies, Soviet Economic Development from Lenin to Khrushchev, Cambridge University Press, 1998). This is the reason, as Krugman and Long point out, it was able to resist the German invasion so effectively during World War II. In the middle of the century, nazism and communism demonstrated their economic effectiveness, as did the dirigisme and etatisme which characterised the changes in the productive apparatus of the major countries that stayed with democracy.

There was no massive, universal and lasting error in political organisation in the first part of the twentieth century. Socialism and etatisme in Japan, Germany and France were effective, as were the giant Fordist corporations. The systems adapted to the new circumstances to optimise their organisation. Technology gave the advantage to the very large hierarchical organisation over the small organisations driven by intense business-to-business market trading.

The recent counter-revolution heralding the triumph of the markets and the reduction, if not the disintegration, of all hierarchies, public and private, is due to the information revolution and the renewed comparative advantage of small business and the market as a form of organising production.

The rise of the totalitarian regimes, sustained for many long years, is to be explained not as some aberration but by their temporary economic superiority in the technological conditions of their time.

<u>Third corollary</u>:

The growth of the State and democracy shows an inverse correlation in the XIXth and XXth centuries.

Certain specific theories on the growth of the state end up laying the blame on democracy, or some poorly controlled form of democracy, for bringing about the growth of the State and leading to socialism.

But in the organisational analysis, as is the case in fact, democracy spreads rather when the role of the State is more limited or on the decline, and goes under when the State builds up. It is not democracy that determines the growth of the State, it is the rise in the cost of information that determines the optimal size of all hierarchies, be they private (firms) or public (state), and brings about, as we have suggested, the concentration of control over decisions, that is, authoritarianism and, in its extreme form, totalitarianism.

Insofar as hierarchical concentration and the centralisation of decision-making reduces free competition between ideas (Hayek, Friedman) and makes information more costly, the development of the great public and private hierarchies weakens democracy instead of developing alongside democracy.

There are certainly other factors in play that account for ongoing differences in the political regimes between countries, for instance the democratic tradition in the Netherlands and England and the authoritarian tradition in Russia and China. The variety of political regimes at any one time is explained by the conditions determining the cost of information, which are not simply a matter of technology but the way that various institutions (legal, mainly) impinge upon the dissemination of information and the adoption of information technology (see the papers on the development of financial markets and guarantees given to investors, La Porta, Shleifer, Vishny, et al., "Law and Finance", NBER working paper, July 1996).

But the overall movement through time of all political regimes is directly linked to the development of organisation technology, which depends on transaction costs and consequently information costs.

Fourth corollary:

The optimal territorial dimension of the State-firm and the geopolitical conflicts of the twentieth century are best understood from the organisational perspective.

The opposition between capitalism and socialism tells us nothing about geopolitics, peace and war between nations, in the twentieth century. The opposition between systems even conceals the traditional (older and a-ideological) nature of conflicts between states.

In our organisational analysis, peace and war between nations depend on the optimal size of the States, which each endeavours to reach for reasons of effectiveness. The size of States has two aspects just as do firms : the external aspect, i.e. the sales figures achieved with each client supplied, or for the State the total population controlled and the share of State services in the revenue of that population.

At the outer edges of a State, where the number of its population and the area it controls are determined, expansion necessarily collides, in a finite world, with the expansionist aspirations of another State. The growth phases in the size of States lead to confrontations aimed at the control of neighbouring territories and peoples.

Peaceful or warlike relations between states thus depend on developments in the structure of the « world industry of states ». Peace and war between nations hinge on the general swing towards or away from concentration in this world industry. War accompanies the concentration phases, which are also phases of increasing government control, with democracy and markets on the ebb. Peace between nations accompanies the disintegration of the great empires, the triumph of the markets and democracy. But it is also bound up with secessions, the resurgence of nationalism, particularism and civil war.

All these phenomena were observed, respectively, during the first part of the twentieth century, then in the second part of the century, with the latter tendency well in evidence today.

Fifth corollary:

Ideologies are expressions and reflections – not determinants – of organisational systems.
The organisational approach provides the outline for a theory of ideological development. It is not the arbitrary evolution of ideologies and political doctrines that drives the overall movement of regimes and systems. Rather is it the development of regimes and optimal systems, in terms of production technology, that determines the most appropriate ideology. The growing comparative advantage of large organisations produces communism, fascism and etatisme. The growing comparative advantage of the market produces individualism, liberal capitalism and democracy.

The ideas industry, like accountancy, meets a market demand for rationalisation, a « market for excuses » as some theoreticians of financial accountancy put it (   ).

The rise of « ideological » explanations went hand in hand with the extraordinary progress of centralisation in the XXth century : a centralised society has a need for a single, unitary doctrine. It has a need for « systematic » concepts deliberately introduced from top to bottom of the pyramid.

A diversified, decentralised society, on the contrary, has no need of a single doctrine : it acknowledges diversity, the co-existence of areas of centralisation and areas of decentralisation. Consequently, it is less « ideological » and more « pragmatic ». Here again, we see the contrast between the period of the dominant ideologies, the first half of the twentieth century, and the recent period with the great ideologies in decline.

Sixth corollary:

The revealed demand for freedom is relative, not absolute, and is a matter of contingency

The ideological approach assumes that freedom has no price, as the demand for it is unlimited or should be, since freedom is the goal of history ; or quite the opposite under the contrary ideology, freedom is no more than an accident of history.

In the organisational approach, totalitarianism and the regression of civilisation in the first part of the twentieth century are due to utility being maximised by individuals, given the technology impact on production. Apparently, the intrinsic value that individuals attach to the good « freedom » is less than that which they attach to other goods and services. Freedom is an economic commodity like any other, in that it will be more sought after and attained when its opportunity cost is low, when the sacrifice it calls for in terms of the production of all other goods and services is smaller. This will be the case when the decentralising economic regimes are more effective, whereas when economic centralisation is more effective, the opportunity cost of freedom increases and it will be less in demand.

Freedom appears as an argument in the individual's utility function. But the demand for it, as is the case with other goods seen as essential like health, is nonetheless affected by income levels and its organisational and productive opportunity cost.