

<Article>Convergence-Theory and Historical Reality : Twenty-One Years after Tinbergen's Article

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- [13] Tinbergen, J., "De Convergentietheorie—Balans na 20 Jaar"  
(Article published in Dutch, Translation of the title: Time  
Convergence Theory—Balance After 20 Years), *Civis Mundi*,  
1980, pp. 234-237.

convergence is an empirical-objective category which is, in itself, value-free. It either asserts itself in history or it does not. The second part of my paper tried to find out, wherein convergence asserts itself, and in what forms—and wherein it does not assert. The forming of value judgements can be separated from this objective description. There are convergences which make me happy, upon my own value system, and there are other ones which make me unhappy—even if they seem to be historically unavoidable.

Finally, one more remark. Tinbergen's article was written in an era in which the ice of the cold war began to thaw in world politics. This gave ground optimism. But now cold war is once more in the air. It is to be feared that this will again render the systems more rigid. It is *my hope* that this rigidity will not last long.

### References

- [1] Bauer, T., "The Hungarian Alternative to Soviet-Type Planning", *Journal of Comparative Economics*, under publication.
- [2] Coats, A. W.-Thompson, S., "Against 'Against Convergence'", *Cambridge Journal of Economics*, 1981, Vol. 5, pp. 383-386.
- [3] Doel, J. van den, *Democracy and Welfare Economics*, 1979, Cambridge, Cambridge University Press.
- [4] Ellman, M., "Against Convergence", *Cambridge Journal of Economics*, 1980, Vol. 4, pp. 199-210.
- [5] Ellman, M., "Reply to 'Against 'Against Convergence''", *Cambridge Journal of Economics*, 1981, Vol. 5, pp. 387-389.
- [6] Heertje, E.(ed.), *Schumpeter's Vision*, 1981, New York, Praeger.
- [7] Kornai, J., *Anti-Equilibrium*, 1971, Amsterdam, North-Holland.
- [8] Lauterbach, A., "The 'Convergence' Theory Revisited". *Kyklos*, 1976, Vol. 29, pp. 733-754.
- [9] Montias, J., *The Structure of Economic Systems*, 1976, New Haven, Yale University Press.
- [10] Schumpeter, J., *Capitalism, Socialism and Democracy*, 1976, London, Allen and Unwin. (First edition: 1942)
- [11] Spulber, N.-Horowitz, I., "Convergence Theories and Optimal Systems", in *Quantitative Economic Policy and Planning*, 1976, New York.
- [12] Tinbergen, J., "Do Communist and Free Economies Show a Converging Pattern", *Soviet Studies*, 1961, Vol. 12, pp. 333-341.

ding principle of actual behaviour. It supersedes, however, the traditional neoclassic philosophy in applying this approach not only to households and firms, and not even only to governments, but to whole systems.

Another kinship: the era of enlightenment, and later, the "optimism" of natural sciences spreading in the second half of the 19th century. What this philosophy shares with these is the optimistic faith in the strength of cognition, that is, of rational comprehension. If we know what is "good", or even "optimum", this knowledge will spread and will not fail to impress the governments, which are then sure to guide, with an increasing determination, their own system toward this optimum system.

As for me, I cannot accept this philosophy. I do not even believe that households or firms "optimise". I doubt even more that such behaviour is to be assumed of governments. And, in regard of the existing socio-economic systems, I am unable to interpret the concepts of "goal" or "preference". In my eyes, a socio-economic system is a living organism, with its own nature, functional and behavioural regularities, and dynamics determined by these regularities. These inner regularities are not everlasting, yet to change them large and strong movements have to alter the structure of the system, which does not usually take place without some great shocks. This approach fits in well with the historical facts outlined in my paper: both certain structural rigidities of the socialist system as well as the slow changing processes rooted in the internal characteristics (and not in any "purposefulness") of the capitalist system.

Some of the changes that have taken place in the economic systems in the past decades are sympathethetic to me. I am glad that, as I have mentioned, a more flexible mechanism, better adapted to human needs, is taking shape in Hungary, or that income distribution has become more just in several capitalist countries. But I am not glad about every kind of convergence, just because it is convergence. I do not feel content to see that in a number of capitalist countries the role of bureaucracy is nearing what I got to know in my own country. And I am not particularly pleased about that special "convergence" in which such common troubles (for example inflation, debts, stagnation or slow-down of production) occur more frequently as are found in both systems. In my eyes

cy. Simultaneously, capitalism liquidates its own existence and will be supplanted by socialism. Therefore, socialism gains ground not because of the economic failure of capitalism, but through the organic development of capitalism.

Schumpeter's prognosis has not come true to these days in the form as it was conceived by the author. If not for other reason because he, too, as Marx earlier, had in mind only the advanced capitalist countries in his analysis. The socialist transformation however, has taken place not there, but mostly in the countries which are called in today's usage the "developing countries", that is, in economies which were only at the initial stage of a thorough capitalist transformation before the social changes of a socialist nature.

And yet, so much can be said—exactly as a consequence of the analysis in my paper—that an important partial truth is present in Schumpeter's prediction at the light of historical experience. Undoubtedly, during the past twenty years (and even more during the forty years since the publication of Schumpeter's book) the role of bureaucracy as well as of state redistribution has been rising (the latter is accompanied by a weakening influence of entrepreneurial profit) and the weight of the state-owned sector has grown. In the advanced capitalist countries socialism did not supplant capitalism. If, however, the direction of changes is at all worth calling "convergence", this converging process does take place in Schumpeter's way.

And now let us revert to Tinbergen. His prediction is based upon a certain *philosophy*. According to this philosophy, a system or the government directing the system pursues certain aims and in this pursuance acts rationally. There exists an "optimum system", the characteristics of which are clearly seen. It is an optimum "mixture" of the advantageous features of capitalism and of socialism. Therefore, it can be expected of both systems that, having recognised what is the optimum, they should endeavour to achieve it. It follows logically from this goal-oriented optimisation that the two systems are to converge to each other.

This philosophy has much in common with the neoclassical economic theory and its branch, "welfare economics". It shares with the latter its teleologic approach: action is deduced from the *goals*. Also, it shows a similarity to it in regarding optimisation as the gui-

us sum up our earlier statements.

*In the socialist countries* no inclination showed—apart from little exceptions—for an internal renewal of the system. No thorough changes have occurred in the social structure, in the forms of ownership, and in the institutional system. Inertia proved to be very strong. Let me add a personal remark. I am in favour of the Hungarian reform: of the changes that have increased the role of the market and of the individual initiative in my country. I wish that the reform in Hungary progress further. I regret very much that the Hungarian experiment has stayed in isolation, though its example verifies that the post-reform socialist system is capable of greater achievements than the pre-reform one, particularly as regards the people's living standards.

*In the advanced capitalist countries* no "qualitative leap" was made in any of the system characteristics. It is, however, remarkable that in three important characteristics they came somewhat closer toward the state of the socialist countries; it is true that, notwithstanding, the distance has remained rather wide. The three characteristics in question are the following—numbered as in the previous part: (1) the share of state ownership, (4) the role of bureaucratic allocation, (5) the weight of state redistribution. All this is certainly related to the influence of Keynesian economic policy and to the gradual evolvement of that role of the state which is often called the "welfare state".

Up to this point I have been comparing historical experience with Tinbergen's hypothesis. There is also another theoretical hypothesis to serve as a basis of comparison: it is Schumpeter's famous book, *Capitalism, Socialism and Democracy* [10]. It is now forty-one years that this book—in the meantime grown a classic—was published\*), that is, almost twice as long as has passed since the publication of Tinbergen's article. Taking the risk of oversimplification. I shall try to sum up Schumpeter's idea. The development of capitalism leads to that its original driving force, the initiative entrepreneur, will be pushed out and replaced by bureaucra-

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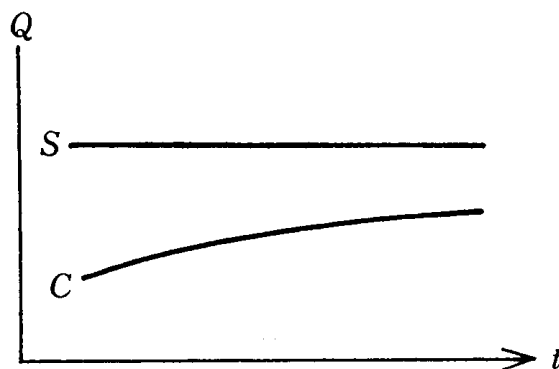
\*) On the 40th anniversary of the publication of this book a volume [6] was published in which Samuelson, Fellner, Haberler, Wiles and others undertook what I am trying to do in my present paper with Tinbergen's hypothesis: to compare the theoretical prediction with the realities of history.

*In the advanced capitalist countries* all the forms of redistribution listed above are to be found, but their relative weights—among the forms a)-e)—are different those in the socialist countries. While in the socialist countries the main source of budgetary income is a), that is, turnover tax, in the capitalist countries it is b), that is the individual income tax.

The difference is considerable between the countries. In the Scandinavian countries and the United Kingdom tax burdens are heavy; in comparison, those in the USA or Switzerland are light.

As for dynamics, the role of redistribution is increasing in regard of the total effect of all the forms of redistribution. The ratio of free or quasi-free state services has grown. Especially since the Great Depression, the amount paid in unemployment benefit has been rising high. (In the European socialist countries there is full employment and no unemployment benefit exists.) Another remarkable phenomenon: also because of the recession-stagnation, it is not infrequent that the state comes to help with subsidies the private companies on the brink of ruin.

Let us sum up our statements graphically:



On the vertical axis, the following indicator could be marked, for example : the fraction of income flowing through the budget to the total of income. The time series of the socialist countries is horizontal. The "world average" of the capitalist countries is marked by a rising time series: in this respect, they come closer toward the state of the socialist countries.

### 3. Closing Remarks

It can be concluded that Tinbergen has largely overrated the convergent character of the tendencies going on in the world. Let

se seems to be stopped, at least for the time being.

That is, some convergence has taken place, though not in the spirit of the original hypothesis ("meeting half-way"). The socialist system has been conserved in its old state, while in the capitalist system bureaucracy has been somewhat strengthened.

### 2.5. *Redistribution*

Every modern state effectuates extensive redistribution: with one hand it takes away income from firms and individuals, and with the other hand it gives income to firms and individuals.

*In the socialist countries* the ratio of redistribution to the total of incomes is very high. I shall discuss five important forms of redistribution:

a) The turnover tax included in the price of the product of service, that is, the "negative turnover tax": the subsidy that covers part of the production cost. Let us start, in imagination, from a price system developed on the principle of "cost plus normal profit". The actual prices prevailing in the socialist economy widely disperse about these imaginary prices. With some products another 80 or 100 per cent are added to the price according to "cost plus normal profit". And with other ones, the price amounts to mere 15 or 20 per cent of the cost: the difference is reimbursed to the producer in the form of state subsidy.

b) There is income tax imposed directly on the individual but its role is rather unimportant.

c) Certain groups of people (for example the disabled or the needy) are granted allowances. These weigh relatively little in total redistribution.

d) There are grants in kind received at various titles, the costs of which are borne by the budget. State-owned flats let free or against a nominal rent, health services and supply of medicaments, free education and other cultural services, subsidized vacations, etc, come under this category.

e) Firms pay payroll tax and, if they work at a profit, also profit tax. On the other hand, the losses of firms working with a deficit are reimbursed. This kind of redistribution totally damps the effect of prices and profit on the behaviour of the firms.

The ratio of redistribution has not changed essentially in the past twenty-one years.

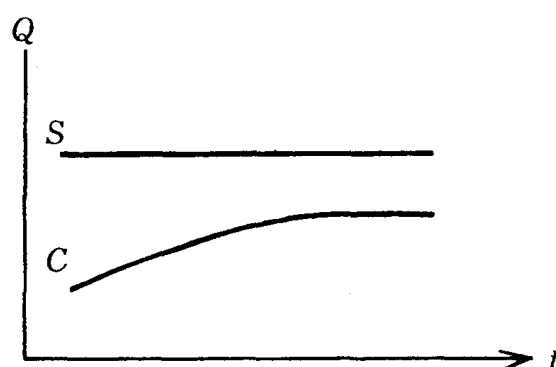


exchange restrictions, flat allocation, credit quota, etc. Another interesting phenomenon of growing bureaucracy: government intervention in the market process by central fixing or freezing of wages and/or prices. This was done in the USA under Nixon's presidency; in France a price and wage freeze was maintained for a long time after Mitterrand came to power; and so on.

On the other hand, those tendencies have been strengthening in recent years which protest against the proliferating economic role of state bureaucracy. This seems, however, to be mere rhetoric—in fact, little has been done to drive back bureaucracy from such spheres of decision rights, which it has once grasped.

Otherwise, it has to be added for the sake of objectivity that, even though loud protests against bureaucracy are often heard, bureaucratic decisions remain, in fact, within a rather narrow scope; most of the allocation decisions are made within the market mechanism. In this respect, the "world average" of the capitalist system has not surpassed the critical value beyond which the role of the state bureaucracy would become really dominant.

Let us sum up our statements graphically.



It is assumed that a fraction is marked on the vertical axis: what fraction of the total resources and production is allocated by some centralised bureaucratic administration in its everyday operative decisions. The upper line is horizontal. There has been no change in the socialist countries. (I have disregarded the exceptional case of little Hungary; and the possible change in China has not yet been taken into account.)

The lower line is slightly rising: it becomes horizontal towards the end of the time series. This is to represent that, though the active role played by bureaucracy will not be driven back, its increa-

short-term decisions on inputs and outputs. The market relationship between seller and buyer is of more importance. A considerable part of the prices is liberalized, and these prices are now formed on the market according to the contract of seller and buyer.

However, it is not my intention to make the impression as if Hungary had clearly become a country of "market socialism". In more than one branch the old, highly bureaucratic central management has survived, In other places the bureaucratic intervention of the central organs has shifted from open forms to concealed ones: now the superior authority does not give "orders", but rather "requests" emphatically the firm to do something. And it is indeed difficult for a director to say "No" to a minister—who appoints him to his post—when he very nicely asks him to do something... The centre fully disposes, the same as before, of the foundation and liquidation of state-owned firms, as well as of the appointment to and dismissal from a few leading posts of these firms. Financially the firm largely depends on the centre: for short-term credits and subsidies as well as for investment credits and subsidies. In the final account, the fact can be established that, though the role of the market has increased and more decisions are made within the horizontal decision structure than before the reform, the bureaucratic hierarchy still exerts a rather strong administrative influence, and a great number of important allocation decisions are made within the vertical structures.

It is read in the press from time to time that similar reforms are considered in China, or even the first steps have been made, I can only say what I said in Section 2. 1. talking about the proportions of ownership: we shall see. After five or ten years we shall know more for certain on the subject, as ten years or even more were needed also in Hungary to be able to judge, from a due distance, the situation of the reform.

*In the advanced capitalist countries* several bureaucratic phenomena have become conspicuous in recent years. In a number of sectors—such as public health and the housing sector of a few big cities—the role of the bureaucratic decision structures has grown. To a different extent in each country and in each period, the official administrative allocation of certain kinds of resources or products and services appears now here now there, for example, foreign

shall compare, which role is played by the vertical decision structure, and which by the horizontal one, or in other words, which by the bureaucratic-hierarchic administration and which by the market in the everyday allocation decisions of the economy. These are more or less mutually substituting mechanisms\*'), therefore, it is justified to ask the question: how far does the market drive back bureaucracy, or bureaucracy drive back the market? *This* question is, in my view, reasonable to ask, whereas "planning or market" is a wrongly formulated pair of contrasts, since planning may co-exist with the market.

*In the socialist countries* the highly centralised bureaucratic-hierarchic administration has traditionally controlled everyday allocation. Detailed plan directives prescribed for firms both the output targets and the input quotas. At the time of Tinbergen's article Yugoslavia was the only exception: there the "classic" plan directive mechanism had been abandoned as early as in the 1950s and the market mechanism was given almost free scope. In the late 1950s the first reform proposals were published in writing in other socialist countries, among them the Soviet Union, Poland, Hungary and Czechoslovakia. Certain declarations of a few statesmen could also be interpreted in a way that they tend towards reforms. This was the historical moment, which inspired Tinbergen to predict convergence: in the socialist countries the market mechanism would be gradually gaining ground.

More than twenty years later it can be observed that the prediction has not come true. With the exception of Hungary, no thorough decentralisation reform has been introduced anywhere. The overcentralised bureaucratic old mechanism has been conserved. Changes are so slight that we can easily dispense with their description.

Hungary is the only one among the socialist countries to have put through a far-reaching decentralisation reform; it was fifteen years ago, in 1968, so that the reform has had time to take root. State firms have a much increased autonomy, particularly in the

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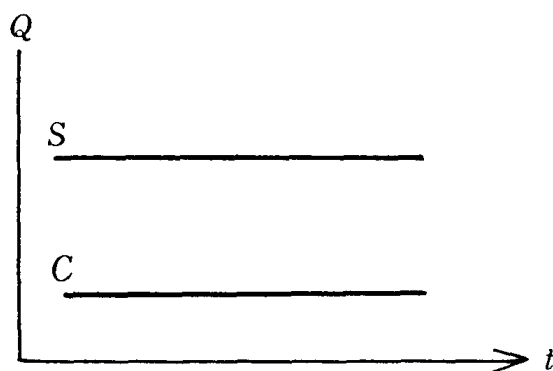
\*) As I have mentioned in the preceding footnote, these are not mutually excluding cases in the strict sense, but may be mixed to some extent. For example the seller and buyer agree in the volume of the transaction on the market, while the price is influenced by the central price control office.

since there the term itself was sensed as too "red".) Perhaps on account of the favourable experience obtained in his own country, Tinbergen hoped that the prestige and influence of planning would be gradually increasing.

This hope did not come true. The situation has changed little during the last twenty-one years. In a few countries—such as Sweden or Norway—the professional standards of central planning have improved further. In the USA several central government organs have started such short-or medium term prognostic and co-ordination work which an Eastern European economist would surely call "planning", while in the USA it is still not proper to use the word. Therefore, a tendency of more intensive planning is present.

However, the opposite tendency is felt just as intensively: among government leaders and economists the intellectual interest taken in planning has slacked. Partly because of the economic difficulties of the socialist countries, the idea of "central planning" has become disliked among many government leaders and economists. It is difficult to weigh the tendencies "pro" and "contra". I think, however, not to be very far from truth if we say, talking about the "world average" of the capitalist system, that the role and weight of planning is stagnating.

Let us sum up our statements graphically:



The "weight" of central planning could be measured by a lot of different indicators. (For example, by the relative number of those engaged in central planning—according to our definition—in the total staff of the state apparatus.) Both lines are horizontal; no particular convergence has taken place.

#### 2.4. *Bureaucracy versus Market*

Applying the distinctions drawn in the preceding section, we

much the producer is to produce, and to whom he shall sell the output, and also, how much the consumer is to use, and where he can get the necessary input. There we can see sub-or super-ordinate, that is, *vertical* relationships and along with them, a vertical decision structure\*).

Central planning is compatible—in the sense as defined above—with everyday allocation decisions made by a strongly centralised bureaucratic management within a vertical structure. At the same time, it is compatible also with everyday allocation decisions made under the influence of the market mechanism, within a horizontal decision structure.

Unfortunately, there is much confusion of these concepts in literature. As many Western economists. Tinbergen also contrasts “central planning” with the “market”. As for myself, I wish to draw a distinction between the two sets of problems, in the sense of the preceding definitions. In this Section 2.3. planning is discussed, and the next Section 2.4. will treat the pair of contrasts “bureaucracy versus market” or, in other words, “vertical versus horizontal decision structure”.

And now let us turn our attention to the situation of central planning.

*In the socialist countries* central planning was functioning at full steam twenty-one years ago and its sphere of action has not changed since. Also, the size of the planning apparatus and the character of the plan documents have remained the same. This holds for Hungary as well, though, as we shall see in Section 2.4. the role of the market has grown there.

*In the advanced capitalist countries* differences were great between each country at the time of Tinbergen’s article. For example, France, Holland, and Scandinavian countries pursued central planning rather intensively. In other countries—such as the USA—there was hardly a central coordination activity which could be called central planning in the sense as defined above. (Let alone that in the USA even this little activity was never called planning,

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\*) These are two pure, extreme cases: on the left side there is no central bureaucratic influence on the market relations, and on the right side there are no market relations between seller and buyer. Of course, there are often mixed cases in real life.

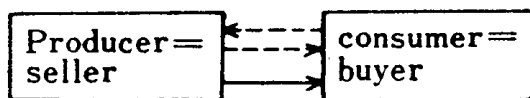
information, the drawing up of forecasts about the external world surrounding the country. And, what is perhaps the most important thing: it is part of central planning to work out the economic programme of the government and to declare it publicly, which influences, of course, the expectations and decisions of the other actors of the economy. Within central planning the action programmes of the central state organs, the local government organs, firms, trade union and of other social institutions are coordinated, at least to some extent.

The scope of duties of central planning must be conceptually separated from the administrative function of the operative management of the economy. The latter covers everyday decisions on production and on the purchase of inputs and the selling of outputs.

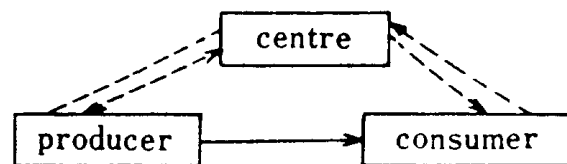
The time-horizon of the two different functions are widely deviating. Central planning has at least a one-year plan to project and it makes medium- (five-year) or long-term (for example 15 to 20 year) plans as well. Whereas the operative central economic management decides on the matter of the days or weeks to come.

The allocation of resources and products necessitates millions of partial decisions every hour and every day. These partial decisions can be made within two different structures.

Horizontal decision structure :  
market contract between seller  
and buyer



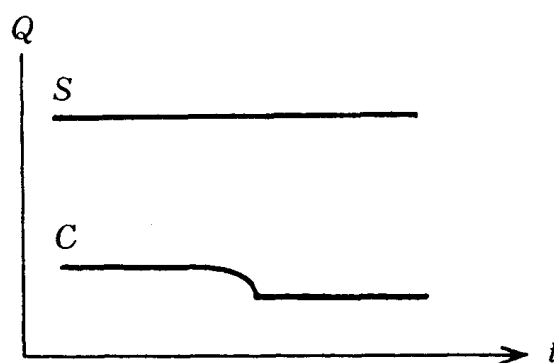
Vertical decision structure :  
central administrative in-  
struction



These are, of course, schemes of an utmost simplification. The dotted lines indicate the direction of the information flow and the continuous lines that of the product flow. The left-side figure represents the market mechanism: seller and buyer agree in what is needed and production adjusts itself accordingly. There *horizontal* relationships and along with them a horizontal decision structure prevail. The right-side figure represents the centralised bureaucratic management. There the centre gathers information on the producer's and the consumer's situation and then gives instruction, how

ther parliamentary party of coalition is no structural change.) An exception is Southern Europe. Three countries: Greece, Spain, and Portugal have changed from right-wing dictatorship into a parliamentary system. If this important change is in some way counted in the "world average"\*), the total of the advanced capitalist countries has moved in the direction of pluralisation.

Let us sum up our statements graphically:



On the vertical axis the higher value represents a higher degree of power concentration. The upper time series is horizontal, while the lower one is slightly downward sloping, because of Southern Europe. The difference has grown in respect of the world average, and since the political transformation of Southern Europe the difference has become permanent. There is no trace of convergence.

### 2.3. Planning

First I propose a conceptual clarification. I draw a distinction between *central planning* and *bureaucratic—hierarchic central administration*.

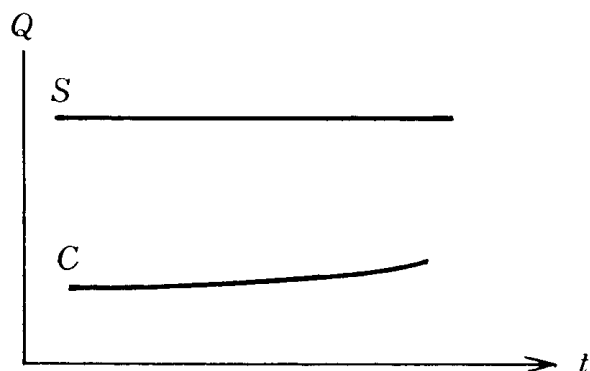
Central planning is an *ex ante* coordination of the activities pursued in economy. It is composed of many different elements. It includes the centrally organised exchange of information among the actors of economy, that is, the gathering and distribution of

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\*) This sphere of problems demonstrates clearly what I pointed out in point D) of the first part: that not every system characteristic can change as a smooth and continuous function of time. If a legal opposition or some other organised movement is established in a country in which only one legal party—the one in power—has existed before, it is a qualitative leap. On the other hand, if four new parties are added to the existing four in a parliamentary system, the number of the parties has doubled there as well, yet this is only a quantitative change and not a qualitative leap.

In weighing all the effects and counter-effects, it can be put down as a characteristic of the 21 years' general trend that the share of the state-owned sector has grown in the advanced capitalist countries—which change is, however, marginal. The term “mixed economy” has always been somewhat exaggerated. No “qualitative leap” has occurred in the proportions of the forms of ownership: the sector of private property has undoubtedly continued to be the dominant sector of the economy.

Let us sum up our statements graphically:



On the vertical axis the relative weight of the state-owned sector is marked. The time series of the socialist system can be well illustrated—as a good approximation—by a horizontal line. The time series of the capitalist system is slightly rising. The difference between the two world systems has decreased a little in this respect—and if it has, it is rather the capitalist system that come a bit closer to the socialist system, and not the other way round.

## 2.2. *Concentration of Political Power*

*In the socialist countries* no considerable change has occurred in the past twenty-one years. The political power is fully concentrated in the hands of the communist parties. There has been no sharing of power with any other independent group, and there is not any legally permitted and organised opposition. The events in Poland clearly show that the political structure of the socialist countries does not converge toward the political structure of the West European—North American type.

*In the majority of the advanced capitalist countries* no essential change has taken place in this respect. (The replacement of one parliamentary party or coalition in the government power by ano-



get more encouragement today. This has not yet led, however, to any considerable shift in the actual proportions of production.

One exception from the general tendency is Hungary, where the role of private activities has obviously grown. Household farming, and the activities of the non-agricultural population on small farms contribute greatly to agricultural production: they provide almost half of it. The "second economy" is also of a much larger scale. A series of government measures and legal rules are introduced in an attempt to legalise the activities which have been half-or illegal before, and thus to drive them from the "second economy" over to the "first". In the last years private craftsmen and merchants have been granted licence more easily, and they can keep several employees as well. Private partnerships can be established. All this remains, however, between rather strict limits. In Hungary there are still no large capitalist factories, and not even medium-sized ones. As for the forms of ownership, Hungary has not crossed the critical threshold value which would lead to a "qualitative leap". The absolute dominating role of the state-owned sector has re-mained\*).

It is as yet too early to appreciate what is going on in China. According to a few signs, China of a 1000 million may be taking its first steps on the road which Hungary of a 10 million has been following. Let us wait another 5 or 10 years before we can make a better grounded statement on the subject.

*In the advanced capitalist countries*—in regard of the "world average"—the share of the state-owned sector has grown somewhat, but it still provides only a small fraction of the GDP. In most countries its weight is large in the transport, health, and educational sectors, in a few countries in the banking sector as well; while in most countries it has a relatively little weight in manufacturing.

There is considerable dispersion among the countries: in the Scandinavian countries and Austria the share of the state-owned sector is larger, while in the USA, Canada, and the BRD it is much smaller. Besides, the change is not monotonous. In Great Britain, earlier nationalisations are now followed by reprivatisations. In France, nationalisation is now on the upswing.

\* ) An international comparison of considerable interest is made by the Hungarian economist T. Bauer in his article [1].

a) Who owns the means of production—in legal form, and in respect of actual disposition? Dividing the production into sectors according to types of ownership, what are the proportions of the sectors?

b) What is the source of personal incomes and what are the proportions of the different sources? What ratio is qualified as work income (wages and salaries), what ratio as property income (share dividends, interests on bonds and bank deposits, and what is the ratio of central payments (welfare subsidies, etc.).

In my study the situation is reviewed only according to the point a), since I consider it the decisive one. Because of limited space, the point b) cannot be investigated. The latter is, anyway, closely related to the question of income redistribution by the state, which will be discussed separately later on in Section 2.5.

In the socialist countries the prevailing form was state ownership in 1961, at the time when Tinbergen's article appeared. The cooperative sector played a relatively important role in agriculture, and a very modest one in industry and services. The weight of the private sector showed some dispersion in the different countries. However, it was little everywhere, providing only a few per cent of the GDP. If anywhere private craftsmen or merchants existed at all, they could not keep employees. A particular part of the private sector is the "household farm" in agriculture: the member of the cooperative and his family work—beside their activity in the cooperative—on their own little farm as well; they keep cattle, pigs and poultry, and grow vegetables and fruits. All this they do partly for their own consumption and partly for the market. Household farming provided a considerable part of the total agricultural production already in 1961. Besides, it existed already what is called today "second economy": half-prohibited, half-tolerated activities (for example repair works or participation in house-building), done by persons engaged in the "first economy", against extra payment.

Now, in contrasting this initial state with the state of 21 years later, it is found that no radical change has taken place in the proportions of the forms of ownership. Apart from a few exceptions, the old proportions have survived in all socialist countries. There is just one little change which may be worth observing: in most socialist countries, the household farming sector of agriculture seems to

## 2. Tinbergen's Hypothesis and Historical Experience

We shall contrast Tinbergen's hypothesis with historical experience under the following restrictions:

— Talking about capitalist countries it is mainly the West European and the North American development that I have in view. I do not deal with the capitalist countries of the developing world, not because I do not consider their examination important, but because their inclusion in the analysis would go beyond the limits of the present short outline. (On the other hand, when talking about the group of the socialist countries, I imply also those at a lower stage of economic development.)

— Among the advanced capitalist countries, I shall not touch upon the particularities of Japan. My knowledge of Japan is little and I do not wish to risk giving a wrong description, exactly before a Japanese audience. I would, however, greatly appreciate if those who will join in the discussion following will treat the question, how much the Japanese development fits into the general tendencies which I have used to describe the "average" tendencies of the advanced capitalist countries, or, in what respect the Japanese development is a different, individual way.

— In this short outline I am forced to confine myself to a qualitative description of the dynamics. I shall not supply statistical data, though, of course, my statements rely upon studying facts and figures.

— Making use of the schemes introduced in the preceding chapter figures will be drawn. These are to convey world system trends—the deviation of some countries from the trend will be set forth in the comments added to the figures. In the case of an exact, factual analysis the content of each indicator drawn in the figures ought to be exactly defined, the units of measure given, etc. But I shall neglect all these and content myself with a much looser form of investigation. The figures are rather to suggest, intuitively, in which direction the world has been moving in the past twenty-one years. A more precise description of the tendencies outlined will need some more detailed and thorough examination.

### 2.1. *Proportions of the Forms of Ownership*

The problem of ownership is to be divided into two sub-problems:

ntative of the "average" of the socialist countries, I am a citizen of a small country of only 10 million and I am quite aware that the development of the conditions in my country has little influence on the history of the earth. But, since the Hungarian experiment is rather unique, I shall refer repeatedly, in the following parts of my paper, to the dynamics of the Hungarian changes.

### 1.3. *Multidimensional Comparison*

In the original convergence hypothesis two characteristics of the systems were highlighted: what role is played by the central planning and by the market in the allocation of resources and products. He assumed, implicitly, that these two are mutually substitutive allocation mechanisms. The larger the share assumed by one, the smaller the one falling to the other, and conversely. Thus, in the usual interpretation of the theory, the issue is practically reduced to a *one-dimensional* problem: what are the relative shares of central planning and of market in carrying out allocation?

In my opinion, a more thorough analysis of the convergence problem necessitates a *multi-dimensional* examination. In Chapter 2 of my paper the capitalist and the socialist world systems will be compared in respect of *five system characteristics*. In fact, these still do not comprise all the essential characteristics of the systems: some very important ones cannot be discussed already on account of lack of space<sup>\*)</sup>. What is more, these five characteristics are themselves composed of several partial characteristics. Therefore, if we wish to compare systems with other systems, we have to use vectors composed of a lot of indicators<sup>\*\*)</sup>.

And now the conceptual apparatus is at our disposal to survey in short the dynamics of the last twenty-one years of the socialist and of the capitalist world systems.

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\*) To avoid misunderstandings: all through the paper *characteristics* of the systems and not their *performance* are compared. That is, such questions are discussed, as: what are the proportions of the various forms of ownership, or what is the role of the market—and not such as: what is the growth rate of GDP or what is the inflation rate. Tinbergen talks of the convergence of the systems also in this sense.

\*\* ) On the theory of system comparison see for example *The Structure of Economic Systems* by Montias [9], or *Anti-Equilibrium* by the author [7].

Is the change in time—decrease or increase—of the indicator in question monotonous? Or is it oscillating, at an irregular fluctuation, or perhaps at a regular, periodical one? In other words, do such historical periods in which the two world systems converge alternate with other ones in which they again deviate?

Tinbergen's original hypothesis forecasts the first case.

*To sum up* preceding schemes A)—E): the change in time of the characteristics of the systems, their convergence or deviation can take place in widely different dynamic patterns. With some simplification one could say: the original convergence hypothesis predicted, among the great number of possible dynamic patterns, the occurrence of a very special case: one that could be described by the ensemble of the schemes  $A_1$ ,  $B_1$ ,  $C_1$ ,  $D_1$  and  $E_1$ \*) .

### 1.2. *Heterogeneity within the Two World Systems*

It is tacitly assumed in the usual interpretation of the convergence hypothesis that changes take place in both the capitalist and the socialist world system more or less homogeneously, simultaneously and uniformly.

Historical experience has shown that, with both world systems, *dispersion is wide* among the countries. Therefore, a stricter analysis would demand that it should not be simply the averages of the two world systems that are compared, but that the individual development of each country should be traced. But, even if we rest content with a rough description—which the present paper will do in the second part—it must never be ignored that the group of both the socialist and the capitalist countries is to a large extent heterogeneous; in a number of important characteristics differences are great within the same group.

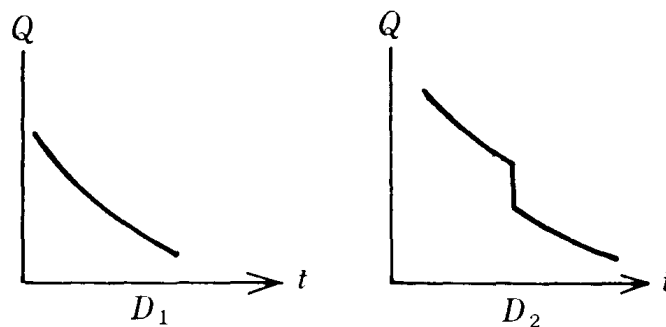
This I think important to be emphasised, particularly because I am a *Hungarian* economist, and the historical development and present conditions of Hungary differ on many points from those of other socialist countries, with a little simplification, I might say: if all the socialist countries had followed the same way as Hungary, we may be now nearer to a completion of Tinbergen's convergence. Hungary is considered, however, more an exception than a repre-

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\*) In accordance with the style of Tinbergen's paper, the dynamic pattern of changes was not discussed in full detail, but the implications of his ideas can be summarized, with some simplification, in the way as we did above.

that convergence may reach the point as presented by the left-side scheme, that is, that of a full convergence, but he did not exclude this possibility either. Later on his followers (for example, van den Doel) amended the theory and prognosticated a development rather according to the right-side scheme\*).

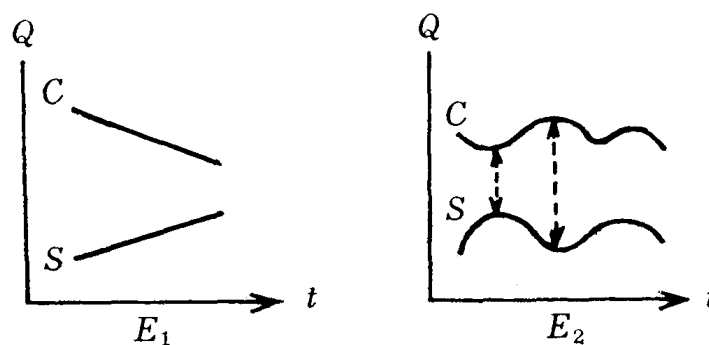
#### D) Smoothness and Continuity



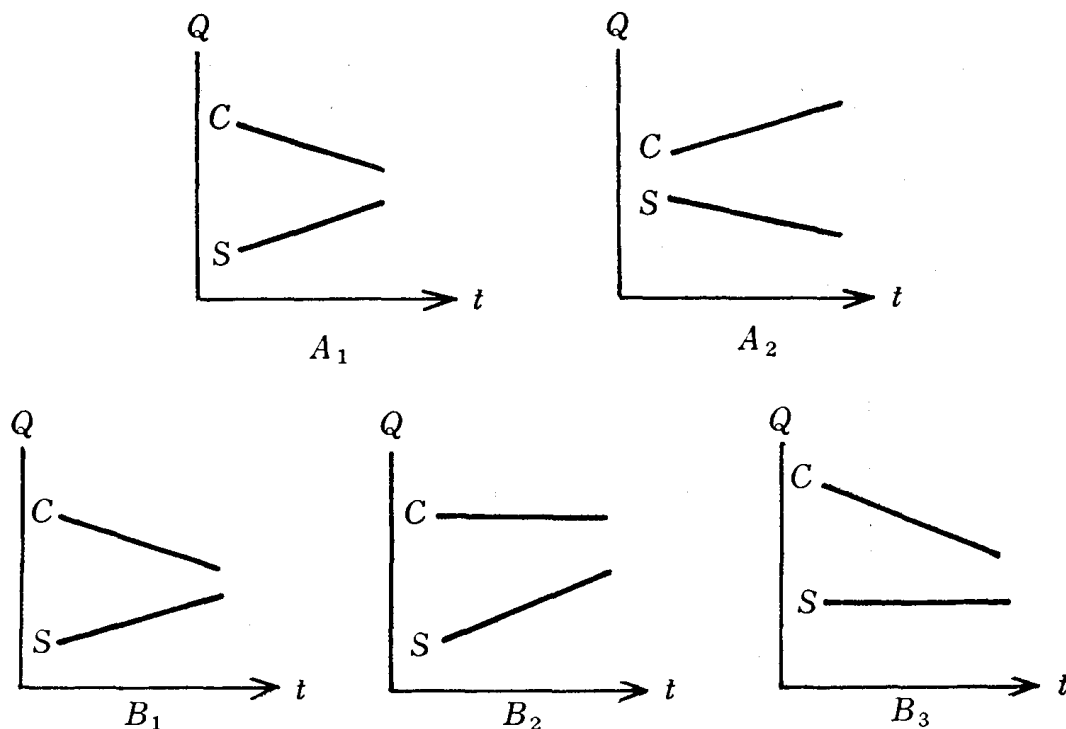
Do changes take place smoothly and continuously, or does a break occur at a certain point? Or, if instead of mathematical terms, we use the terms of Hegelian philosophy: are there such points at which "quantity switches over to quality", that is, a qualitative leap takes place? The latter case is due to the fact that the characteristic property in question—described by indicator  $Q$ —has some critical value or threshold value the surpassing of which releases a kind of explosion, that is, a revolutionary social change, Society leaps from one qualitative state to another one, or, from one "regime" to another one.

Tinbergen's original hypothesis forecast a development according to the first case; that is, through continuous and smooth changes.

#### E) Monotonous or Oscillating Movement



\* ) The latter case is called partial convergence by van den Doel, See [3].



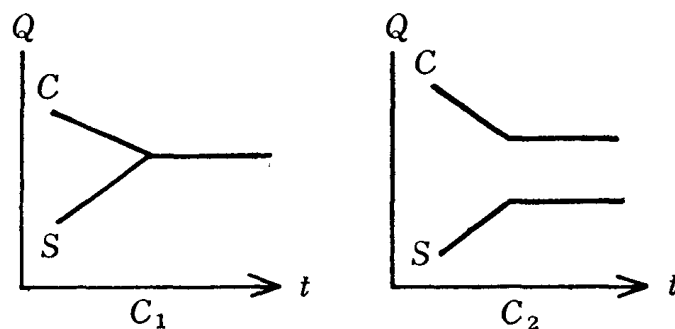
systems (see  $A_1$  and  $A_2$ ).

#### B) Relative Tendency

It is not indifferent, who is nearing whom. Do the two world systems meet halfway; or does the socialist system draw near to where the capitalist system has started, or the reverse proves true?

Tinbergen's hypothesis suggested the first case (see  $B_1$ ).

#### C) Meeting or Approach



In coming nearer to each other, do the two systems reach a point where they become identical in respect of the characteristic under examination? Or, do they approach each other only up to a certain point and from there on the difference (which has by now become smaller) will be permanent?

Tinbergen's original hypothesis did not predict unambiguously

fertile and politically it was expressive of the hopes and optimism held by a great number of well-meaning people twenty years ago. Tinbergen has by now abandoned his one-time hypothesis, as is proved by his article [13] published recently. I think that if he were now among us, he would agree on many points with what I am going to say.

The subject of the first part of my study is conceptual clarification. In the second part, Tinbergen's hypothesis is contrasted to the realities of history, making use of the conceptual and analytical apparatus introduced. There I shall do my best to avoid forming any value judgements. The third part of the study contains a few closing remarks; these carry already value judgements. Stress will be laid, however, always on comparing theory with experience. All members of the audience present should decide for themselves, upon basis of their own system of values, whether they are glad or, on the contrary, sad, on account of history taking a course different from what Tinbergen had predicted.

## 1. Conceptual Clarification

### 1.1. *Dynamics of Changes*

Convergence is a concept borrowed from mathematics. In Tinbergen's usage its content is intuitively clear: certain characteristics of the different systems come closer to each other. It would be an unnecessary pedantry to introduce at this point exact mathematical definitions. It is, however, necessary to reduce the concept to its components so as to obtain means of analysis for a more detailed description of the historical development. For this purpose it will be sufficient to introduce a few simple graphic schemes.

Let us assume that a characteristic of the system is under examination which is to be clearly described by an indicator  $Q$ . (For example, what fraction of the total transactions passes through the market channels.) In our schemes historical time is marked on the horizontal axis, and the indicator under analysis, that is,  $Q$ , on the vertical axis. The capitalist world system is marked by  $C$ , and the socialist world system by  $S$ .

#### A) Decreasing or Increasing Difference

According to Tinbergen's hypothesis, the first case will occur: we are progressing toward a decreasing difference between the two



# Convergence-Theory and Historical Reality: Twenty-One Years after Tinbergen's Article

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## Introduction

It is now twenty-one years that the Dutch economist J. Tinbergen published his article [12] of a far-reaching influence in which he expounded his convergence theory. His hypothesis in a nutshell: the capitalist economy based on the market, and the socialist economy based on central planning are converging. In the former the role of planning, in the latter the role of the market is increasing.

Today the question is widely discussed in literature. There are scientific works that complete and add details to Tinbergen's hypothesis, or compare it with empirical observations<sup>\*)</sup>. And there are other works that argue with Tinbergen and the followers of the convergence theory not from the economic but solely from the political viewpoint. I wish to join the former group with my present paper. Without any political prejudice, listening exclusively to my scientific conscience. I make my point on the question of convergence. I hold Tinbergen's theory to be an empirically testable hypothesis and I attempt to outline such a test in my study.

I regard Tinbergen as one of the greatest economists of our age. I had the honour to make his personal acquaintance; I respect and admire his scientific activity as well as his social attitude. His theory with which I now polemise has proved to be intellectually

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\*) See for example works by van den J. Doel [3], Lauterback [8] and Spulber-Horowitz [11]. In writing my study, I have been greatly inspired by the ideas set forth in the course of the dispute published in the *Cambridge Journal of Economics* (Ellman [4], Coast-Thompson [2], Ellman [5]). My view is identical with Ellman's in several important questions, or is near to it. For a detailed bibliography see Ellman's above-mentioned article [4], and Tinbergen's article [13] published in 1980.