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INTERNATIONAL TRADE THEORIES AND THE ADAPTATION PROCESS TO STRUCTURAL CHANGE IN A PLANNED ECONOMY

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Abstract. The purpose of this paper is to examine whether traditional formulation of trade theories based on factor inputs, costs and available resources can give a meaningful view of international trade mechanism of choice in a small centrally planned economy. The theoretical analysis is based on the existence of two different measurable effects from specialization of production and international trade that concern the proportional use of limited disposable resources of the country and the level (efficiency) of their returns at the world markets. The role of the planning centre and of the sectors in the process of control over the production and trade structure in the environment of structural change is discussed. Some of the theoretically outlined hypotheses are then tested by means of the Czechoslovak input-output tables.

Keywords. Economics; modelling; optimisation; international trade; specialization; computer testing.

IDENTIFICATION OF THE PROBLEM

It is of a crucial importance for the outcomes in economics on what method its cognitive approach is based. The empirical mapping of the real international trade functioning in socialist countries has accumulated a considerable collection of evidence. Its results, as far as the analysis of structural changes is concerned, draw from that kind of economic dynamics which rests on the description of "movement" in economic variables in their interdependence in time, as is the case of systems analysis, forecasting and simulation techniques. The empirically oriented models are powerful tools in analysing the past patterns forming the status quo.

However, these techniques are rather modest in explaining why the past tendencies were such as were discovered. Similarly, in ex ante simulations, the actual built-in economic mechanism of internal adaptation remains disguised in the model´s black box. It is the inherent non-intuitive "on-line" decision-making that is absent throughout the empirical approach to modelling. To rephrase the rational expectations hypothesis, the empirical economic models often do not assume enough theoretical rationality that would offer grounds firm enough to support the decisions based on explicitly stated knowledge.

If we are interested in studying the control over the causes forming the pattern of the behaviour of a given object, then necessarily an abstract logical approach to reality must be adopted. The internal causal reasoning [1] in uncovering the unfolding structures of the past and explaining the mechanism of inherent (natural) adaptation of the economy to changed situations offers a different view on dynamics than the empirical one does. If we look at an international trade mechanism from the functional side, then we should be concerned rather with the causal build-up of the structure of trade flows than with the estimates of their intensities. That is why our interest throughout this paper will not be concerned with traded quantities but exclusively with the question of what to offer for exports and what to leave for imports.

Whatever are the exogenous shocks to the national economy - the economy must always respond with the process of adaptation from within itself. Its agents must inquire deeply into its production status and question the availability of its resources and technological possibilities. If there are no alternatives - all is given and both

[1] Even though the instrumental approach to economic policy modelling is easy to derive from the model presented, the potential instruments (e.g. the resource reallocations among the sectors) were not used here in the normative (prescriptive) context. The paper attempts purely to a descriptive analysis.

the process of active self-controlled choice and allocative adaptation have no meaning. Our aim is to prove that this hypothesis is, even in a very small open planned economy, false.

THE PRODUCTION STATUS OF A SMALL OPEN PLANNED ECONOMY

The production conditions are traditionally described by two-factor production function with capital (K) and labour (L) as independent variables. Since we are concerned with structural changes and production alternatives, we must start with such breakdown of production as to single-out its individual technological peculiarities. Therefore our production functions will be classified by n sectors and n commodities. We shall assume that each sector i (i = 1,2,...,n) produces one commodity.

The central question to our study concerns the assumptions about properties, shape and location of sectoral production functions identified. For simplicity we shall assume linear homogeneous functions and consider first their unit-physical isoquants. As such, they are purely technology-determined with demand conditions totally absent. We shall also assume that there are so few Pareto-efficient production techniques related to each commodity, with their input structure so closely related, that these inputs can be treated as technical complements. The sectoral isoquants have thus very low elasticity of substitution and resemble right angles.

The fact that problems with resource substitutability and shortage are a characteristic property of planned economies, leading to a long-term barrier of growth, was long noted by O. Lange, J. Goldmann, and J. Kornai. Some recent empirical findings (Klacek, Nešporová, 1985) suggest that e.g. in Czechoslovakia the elasticity of substitution between basic factors is even further declining in time. For more general doubts raised about the sense of substitution in production functions see Pasinetti (1982).

The technologies in a small planned economy cannot be assumed identical with the rest of the world but their lagging behind the world varies considerably among the sectors. Hence the actual location of isoquants cannot be linearly derived from their location abroad. In comparison to the world standard, while using for this purpose the graphical notation of production in the commodity space, the home sectoral isoquants are shifted in various degrees farther from the origin.

Besides the peculiarities in technologies of a small planned economy, we have to allow for the price differences. Due to a different quality, image, marketing and relative seclusion of planned economies, the "law of one price" cannot hold, even though the foreign trade prices of a "small country" are always given externally and cannot be influenced by quantity offered or demanded by her.

Adjusting each unit-physical isoquant for its average foreign trade price we get a set of n unit-value isoquants. That means each isoquant is contrived for the production of a particular commodity i = 1,2,...,n in such quantity that is valued 1 million monetary units (e.g. CS crowns) if sold abroad. The unit-value isoquants will be the main building block for the rest of our study.

The preceding assumptions are obviously different from standard assumptions of neoclassic models.[2] We simply cannot expect that in a planned economy the isoquants might be neatly aligned in the order expected in a perfectly competitive economy - with free intersectoral profit-seeking factor mobility and with a perfect international transfer of knowledge. The actual allocation of resources to sectors for production of one unit-value of their output, at any domestic factor prices, varies widely among them. Therefore the ratios of real factor allocations in sectors i = 1,2,...,n have the property:

$$\tilde{K}_i/\tilde{L}_i = \tilde{\rho}_i, \quad \tilde{\rho}_i \in (0,+\infty) ,$$

while in addition there may be cases that

$$\tilde{\rho}_j = \tilde{\rho}_k \quad \text{while } (j \neq k) \quad \text{and}$$
$$\tilde{K}_j \neq \tilde{K}_k, \quad \tilde{L}_j \neq \tilde{K}_k.$$

That means both relative and absolute sectoral factor intensities (absorptions) of the production of a small planned economy are expected to be scattered largely all over the quadrant with isoquants.

All this can be illustrated in Fig. 1. The unitvalue isoquants f_1 through f_5 for commodities k_1 through k_5 are accommodated there into one quadrant where they all compete for given homogeneous resources K and L. They are dispersed at random over the quadrant (2-dimensional commodity space).

Now we can turn our attention to the causes of adaptation. We study explicitly only those causes that effect the production conditions of the home economy (i.e. the conditions of the supply). We deliberately do not deal with the problem how the pressure of internal demand for commodities (e.g. their shortages or surpluses) changes the trade pattern.

Our first determining factor is characterized by the changes in the structure of resource endowment of the country, that we shall discuss later. Then there is the technical progress that affects the location of unit-physical isoquants in time. Its influence on already established technologies does not come all of a sudden since it has a typically long-term impact. The cases of factor intensity reversals can occur mainly as a follow-up of exogenously emerging technical revolutions. But since this process of transmission is rather slack, the pattern of sequentially ordered $\tilde{K}_i/\tilde{L}_i$ ratios is at any moment different at home and abroad.

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[2] See Baldwin (1971) for a list of usual assumptions. On the other hand it does not mean that modifications are rare. At least from times of Jones' (1974) pioneering article the move away from idealized world became common.

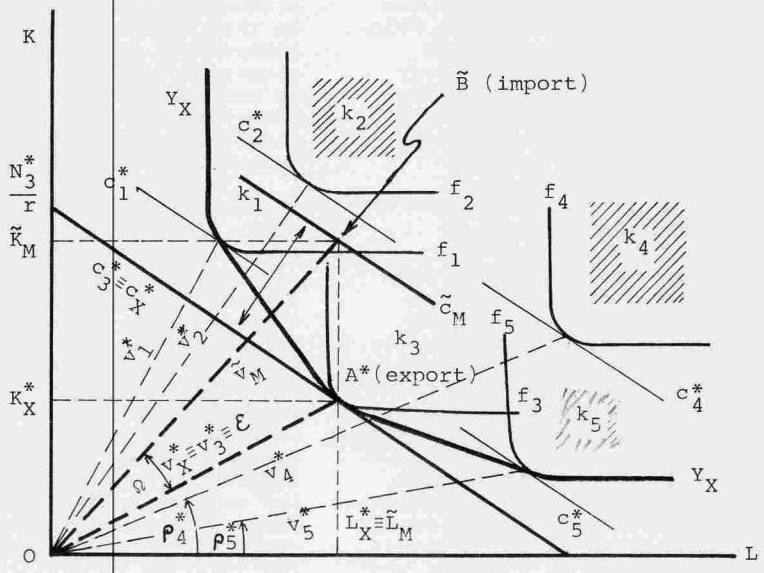

Fig. 1 Specialization principles of a small country.

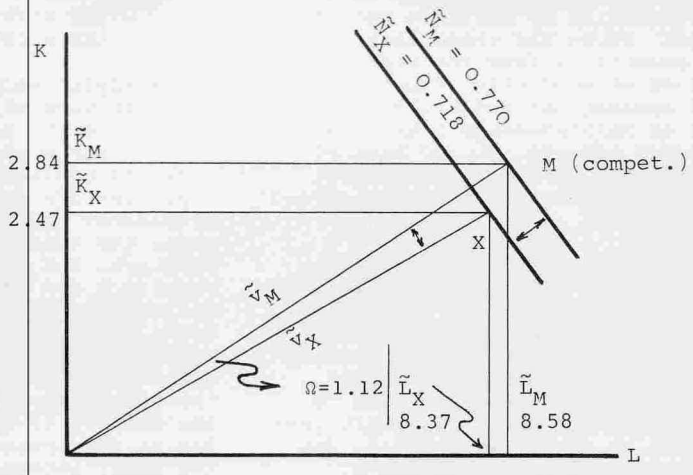

Fig. 2 The differences in full factor requirements and in total cost per 1 mil. CS crowns of Czechoslovak exports and competitive import replacements in 1982.

The main burden of adaptation in a small open economy is represented by changes in foreign trade commodity prices. They are mediated purely by shifts of isoquants along their average factor intensity lines ($\tilde{v}_i$) that connect the point of actual allocation of factors in sector i with the origin. Since $\tilde{K}_i/\tilde{L}_i$ ratios remain thus unchanged, the world price changes cannot have any direct impact on the factor intensity reversals in a small economy. We can expect the price influence to be more volatile than the two previously mentioned because it brings over not only the consequences of changes in technical conditions and/or in factor prices within the world economy but in its external demand, too.

THE EFFICIENCY CRITERIA

The adaptation process of a national economy, that makes itself manifest in the changing pattern of international trade specialization, implies structural changes in allocation of resources that from economic view are necessarily evaluated by efficiency criteria. Let us start with the problem of technical (productive) efficiency.

The technical optimization of production techniques eliminates all Pareto inneficient combinations of factor inputs [3]. The result is given by the production function itself. Its unit-physical isoquant in a closed economy must be always sanctioned as the only technically efficient mode of production of that particular commodity demanded, whatever retarded its production technique may be compared to other sectors or countries.

The technical efficiency criterion in a small open economy is by far more restrictive than that. It is the trade that enables the country to free the microeconomic structure of production from the structure of consumption while the link between them is maintained by a universal foreign exchange account. Or, in planned economies, instead of convertible funds, the link is rather maintained by pre-agreed trade-flow balances.

The technically efficient production for export (X) is formed only by those segments of isoquants that lie on their convex hull. The hull is an "envelope" delineated by "south-west" bordering isoquants connected by common tangent chords. Now the total factor endowments of the country come to the fore. At any given moment they are physically limited at the level $\bar{K}$ and $\bar{L}$. The hull depicts the evolving structure of ideally specialized production [4] under different total $\varepsilon = \bar{K}/\bar{L}$ endowment ratios of the country. It can be interpreted as a universal unit-value isoquant for the technically efficient "production" of one unit of foreign exchange. In Fig. 1 the convex hull is depicted by curve Y_X. In further text we shall refer to it as to the composite isoquant of export commodities.

Hypothetically, in a fully specialized small economy, the hulls for all positive values of production can be integrated into aggregate production function sui generis. It widely differs in concept from standard 2-factor aggregate production function conceived primarily for structurally stable production patterns. Its important property is that its elasticity of substitution is independent from, and higher than, the elasticity of sectoral isoquants from which it was derived [5]. There may even be the case that sectoral isoquants with zero elasticity of substitution form a composite isoquant (a hull) with infinite elasticity.

The importance of Y_X isoquant for decisions about trade structures is paramount. The given total factor endowments of the country - actually the relative factor endowment line ε - point straight on Y_X which commodity is to be produced for export (and also for home consumption). All remaining commodities are to be imported. If the endowment line ε intersects Y_X in its flat segment then two nearest commodities on Y_X are produced. Otherwise a single specialization is undertaken. For simplicity the later case is depicted on Fig. 1 where the country specializes exclusively in production of commodity k_3 with factor requirements K_X^* and L_X^*, both given by point A*. (By asterisk we shall mark the optima.) The surprising conclusion is that we have found the point of optimal allocation of resources in a small open economy without even using the traditional cost or profit criteria.

THE ADJUSTMENT OF MACROECONOMIC AND MICROECONOMIC VIEWS

The analyzed mechanism presents a macroeconomic view of the allocative decisions concerning the production and trade structure of the economy. The implied point A* marks an equilibrium, where all domestic resources are engaged in the most efficient disposable technique, while the trade provides the required structure of final consumption. The latter, in relation to the country's endowments, is also at its Pareto optimal level. It seems now that this all could be decided from the planning centre simply by being guided by the technical efficiency criterion of production and by the proportional use of scarce resources the country is endowed with. The condition for it is, however, that the centre knows the exact location of the composite isoquant Y_X - and that cannot be achieved without the help of sectors.

The presented macroeconomic view of specialization must be therefore confronted with the microeconomic view and motives of all production agents in sectors. They, as relatively independent decison-makers, have a totally different view of the matter. What they locally see are the given prices of commodities, given prices of factors, their own sectoral isoquant and the (infinite)

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[3] For the concept of technical (productive) efficiency see Farrell (1957).

[4] More details about the construction of the convex hull in our context provides Koopmans (1951), resp. Jones (1974). The interpretation of the flat segments on the hull rests in the parallel production of two commodities.

[5] The statement holds with the rare exception that one sectoral isoquant is dominated (contains) all remaining isoquants.

demand for their products. The decision of a sector is guided by the given cost function determined by the budget N. With it each sector seeks its minimal cost alternative for a unit-value of sales by combining the factor inputs. This can be described by the following objective function related separately in each sector to costs (N):

$$N = N\,(Y, r, w) \quad ,$$

$$N^{*} = \min\,(r.K + w.L) \quad ,$$

subject to the restraints

$$f\,(K, L) \geq Y \quad , \qquad Y = 1 \quad .$$

Y is the net production, r is rental on a unit of capital and w is the wage rate. Factor prices are assumed equal for all sectors. An equivalent formula for microeconomic decisions in this context is the maximizing of profit function as was shown by Toms (1984).

In order to illustrate the specific role of costs in our model we change the identification of cost function and contrive a budget line (c):

$$K = -\,(w/r)\,.\,L + N^{*}/r \quad .$$

If - w/r ratio is given and N^{*} means a minimal level of costs, then the budget line can be drawn as a tangent. In Fig. 1 each sectoral isoquant is assigned its own budget line c_i^{*} that depicts the local (sectoral) optimum. Since the prices of factors are common for the whole economy, all c_i lines must be parallel. Because of this fact the budget lines c_i^{*}, as well as the factor intensity lines v_i^{*}, can be ordered in ascending sequence and used as a qualifying device for any factor allocation point on our unit-value production chart.

If the given relative factor prices (-w/r) are different from $\partial K/\partial L$ ratio on Y_X curve then the sectoral allocation of production and resources is microeconomically motivated to lie outside the macroeconomic point A^{*}. It is beyond the scope of this paper to go further into the discussion of extensive strategies in behaviour of centre and sectors in ensuing controversy about the shortage of one of the factors, inflated costs, low efficiency, insufficient output, barriers to growth, etc. Since in planned economies we cannot expect that relative factor prices might be accommodated by market forces [6], it is an exclusive role of the centre to set them into the optimal ratio, removing thus the clash between local and global interests.

[6] The accommodation mechanism in microeconomic sense enforces itself rather outside the monetary sphere: queuing time and the efforts devoted to bargaining for a product in short supply are just different "coefficients of revealed choice" substituting the missing market clearing function of price in planned economies.

THE SYNTHESIS OF COMPARATIVE ADVANTAGE AND ITS IMPEDIMENTS

The logic of intrinsic properties of our model is now at its close. The main conclusion is that it is the macroeconomic interaction between the factor endowment line $\mathcal{E}$ and the composite isoquant of export commodities Y_X that determines the country´s production and trade structure leading to optimal consumption. This allocative choice must however be mediated and confirmed by the microeconomic agents by means of their local criteria; i.e. by cost and profit calculations. The condition for unanimous and identical decisions on both levels is the equilibrium pricing of factors from the centre. Macroeconomic mechanism is concerned with balancing the supply and demand for resources, meanwhile microeconomic mechanism is concerned with minimising the cost. In planned economies of our model-type the processes on both levels are necessarily complementary.

Now we are prepared to proceed to a synthesis of two seemingly different approaches to trade specialization. First is concerned with the optimal combination of factors demanded in an open economy vis-à-vis their fixed disposable proportions. We may say that this approach formally evolved into the factor proportions theory of international trade as was formulated by Heckscher and Ohlin; in free trade each country will export the commodity making relatively intensive use of the country´s relatively abundant factor.

The second approach is concerned with minimizing the total cost required for the production of a unit-value of alternative tradable commodities while their world prices are given. This approach formally evolved into the comparative cost trade theory as was formulated by Ricardo and Haberler: in free trade each country exports the commodity in production of which it has the greatest relative efficiency; e.g. where its production requires the lowest comparative cost.

Our model was designed as an outline for the explanation of an adjustment behaviour of a highly simple abstract "small open planned economy" guided exclusively by balance and efficiency criteria applied to inputs. The presented model can be challenged by a flood of objections. It is true that real condiditons may curtail the variety of expected functioning while adding many new aspects in exchange. Let us list some of the impediments to trade development in accordance with our model which are characteristic for planned economies.

Due to differences in technologies and tastes in consumption preferences among the countries, we cannot eliminate the cases of conflicts in the pattern of trade among them. Then our findings hold just in a local sense and each country must look for its own "complementary" partner. On the other hand Drábek (1984) argues that the "fundamental" technological properties of production structure in market economies are strikingly similar with those of planned economies. With that being true, the problem of finding a "complementary"

partner would be easier to accomplish on grounds of different endowments than on grounds of different relative efficiency.

There are difficulties with factor mobility among sectors in the long-run. Strong affiliation between the home input-output structure and social equality norms hamper the execution of shut-down programmes and encourage the autarchy tendencies. Slack adaptation to the advancing world´s know-how also contributes to a rise of large non-competing import requirements that are formed beyond traditional capital and labour (factor) determinants. The concept of "human capital" (resp. research and technical knowledge potential), which is not included in this model, could however explain the specialization of that kind.

Price and capacity imperfections as well as transport costs shrink the feasibility area of specialization. Consequently a large production for home consumption may arise, thus setting a bias to the demand for factors based on tastes. The system of trade subsidies and taxes or multiple exchange rates (if they apply) may cause informative distortions, thus shifting the long-run decisions in the microeconomic sphere and, with it, the specialization pattern.

Last but not least, there may be shifts in motivation, as reflected by different criteria used. Our model, where the trade is caused by the need to reconcile the disposable inputs with conditions in production, can be contrasted with a different trade scheme that rests in need to reconcile the disposable outputs with conditions in consumption and intermediate goods demand. There the shortages and surpluses of commodities are sought and measured by internal momentary utility. Superseding the cost minimisation criterion by such utility maximization criterion may not only lead to a different short-run trade structure but also to different allocative decisions (mainly anti-import orientated) which extend further into the long-run the gap between the accommodation of trade structure in accordance to the functioning of these two different criteria.

The cases of imperfections or institutional guidance notwithstanding, the central situation still remains: a small planned economy has relatively limited resources confronted by an enormous number of diverse demands from various sectors. There is a microeconomic problem of how to allocate the resources and to maintain the efficiency. At the same time there is a macroeconomic problem of how to allocate the resources and to maintain the balanced proportions in their use. The openness of the economy enormously facilitates the solution of both problems, especially if the country is small.

The discussed traditional model concerns the reconciliation of both problems by bringing them into conjunction. Both criteria needed for decisions concerning the specialization pattern, i.e. the criterion of proportional factor use and the criterion of allocative efficiency of costs, remain the cornerstones of any natural social conduct. The alternatives of choice in this respect are under the mutual control of the agents of the economy. These alternatives are highly diversified and, as such, unlimited.

THE EMPIRICAL TESTS

It would be interesting to investigate whether or not the comparative advantage may explain the pattern of actual trade specialization in a small planned economy. I tested on that account the data from Czechoslovak input-output tables in years 1967, 1973, 1977 and 1982, given at factor cost current prices. The labour was measured in man-years and the capital refers to stocks adjusted for depreciation.

Unfortunately the tables contained trade shipments evaluated at internal prices inclusive of foreign trade taxes and subsidies that impaired the natural model view of the process of allocative choice. Another problem is with the scale of classification. The 28 industries used were far from the best choice to represent "commodities". Hence the results must be interpreted only as broadly informative.

The method adopted was similar to Leontief´s (1953, 1956) . The isoquants f_i were interpreted in his zero elasticity of substitution sense with allocations in their apex given by full (direct and indirect) factor content of a unit-value of final production for exports and for import replacements. The respective inputs of intermediate goods were therefore accounted for in terms of their labour and capital requirements and were added to direct factor use in final output. To illustrate the method, in Fig. 1 the factor content of unit-value of exports in point A^* is indicated by values $\tilde{K}_X$ and $\tilde{L}_X$. Similar factor content for imports $(M)^X$ in point $\tilde{B}$ is indicated by values $\tilde{K}_M$ and $\tilde{L}_M$. Our aim is to estimate the actual position of those values from real data. The estimate of import´s factor content is based on hypothesis: what factor requirements would be necessary to replace a unit-value of imports by domestic production. Of course, the composition of a unit-value of imports or exports must reflect the weights of their respective industrial structure.
The results are shown in Table 1.
If the competitive imports were used, the X/M characteristics decreased to 0.87 and 0.97 (Ω = 1.12) in 1982 and to 0.86 and 0.95 (Ω = 1.11) in 1977. Nevertheless the results still imply the existence of net savinds of capital as well as the substitution of exported labour services for imported capital services. At this point, however, we can identify a partial "paradox" of Czechoslovak trade structure which is increasing over time. The "paradox" seems to be explainable by the growing role of the non-competitive imports of natural resource products that are highly capital-intensive. E.g. the level of long-run non-competitive imports chosen for tests amounted to 46 % of total imports in 1982 and only 37 % in 1977. Nearly a half of the excluded commodities were natural resource products.

Since natural resource products are very important determinants of Czechoslovak

TABLE 1 Leontief Characteristics of Czechoslovak Trade

Year	Factor	Export (X)	Import (M)	X/M	Ω
1982	Capital	2.47	2.71	0.91	1.24
1982	Labour	8.37	7.41	1,13	
1977	Capital	2.46	2.68	0.92	1.17
1977	Labour	10.66	9.89	1.08	

TABLE 2 Full Factor Requirements per Unit-value of Czechoslovak Trade in 1982

Region	Factor	Export (X)	Compet. import (M)	X/M	Ω
Socialist countries	Capital	2.33	2.74	0.85	1.19
	Labour	8.42	8.30	1.01	
	Fuels	0.116	0.165	0.70	
	Fe metals	0.377	0.417	0.90	
Capitalist countries	Capital	2.80	3.02	0.93	0.98
	Labour	8.27	9.07	0.91	
	Fuels	0.189	0.139	1.36	
	Fe metals	0.379	0.313	1.21	

TABLE 3 Cost Content of 1 million CS Crowns of Czechoslovak Exports and Import Replacements (in 1982)

Exports to socialist countries	0.696 mil.
Replacements of imports from soc. countries	0.759 mil.
Exports to capitalist countries	0.773 mil.
Replacements of imports from cap. countries	0.791 mil.

trade structure, I extended the method by introducing the fuel and energy requirements (in current internal prices) per unit-value of exports and import replacements. In order to analyse the structural bias in trade with centrally planned and market-type economies, the tests were performed separately with socialist and capitalist countries.

The results for Czechoslovak full factor requirements per 1 mil. CS crowns of exports and competitive import replacements with socialist and capitalist countries in 1982 are shown in Table 2. Similar tendencies have been revealed by tests using 1977 input-output table. In the 5-years test period Czechoslovakia was a net importer of capital and of natural resource intensive products, as far as socialist countries were concerned. At the same time there can be seen a bias towards exporting the labour intensive products. This trade pattern allowed for substitution of missing natural reserves (the exploatation of which is notoriously capital intensive) by relatively abundant labour embodied in exports.

The trade with capitalist countries was more or less neutral, as far as the trade-off between capital and labour is concerned(at least in the analysed period). However, there is evident a substitution of both of them for natural resource products that were exported. Unfortunately the attempt to qualify the traded labour services by skills or education was not very persuasive. The prevailing methods of estimation of "human capital" [7] seem to be of little value for a socialist country where wage differentials do not reflect the "investment" into education which was covered mainly by the public budget. Our results on Czechoslovak data namely did not show any particular trend in both regions in this respect.

The results suggest that the hypothesis about the factor proportions principle lying behind the structure-forming mechanism of Czechoslovak trade was not proven false in 1982. Similar results for the period 1967-1977 imply that in the pattern of specialization can be seen a mild recovery in the role of labour intensive products in exports - a tendency which seems to be intuitively in accordance with the country's relative endowments.

The tests of cost economies in trade were derived from a cost function: $N_j = K_j.r + L_j.w + M_j$ where K, L are full domestic capital and labour requirements as shown previously; r is an evaluation of annual rental per unit-value of capital

[7] See e.g. Stern, Muskus (1981) for a brief restatement. Their human capital estimates use wage differentials as proxy values for higher skills.

(0.065 mil. CS crowns); w is an average wage bill per man-year (0.04062 mil. CS crowns); M is full import of intermediate goods required for a unit of X or M; j = {X,M} denotes the type of costs (i.e. for a unit-value of X or M).

The estimates of full cost expenditures in 1982 for a unit-value of exports and competitive imports are indicated in Table 3. Fig. 2 illustrates the estimates for trade with all countries taken together. As can be seen the specialization in exports was orientated to commodities with higher returns on cost expenditure than it was in imported commodities. These results are also consistent with our microeconomic hypotheses. That means empirical tests undertaken also in this case did not prove our logical reasoning false.

CONCLUSIONS

We can conclude with a final remark that our model could have both the descriptive and normative interpretation. Up to this point our interest was exclusively devoted to the former. It is a very hard task to judge normatively whether the results present such a degree of polarity between export and import structures that might be supposed sufficient as evidence to support unanimously the hypothesis about the existence of the trade-structure forming mechanism discussed. The fact is that in tested years both the variance in factor intensities among sectors and the variance in average sectoral factor costs for a unit-value of production were quite striking. If we compared these real preconditions to trade with our model implications (constructed for an ideal environment) then it suggests itself to conclude that the differences in tests between exports and imports, and therefore the effects from specialization, might have been substantially higher.

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