EUROPEAN UNIVERSITY INSTITUTE
Department of Economics

THE EVOLUTION OF SOVIET FOREIGN TRADE. AN ATTEMPT TO ASSESS SOVIET DEPENDENCE ON FOREIGN TRADE

by

Renzo Daviddi

Thesis submitted for assessment with a view to obtaining the Degree of Doctor of the European University Institute

Florence, June 1988

THE EVOLUTION OF SOVIET FOREIGN TRADE. AN ATTEMPT TO ASSESS SOVIET DEPENDENCE ON FOREIGN TRADE

by

Renzo Daviddi

Composition of the Dissertation Committee:

Prof. Alberto Chilosi, University of Pisa
" Phil Hanson, CREES, University of Birmingham
" Wojciech Maciejewski, University of Warsaw
" Domenico Mario Nuti, E.U.I., Supervisor
" Jozef van Brabant, United Nations, New York

TABLE OF CONTENTS

Part II. Soviet foreign trade in the 1970s: an increase of dependence?

TABLES.

GRAPHS.

CHARTS

ACKNOWLEDGEMENTS.

A Ph.D. Dissertation is never written without the help of others, and mine is no exception. Mario Nuti first encouraged me to study this particular topic and then guided me with advice and criticism. I have benefitted from discussions with Alberto Chilosi, Giovanni Graziani, Wojciech Maciejewski and Jozef Van Brabant, who read and commented previous versions of the manuscript. Sheila Marnie and Jessica Spataro substantially enhanced its legibility, with precious editorial work. Despite all this help, I remain solely responsible for any mistakes, misjudgements and misconceptions.

Finally, I wish to thank my parents for their continuous encouragement, support and interest in my education. My wife Roberta took the brunt of the burden, having to share time with a manuscript so many times referred to as "almost" finished.

1. AIMS, HYPOTHESES AND METHODOLOGY.

The question of a nation's participation in international trade can be tackled from at least two different points of view. The first concerns the nation's role in international trade, that is its behaviour on the world market, its impact on commodity and factor markets. The other deals with the role foreign trade plays in the domestic economy. As far as the USSR is concerned, several studies have attempted to analyze the first set of problems from various perspectives and no attempt will be made to replicate them here 1.

The main objective of this research is instead to assess the role foreign trade plays within the Soviet Union. In particular I shall investigate whether the process of "opening up" that has characterized the 1970s has led to some form of dependence of the Soviet domestic productive process upon foreign trade.

The extent of a nation's participation in foreign trade varies depending on size, natural endowment, geographical proximity to dynamic markets, historical trends, political

---

1. Western contributions include the classic textbooks on C.P.E. trade by Wiles (1968); Holzman (1974) Boltho (1971). The determinants of Soviet foreign trade have been investigated among others by McMillan (1973a), (1973b), (1974); Rosefielde (1973), (1976a), (1976b), (1979), (1980) and Gardner (1979), (1983). Recent developments have been summarized for instance by Hanson (1982c), (1985), Hewett (1983), Zoeter (1982), McIntyre (1987a). The impact of the Soviet Union in particular commodity markets has been studied, among others, by Kostecki (1984).

factors, etc. Since 1917 the Soviet economy has been characterized by a strong autarkic tendency, built into the planning system and strengthened by Soviet growth policies and the state of its international relations. Two notable exceptions to this autarkic bias were the foreign trade drives of the 1930s and 1970s, periods characterized by relatively high trade turnover with foreign countries and increasing trade participation ratios. We may conjecture that the two drives share a common determinant, namely the necessity to speed up the process of growth: in the 1930s, the attempt to achieve the rapid industrialization of a backward agricultural country, in the 1970s, the necessity to improve the quality of production and to stimulate innovation. The two periods, however, present divergent price trends: terms of trade deteriorated dramatically in the thirties, while they moved strongly in favour of the Soviet Union in the seventies.

The hypothesis is often advanced that since 1970 the rapid increase in trade and cooperation with Western industrialized countries and the substantial failure of programs of specialization and integration inside the CMEA 2

---

2. Throughout this work, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland and Rumania are referred to as the East European members of CMEA, also indicated as Eastern European countries or Eastern Europe. Other members are Cuba, Mongolia and Vietnam. The East European six and the USSR accounted for 90% of CMEA total trade in 1980. The group "Socialist countries" includes: CMEA plus Albania (formally still a member of CMEA), China, North Korea, Yugoslavia, and since 1979, Laos. Developed capitalist countries, also referred to as Western industrialized countries, and less developed countries represent the aggregate "non-socialist countries". The following countries are included

have involved a growing dependence on markets outside the socialist community. It is true that Soviet trade participation ratios have increased during the last two decades and that the share of non-socialist partners in total Soviet trade, as measured in current prices, has increased significantly since the second half of the 1960s, through the 1970s. Over these years foreign trade appears as one of the most dynamic elements in the Soviet economy. Import of Western machinery increased dramatically, with a growing reliance on Western sources of finance and consequently an exceptional increase in Soviet hard-currency debt. The shift in import and export flows has led some scholars to postulate a substantial re-orientation of Soviet trade away from the socialist area towards the Western industrialized countries. However, as has become increasingly clear in the first half of the 1980s, Soviet trade performance did not stem from a deliberate growth strategy, and most of the outcome can be related to the dramatic price fluctuations on the world market. To a large extent we can say that an unexpected and large improvement in USSR terms of trade has naturally offset an unexpected and large deceleration of growth rates, allowing the USSR to avoid adopting an adjustment policy.

-DCs: West Germany (including West Berlin), Finland, Italy, France, Japan, USA, the U.K., Netherlands, Belgium, Austria, Canada, Switzerland, Greece, Spain, Australia, other countries; -LDCs: India, Argentina, Libya, Iran, Iraq, Brazil, Afghanistan, Egypt, Syria, Nigeria, other countries.

In particular a very large portion of the apparently growing dependence must be imputed to price movements; data in real terms show that no substantial shift in the regional export dependence of domestic production and import dependence of domestic consumption has occurred. This does not mean that trade with the West has had a marginal role over the period. There are sectors which greatly benefited from the contribution of Western know-how and technology, and others where the process of substitution of domestically produced for imported goods would be a difficult task. But it is clear that the way out of the economic stagnation presently affecting the USSR has been identified in the first place with a more rational and efficient utilization of domestic resources, and secondly, in a closer collaboration and integration within the CMEA. The purpose of this research is that of substantiating, qualitatively and quantitatively, these arguments.

At the beginning of the 1980s a large body of literature emerged on the issue of Soviet dependence on foreign trade and more generally on the vulnerability of the Soviet economic system to external forces. In these studies dependence was measured almost exclusively by import and/or export ratios to an indicator of national income 3 and often identified with threat and fear of political leverage and with the use of trade as an instrument to influence the foreign policy of the USSR 4. Indices were generally

---

3. For instance: Treml (1982); Vanous (1982).

4. See, among others, Mueller (1976) and (1978);

calculated at the aggregate level, without taking into account sector data or drawing a distinction between different trade partners. The debate has focused mainly on the way in which trade vectors are evaluated (i.e. at domestic prices, foreign trade prices or prices prevailing on the world market), without appropriate reference to all the methodological obstacles involved in the assessment of Soviet aggregated trade flows. Many authors also seem to imply a one-to-one correspondence between rising trade shares and the vulnerability of the Soviet economy to external forces. Obviously, dependence raises the possibility of inflicting damage on the trade partner, but more generally it depends on the "flexibility", the capacity to "substitute" of the system. The growth of foreign trade, especially with Western industrialized countries, has increased the sensitivity of the Soviet economy to external shocks, especially via fluctuations of world market prices for raw materials. But defining and calculating an actual indicator of dependence is a much more complex task. An increasing ratio of import or export to GNP, however it is calculated, cannot be considered a sufficiently reliable indicator of the level of dependence of the Soviet economy on its foreign trade sector, especially if it does not take into account the commodity and geographical composition of trade.

Knirsch (1978) and (1980); Goldman (1979).

The present study is organized as follows. In the first part a more complete concept of dependence is introduced and analyzed. Dependence will be interpreted as the reverse of the advantage derived by a particular nation from its participation in international trade with specific partners or groups of partners, as an indicator of the sensitiveness of a country's current performance and future development with respect to international trade.

The conceptual framework will be developed in chapter 2: the concept of dependence is first discussed at a theoretical level (sections 1 to 3) and then the peculiar characteristics of a centrally planned economy with respect to trade are examined.

Chapter 3 presents a survey of the literature on Soviet foreign trade dependence. The first section reviews aggregate indices of trade participation and dependence, the various methodologies followed for their calculation and gives description of the controversy over the evaluation of trade flows and income aggregates. The following section of this chapter deals with a brief survey of the large number of contributions on leverage and embargoes. The chapter ends with an evaluation of Soviet perception of the problem.

The second part of the work attempts to measure Soviet foreign trade dependence.

The opening process of the 1970s is critically re-examined in chapter 4. A comprehensive set of data in real terms, recently made available by the United Nations, are compared with data in current prices, and the key aspects of the period evaluated by means of data disaggregated by main

trading area and commodity group. The first section of the chapter analyses overall trends for the period 1960-1985. The following section discusses the hypothesis, often advanced in the literature, that the Soviet Union in the 1970s saw a dramatic shift in the geographical direction of its trade towards Western countries, with a consequent increase of dependence on western sources of imports and Western markets for its energy exports. Finally, in section 3 dependence is related to the role that trade plays at sectoral level and considerations are developed concerning two basic sectors of the Soviet economy: the Machine Building Metal Working (MBMW) sector and the energy sector.

The Soviet "special" relationship with Eastern Europe is analysed in chapter 5, where the concept of negative dependence, i.e. the opportunity costs incurred by the Soviet Union in its trade with the European partners of the CMEA, is introduced and utilized. The various implications of the existence of an asymmetric relationship between the USSR and the EE6 are examined in the first three sections of the chapter, while the fourth deals with a survey of recent literature on gains and losses in intra-CMEA trade.

Chapter 6 is devoted to analyse the rationalization of the foreign trade sector recently attempted by the new Soviet leadership. The chapter attempts to investigate the possible consequences of the reform and in particular its implications on the level of Soviet trade participation and dependence.

Some concluding remarks summarize main findings and limitations of the research.

PART I. REFERENCE: DEFINITION AND ISSUES.

2. THE CONCEPTUAL FRAMEWORK.

The concept of dependence has been widely used in economic literature, especially when describing North-South relations. It has, however, assumed a large variety of meanings not only pertaining to economic relations, but also with reference to various social, political and economic dimensions. Interest in the issue arose also in the post-war period in the context of East-West trade relations. More recently it has regained popularity due to problems concerning the gas-pipeline deal between western Europe and the USSR and the attempt by the United States to impose sanctions on trade in response to the Soviet invasion of Afghanistan. The aim of this chapter is to define the term dependence as precisely as possible and to develop a few observations on its applicability to the Soviet economy.

2.1. The concept of dependence.

The body of literature that has flourished around the concept of dependence is so wide that I will not even attempt to summarize it here. More simply I would like to discuss some of the definitions that have been proposed.

This area of study appears heavily beset with problems of definition. According to Duvall

> there is general agreement that the term dependence refers to asymmetric properties of the structure of relationship among social entities, but .. there is a lack of real precision, conceptual clarity, in the particular asymmetric structural, or relational, properties that are denoted by the term 5.

Terms such as dependence, vulnerability, interdependence are used interchangeably in different contexts and with a plethora of meanings 6.

Dependence is often identified with some reliance on foreign actors, a state of subordinate or subject relationship. Its supporters "... seek to probe and explore the symmetries and asymmetries among nation-states" 7. This study is particularly concerned with dependence on the outside world created by economic relations 8.

---

5. Duvall (1978), p.52.

6. A very detailed survey of the literature concerning dependence and dependencia theory can be found in a monographic issue of International Organization 32(1),1978. Sometime a distinction is introduced between dependence and dependency, a comprehensive analysis of historical processes of socio-structural transformation, "especially 'distortions' of 'peripheral' societies that result from, or are the reflections of, the incorporation of those societies into the global capitalist system" Caporaso (1978), p.6. The latter concept, however, has to be interpreted mainly as lack of national independence, something that does not pertain to our research.

7. Caporaso (1978), p.2.

8. In the context of Soviet foreign relations the concept of dependence may be fruitfully applied both to investigate Soviet "imperial" relations with Eastern European countries after the Second

Dependence cannot be considered necessarily a "one-way" relation, i.e. a situation where just one of the agents involved "depends" on the actions of others; it causes a mutual relation, though not necessarily a symmetric one. However this interpretation is too wide; according to it all trade relations are relations of dependence and all nations are in one way or another interdependent. As has been suggested by Michaely, we can restrict the definition by stating that when the extent of dependence in both directions is equal it is possible to speak of interdependence and that a relation of dependence is one in which inequality or asymmetry in the extent of mutual dependence is involved 9. This kind of meaning is closely linked with the concept of vulnerability. According to the same author,

> a nation is "dependent" on others via its foreign trade to the extent that it is vulnerable to the disruption of its trade - either its complete elimination, or the partial disturbances of its trade flows 10.

Dependence may be considered a function of two components: the extent of the damage (that would occur should the disruption of flows on which the agent is dependent take place) and the likelihood of the event (i.e. the disruption actually taking place). Chart 1 attempts to

---

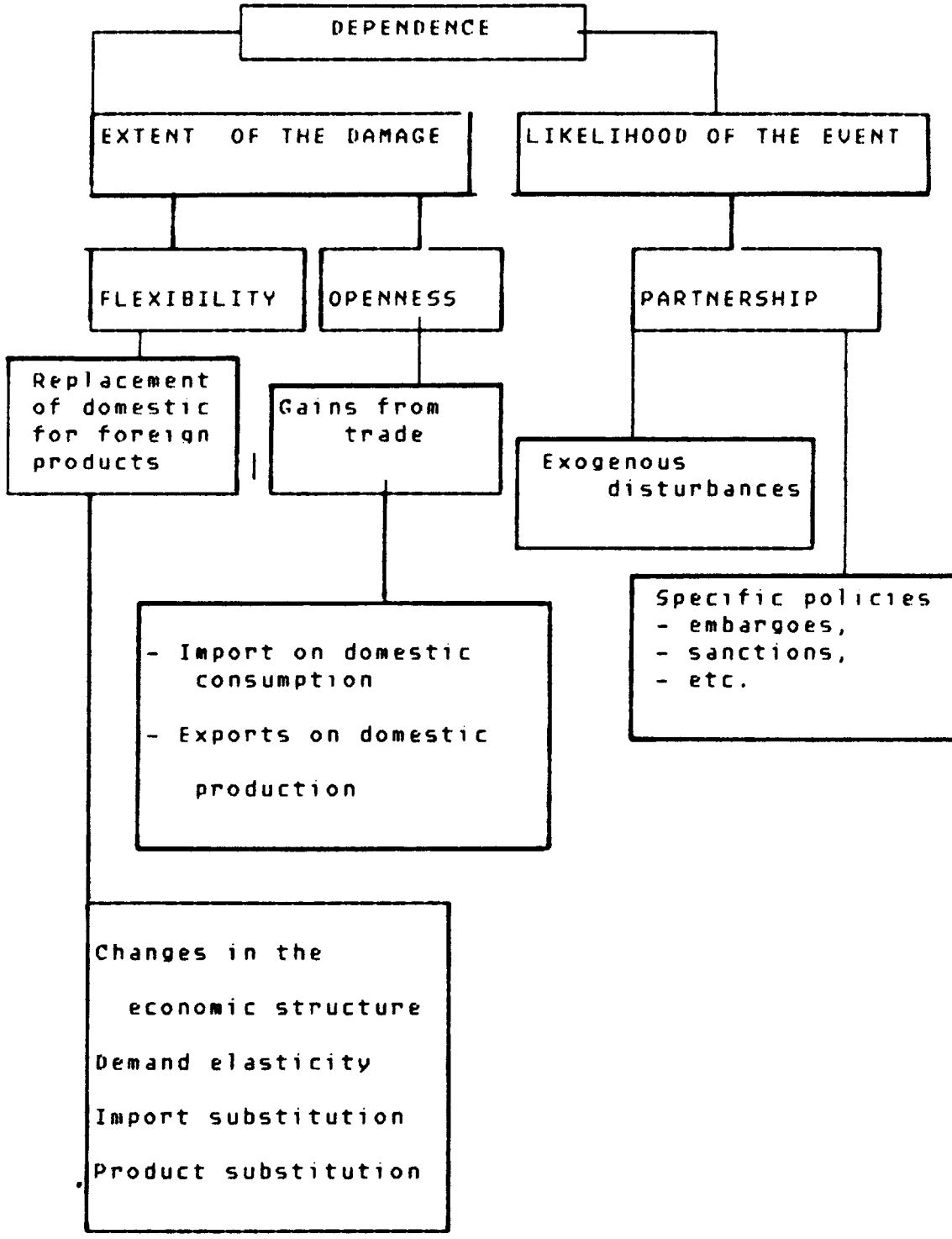
World War and Soviet reliance on external actors particularly in the periods of major "opening".

9. Michaely (1984), p. 6. On this point see also Graziani (1982), p. 10.

10. Ibid., p.7.

formalize the relationship among variables in the case of trade dependence.

Chart 1. Components of trade dependence



The extent of the damage is a function of what can be called the degree of openness of the economy and its flexibility. The degree of openness of the economy would be properly represented by the gains from trade, i.e. the improvement in economic performance and welfare that can be obtained by allowing for foreign trade in a completely closed economy. Gains from trade are often approximated by indicators such as the size of the foreign trade sector (total trade turnover) on some indicator of income (GNP, GDP, etc.) or domestic activity (consumption, production). The degree of flexibility of the economy can be identified by the ease of replacement of trade flows by home transactions. The ability to reduce demand in response to price (terms of trade) changes (demand elasticity), import and/or product substitution, and the adjustment of the economic structure in the event of foreign demand shortfalls are all components of flexibility. The likelihood of the event is mainly determined by the nature and reliability of trade partners 11, and it may be the result of both exogenous shocks and specific policies (sanctions, embargoes). An indicator of this variable may be approximated by the regional distribution of trade and by the nature of the trade flows with different trade partners (e.g. bilateral versus multilateral).

---

11. This issue is extremely relevant in the assessment of Soviet dependence, since trade is very much differentiated by trading partners.

2.2. Components of economic dependence.

Several classifications of economic dependence have been proposed [12]:

- Dependence on trade in goods and services. The domestic economy imports commodities from the outside world necessary for the productive process and part of the domestic production relies on external markets. In this respect, the issues can be subdivided further into import and export dependence.
- Dependence on transfer of technology. Both embodied and disembodied technology transferred through trade may become an essential component of the domestic productive processes.
- Dependence on foreign currency earnings and capital income. In the case of an economy that lacks hard currency, as is usually the case with the centrally planned economies of Eastern Europe, a motive of dependence is related to the possibility to earn hard-currency in transactions with foreign partners. The impact of foreign capital on the domestic economy may show itself in a variety of ways, all more or less related to the fact that part of the productive resources may be owned by foreigners.
- Dependence on foreign labour and labour income. Foreign workers may be used and/or part of the domestic labour force may be employed abroad. In the first case a foreign-provided element is again an essential component of the domestic

---

12. Cf. for instance Michaely (1984), pp.4-6 and Mueller (1978), pp.215-7.

production of goods and services; in the second, part of the national income may be provided by the rest of the world's payments to the workforce.

2.3. Flexibility: foreign trade and the home market.

Many analyses of dependence tend to identify the degree of openness of the economy with its vulnerability, without properly taking into account all the repercussions that may arise, the adaptation processes and compensating mechanisms that may be activated in the event of disruption of trade 13. In fact, according to our definition, only in the event of trade flows not being properly substituted by home market transactions, would it be possible to speak of dependence 14. It is therefore essential to evaluate the capacity to substitute in the economy. An attempt to work out the repercussions that may be generated in the event of a reduction in imports may further clarify the issue 15.

The reaction of the economic system to an unexpected variation of import flows, in particular to a reduction of imports, is likely to be rather different in a short-,

---

13. This aspect is particularly relevant in analyzing Soviet foreign trade dependence. Cf. Chapter 3.

14. As far as the Soviet Union is concerned, intra-bloc substitution, i.e. substitution taking place inside CMEA, has to be taken into account too.

15. The analysis, developed in terms of import flows, could be extended quite easily to the case of exports.

medium- and long-term perspective. The impact will also differ among intermediate products, raw materials or consumer goods. The central issue is represented by the substitutability of the foreign product by a domestic one at a given structure (short term perspective). Subsequently other sources of supply may be identified, both domestically or in the external markets.

Let us illustrate the problem with a hypothetical example related to an imaginary product A and assuming a short-run perspective. An unplanned decrease in imports has direct as well as indirect effects. Three different alternatives may be envisaged. First, product A may have a domestic substitute and the main direct effect will be to raise the domestic production of the substitute 16. It may be supposed that the quality of the domestically produced good is somewhat lower than the foreign alternative, and that the product is manufactured at higher production costs, but on the whole the economy will not suffer too much from the import cutback. Second, product A may have no substitute, in which case there will be more damaging consequences. As long as inventories are present, the supply of product A may be reduced in all the sectors where it is less damaging (rationing hypothesis), lowering output in some sectors in order to permit "normal" production of some priority sectors. If product A is an intermediate good indirect effects will be produced too. The effect will be largest if there is no substitute, not only for A, but also

---

16. If full capacity is utilized, as indeed can be the case in CPEs, there will be a drop in other sectors.

for any other products in which A enters as an input (maximum damage hypothesis). On the other hand, the effect will be less disruptive if substitutes for A-intensive products can be found. In a longer period of time, different results may be expected, such as, market substitution, diversification of suppliers or even development of R&D activities in the affected area.

2.4. Central planning, foreign trade and dependence.

So far dependence has been discussed without considering the kind of economic system in which trade takes place. This section is devoted to a brief discussion of some of the specific features of a centrally planned economy (CPE) with respect to trade and dependence.

In the previous pages dependence has been related to the advantages deriving to a particular nation from its participation in international trade. In particular a real involvement in international trade has been associated with an increase in the degree of interdependence between two different economies, or in the event of asymmetric relations, with an increase in dependence itself. Conventional trade theory suggests that a system which underutilizes its trade potential "will", as expressed by Gregory and Stuart, "deny itself the advantage of specialization and will be forced to produce at home a wide range of products, some at low efficiency relative to world

standards" 17. In other words, refusal to trade means to forego an additional source of growth and a systematic underutilization of trade potential results in a loss of efficiency.

In the relevant literature there has been some debate as to whether or not the level of trade of a CPE tends to be lower than that of a market economy of comparable size and resource endowment. In the particular environment of a CPE, where all the relations between variables have to be defined in advance, trade introduces uncertainty into the planning process and makes the domestic economy subject to external fluctuations. According to standard theory (Brown, Holzman, Wiles) the level of trade of a CPE is mainly determined by import requirements: exports are considered a "necessary evil" to procure imports. In other words the quantity oriented nature of the centralized system tends to limit risks by minimizing dependence on outside suppliers, even for products that could be acquired more economically abroad. Even more strongly, it can be suggested that the centralized system tends to prevent a full exploitation of comparative advantages and participation in the international division of labour. There is a trade-off between minimizing the risks involved in trade (low level of dependence) and a complete exploitation of the advantages deriving from participation in international trade.

In the literature, CPEs in general, and the Soviet Union in particular, have been treated mainly as closed, semi-autarkic economies. The characteristics of the

---

17. Gregory-Stuart (1981), p.332.

centralized system of planning seem to indicate, in fact, a substantial lack of openness in the sense of direct and automatic exposure to trade competition 18. But even a nation of the size and the resource endowment of the Soviet Union cannot rely exclusively on domestic resources; the necessity to get involved in trade comes primarily from the requirement to fill shortages and/or remove bottlenecks.

Specific features of the classic Soviet economic system tend to reinforce trade aversion 19. The main one is the monopoly of foreign trade, established in 1918 and re-affirmed in the 1976 Constitution, according to which the state has the exclusive right to undertake trade with foreign partners.

The administration of the monopoly has been carried out until now by the Ministry of Foreign Trade, which draws up various trade plans in accordance with other central authorities (Gosplan, Gosbank,Foreign Trade Bank, etc.) taking into account the overall indicators of national economic development. The most important of these plans is the export and import plan in which overall imports and exports are first set in the aggregate and then broken down into trade with various groups of countries. The shipment of exports from industrial ministries to the Ministry of

---

18. The issue of what determines Soviet trade outcomes has been addressed extensively, even though not conclusively, in the literature, among others, by: Brown (1968); Hewett (1980a); Holzman (1966) and (1974); Wiles (1968).

19. New measures introduced at the beginning of 1987 modify partially the "classic" system. A full account of those measures is presented in chapter 6.

Foreign Trade and the shipment of imports in the opposite direction is carried out using the plans for delivery of exports and imports (the foreign counterpart of the domestic distribution plan).

Foreign trade needs to be fitted into the overall planning process: long-term planning involves provisions on the level of exports and imports, while short-term plans should contain disaggregated administrative orders. In practice, however, from year to year the level of import and export flows is for the most part a matter of marginal adjustments to previous flows, and it may be argued that the principle of "planning from the achieved level" is also applied to the foreign trade sector 20. Theoretically, the centralized system of planning and management presents advantages deriving from a direct and unified control of trade flows, allowing a minimization of damages deriving from unanticipated variations of trade flows. Reactions of the kind described in section 2.3 are much easier to handle in the context of a CPE than of a market economy, where it is necessary to coordinate a plurality of decision-making centers. However, structural deficiencies of "real" CPEs make things less simple. As for the domestic sources of

---

20. " The chief 'secret' of the Soviet technique of planning lies in the title of this article. The well known words from the achieved level denote that the plan indicators are derived by means of adding to the relevant ex-post figure a certain percentage of growth. This is the foundation of all the technique, the methodology of Soviet planning". I. Birman From the Achieved Level Soviet Studies, Vol. XXX, n.2, April 1978, p.161.

supply, the central authorities face strong pressure from below (i.e.branches of the national economy, ministries, enterprises) for additional imports, especially for producer goods. This is in part the outcome of problems which often characterize a centrally planned economy, such as the positive correlation of incentives with volume and/or gross value of output and the lack of penalties correlated with the costs of production, which leads to an "unlimited" demand for resources, or to a preference being given to investment as opposed to innovation. At the same time imports depend not only on the presence of a shortage, but also on the degree of priority given to the shortage product 21. The planners also face export constraints from below, in so far as special bonuses for export production are not sufficient to make production for the foreign market attractive. In particular costs connected with the improvement of quality, delivery, servicing of exports are higher than the gains assured by the incentive system 22.

The rouble is externally inconvertible 23, a purely domestic currency, and indeed not even that, but, particularly in the planned sector, only a unit of account.

---

21. Especially for a low priority good the shortage may be tolerated, internal uses may be rationed and/or alternatives may be found.

22. Therefore such gains are often substantial; the wholesale price of a machine, for instance, may include up to a 40% markup. See Treml (1981).

23. The rouble was removed from international quotations in 1926.

A domestic capital market is absent and the Soviet authorities do not intervene to support an official parity in the foreign exchange market. The only function exercised by the exchange rate is that of converting prices in foreign currencies into domestic prices for Balance of Payments purposes. A recent work by the World Bank 24, identifies at least thirteen different exchange rates. A partial consequence of inconvertibility is the large amount of trade that takes place on the basis of bilateral agreements. This does not involve money settlement and the prices tend to be specially negotiated 25. In particular in bilateral trade with other centrally planned economies the prices used are supposed to reflect world prices, while intra-CMEA trade prices are now adjusted annually on the basis of "world" averages from the preceding five years.

A special unit of account, the transferable (perevodnye) rouble was created in 1963 as a means of promoting multilaterality inside CMEA. In theory in transactions inside this area, a surplus in roubles could be used for repaying a deficit; in reality there is inconvertibility even inside CMEA and the share of multilateral exchanges in total has remained at a very low

---

24. Van Brabant (1985).

25. Another way to look at the same phenomenon is through the separation between hard-currency and soft-currency. The former is essentially carried out with developed and developing market economies, while the latter characterizes the exchange of the USSR with other administrative economies. Some markets economies too, Finland and India in particular, have bilateral arrangements with the Soviet Union .

level 26.

In a sense the rouble is not fully convertible into goods even within the USSR. Money alone is not sufficient, outside the retail sector, to provide a claim on available goods; a document (plan allocation) is also needed. In this sense the Soviet Union has been defined as a documonetary economy 27.

Two features of the financial system regulating foreign trade are worth stressing. First, the rouble does not link domestic prices to world prices and the structure of domestic prices diverges sharply from that of foreign trade prices. Up to 1987 a mechanism existed (the so-called Preisausgleich) according to which Foreign Trade Organizations paid the Soviet suppliers and charged Soviet purchasers appropriate wholesale prices, in such a way that the domestic operator never had foreign currency at his disposal. The wide disparity between domestic and valuta prices were adjusted via the State budget. Broadly speaking, from the microeconomic point of view there were no price differences for firms whether they sold abroad or on the domestic market 28.

---

26. A tendency towards an increase of radial trade has recently taken place. Trade among each member country with the Soviet Union has increased more than the average intra-bloc trade.

27. Berliner (1976).

28. In reality the system of incentive markups (nadbavki) on the wholesale prices operates with controversial results. See Treml(1981).

Second, the fact that the prices used do not reflect the desirability of a given transaction. The methodology for calculating the effectiveness of foreign trade is, as often happens in Soviet practice, based entirely on "engineering" rules, rather than on an evaluation of costs and benefits 29. On the one hand this procedure has allowed domestic prices to be insulated from variations taking place on the external market, but on the other hand it is the cause of important time lags in the transmission of world market signals.

---

29. Very briefly the methodology for calculating the economic effectiveness of foreign trade is based, for exports, on a comparison of valuta earnings with costs in roubles, adjusted with a corrective coefficient for the inadequacy of internal prices. On the other hand, imports are compared with analogous goods or with the cost of goods exported to pay imports (though it is almost impossible to identify which are the goods exported).

3. SOVIET FOREIGN TRADE DEPENDENCE: A CRITICAL APPRAISAL OF THE LITERATURE.

In western literature on the Soviet Union the concept of dependence is used, in an extremely restrictive way, in connection with threat and fear of political leverage and with the use of trade as an instrument to influence the foreign policy of the USSR. Mueller, for instance, in an oft-quoted definition, suggests that

> dependence exists if a country (or economic bloc), by employing or threatening economic measures (refusal to pay, embargo, termination of economic relations), can jeopardize the other country's (bloc's) security or enforce political objectives against it 30.

Obviously dependence raises the possibility of threat, but its meaning cannot be confined to this narrow usage. As has been suggested in the previous pages, increased involvement in international trade does not necessarily bring with it a rising vulnerability to external trade pressures. With a few exceptions, more recent Western literature on the topic has confined itself to working out simple economic indicators of trade participation and to discussing the various strategies for influencing Soviet behaviour through economic pressure. The aim of this chapter is to selectively review the debate on these issues. However, since the problem has been discussed extensively, it would be impossible to give an account of all

---

30. Mueller (1978), p.214.

contributions. The first section of the chapter surveys the articles on Soviet trade participation. The second summarizes the debate over sanctions, embargoes and economic leverage, which was particularly lively at the end of the 1970s. Finally, a brief excursion into Soviet and East European sources is undertaken.

3.1. Soviet trade participation and dependence.

The most significant contributions to the analysis of Soviet trade dependence consist of an assessment of the degree of openness of the Soviet economy, based on the analysis of aggregate indices of imports and exports to an indicator of national income, the so-called trade participation ratios, often considered a standard measure of dependence.

One of the first efforts to produce these kind of calculations was developed by Michael Dohan in two studies published in the second half of the 1970s 31. Both studies address themselves to the question of whether the rapid expansion of foreign trade relative to output has increased Soviet dependence on foreign trade and in particular which sectors have been more exposed. The first study covers the period 1913-70, the second extends the analysis up to 1977.

The author produced a set of aggregate measures of trade specialization (trade/GNP ratio), but attempted also

---

31. Dohan (1976a) and (1979).

to relate the structure of exports and imports to changes in the domestic economy. Claiming that the conventional measure of export specialization and import consumption gives erroneous results, unless simultaneous exports and imports for the same commodity are taken into account, Dohan elaborates "extended ratios", which, in the case of exports include net direct exports plus some portion of other exports for which this product is a major input 32. Extended trade specialization ratios are calculated for several major exports and imports, semi-processed materials, agricultural products, machinery, consumer goods and foodstuffs.

Analysing his aggregate measure of trade participation, Dohan suggests that a normalization of the role of foreign trade in the Soviet economy since WW II has taken place. However, in both studies the author concluded that the increasingly large role played by foreign trade has not significantly increased the dependence of the Soviet economy on the outside world; "where specialization has occurred, it has not necessarily increased vulnerability to pressure from the West. Often, the observed trade specialization has been in trade with Eastern Europe, which presumably poses less political risk than trade with the West" 33.

The completely opposite conclusion is made by Vladimir Treml. In a study done for the U S Department of Commerce in collaboration with Barry Kostinsky, he worked out a set of

---

32. A more general assessment of the role played by re-export trade in CPEs and of the distorting effects that these introduce into trade-to-national-income ratios and elasticities, can be found in Marer (1978), esp. p.410.

33. Dohan (1979), p.368.

estimates for the domestic value of Soviet foreign trade 34, which were further elaborated in subsequent papers 35. The fact that these data are often quoted as conclusive evidence of the increasing dependence of the Soviet economy on foreign trade means that a closer scrutiny of the figures and procedures of estimation is required 36.

Treml starts from the assumption that any attempt to measure Soviet trade participation as the ratio of trade flows measured in foreign trade roubles and NMP measured in domestic prices is meaningless, given the completely different structure of Soviet domestic and foreign trade prices 37. In the process of reconstructing the 1972 Input-Output table for the Soviet economy, Treml estimates vectors of exports and imports in domestic prices for the period 1955-78, as well as trade participation ratios, later extended to include 1980. His findings are summarized in table 1.

The table gives Soviet imports and exports measured in foreign trade prices (columns 2 and 5), domestic prices (columns 3 and 6) and trade, measured in domestic prices, as percentage of Net Material Product (NMP). In the 25 years examined, Soviet trade participation increased

---

34. Treml (1980) and Treml-Kostinsky (1982).

35. Treml (1982) and (1983b).

36. Treml's figures have been commented on also by Soviet scholars. For instance, see Ognev (1986), p.21.

37. These ratios, calculated according to official data reported in Narodnoe khozyaistvo SSSR are:

	Export	Import
1975	6.6	7.3
1980	10.7	9.6

substantially. The improvement is considerable in the case of imports, constituting slightly more than 5% of NMP in 1955 and nearly one fifth of NMP in 1980. Treml also indicates that the overall trade participation ratios (X+M/NMP) in established prices increased from 12.3% in 1960 to 14.9% in 1970 to nearly 27% in 1980. This led the author to conclude that the Soviet Union changed "from a position of an almost totally closed economy with a minimal exposure to world markets to a relatively open one with a high degree of dependence on foreign trade" 38. Treml's estimates place the Soviet Union among the major trading nations: the Soviet import rate is lower than those of many EEC or Northern European countries, generally classified as open economies, but higher than those of the USA (8%) or even Japan (12%).

The results are arrived at through a complex procedure of estimation. Assumptions and interpretations vary for exports and imports and it is necessary to describe them separately. In the case of exports, the most accurate estimates are considered those derived from input-output tables, available for 1959 (original Soviet source), 1966 and 1972 (Western reconstruction). The estimates for 1955, 1970 and 1975 are based on the share of export in national income as given by Soviet sources. The estimates of exports in domestic values for these benchmark years are then used to create the time series. The estimates for the remaining years are made on the basis of the price indices, the structure of foreign trade flows and other data, based on a price-adjusted conversion coefficient c defined as:

---

38. Treml (1983b), p.36, emphasis added.

$$C_t = C_o \frac{I^t_d}{I^t_f}$$

where I^t is the price index for the year t_o and f refers to foreign trade prices and d to domestic prices 39. An accurate description of the so-called pricing-out methodology used for the estimates in 1972 provides further clarification on the strengths and weaknesses of these figures 40. The repricing takes place on a commodity-by-commodity basis. Whenever this is possible the domestic value of each sector is calculated as the sum of all goods repriced in domestic values. A sampling procedure is followed if data are not available. Export conversion coefficients are calculated on the basis of a sample of products and then applied to the export value in foreign trade prices. Domestic prices are taken from price handbooks, other collections of prices and by searching through Soviet literature. A noticeable degree of discretion appears in the estimates of the MBMW sector, where the author declares that he has been unable to trace back prices for around two million items, out of a total of 2,7 million. He himself recognizes that it is virtually impossible to give an accurate estimate of the domestic value of export for the MBMW sector, either by pricing-out or any other

---

39. Cf. Treml-Kostinsky (1982), pp.69-71.

40. Ibid., p.37-52.

methodology 41. This is not a minor shortcoming, if one takes into account the fact that machinery and equipment exports accounted for over one third of total Soviet exports in 1972.

As in the case of exports, import estimates are derived in various ways: from input-output tables, reelaboration of Soviet sources and educated guesses. The calculation is complicated by the absence of a domestic price index for imports in 1976 and 1978. The estimation of import vectors in the 1972 input-output table also suffers from lack of data 42. The pricing-out methodology used to revalue exports cannot be applied to imports since it is impossible to obtain appropriate domestic prices. Values are obtained as the difference between Gross Value of Output (i.e. current domestic production - data available from Soviet statistics) and total supply (GVO + imports) obtained for most industries from input-output tables.

Treml's work has been criticized by Jan Vanous for the methodology used 43. Vanous maintains that an index based on Soviet domestic prices, which are generally known to be seriously distorted and arbitrary, cannot provide information about Soviet dependence on foreign trade. As an alternative measure he proposed the ratio of imports and

---

41. The overall coefficient for the sector is derived as the average of analogous coefficients calculated for the 1966 input-output table.

42. Cf. Treml-Kostinsky (1982) pp.72-3 and pp. 53-64.

43. See US Senate (1982), pp.87-89. A similar position is expressed also by Hewett, who does not attempt to measure trade participation ratios. Cf. Hewett (1983), pp.274-5.

exports measured at comparable world market prices (WMPs), to income measured at identical WMPs. Since WMPs are scarcity prices, they are indicative of the opportunity costs of the various commodities on a worldwide scale and should avoid the biases caused by the distortions of the Soviet price system. The procedure for re-pricing trade flows in terms of WMPs does not present, according to Vanous, particular problems. Trade with the western industrialized and with less developed countries is conducted in general at WMPs: the dollar value of these flows can be obtained directly by converting rouble trade statistics into dollars at the official exchange rate. Soviet trade with members of CMEA has to be adjusted to take into account the different pricing methodology prevailing under the socialist "market". This is done by applying derived dollar/foreign trade rouble exchange rates, which take account of the difference in world market and intra-CMEA price levels for particular commodity categories. The main problem is the absence of an estimate of Soviet GNP at WMPs. Vanous suggests using the CIA estimates of Soviet GNP in which GNP components are re-evaluated in dollars in accordance with the relationship between the United States and the Soviet sectoral price levels.

In table 2 the results obtained by Vanous for 1980 are compared with those obtained by Treml for the same year. The data show a dramatic difference in the share of imports as percentage of GNP, depending on the methodology used for the calculation. Vanous suggests that "the major discrepancy between the Treml-Kostinsky results and our results of the

calculation of Soviet import dependence can be attributed to the distorted relative price structure within the Soviet economy", and argues that the only conclusion that can be derived from the Treml-Kostinsky study "is that it shows how seriously distorted and irrational the domestic Soviet relative price structure is. The study does not provide good information on the dependence of the Soviet economy on foreign trade" 44.

In a rejoinder to these criticisms, Treml objects that Vanous's calculations generate some form of hybrid ratio: Soviet trade at WMPs divided by Soviet GNP at prices prevailing in the USA. Even though US domestic prices for goods traded internationally are close to WMPs, a large subset of US goods and services is not traded outside the USA and the price of the subset do not reflect worldwide market prices 45. Furthermore Treml claims that estimates made using dollars or WMPs are affected by the index number problem 46.

Abraham Becker draws attention to what appears to be the real weakness of Treml's estimates, i.e. the fact that they are interpreted in terms of trade dependence 47. Treml seems to consider these estimates as an indicator of Soviet trade dependence and as conclusive evidence of increased

---

44. US Senate (1982), p.88.

45. US Senate (1982), p.82-3.

46. ".. as long as prices and quantities are inversely related, comparisons of national aggregates (GNP,NMP) of two different countries will vary depending on whether prices of one or the other country were used". Treml (1983b), p.43.

47. Becker (1984), p.25.

Soviet vulnerability during the 1970s. Even though Treml himself recognizes that there is no one-to-one correspondence between the rise in trade participation rates and the vulnerability of the Soviet economy to external forces, he argues that Soviet foreign trade has in any case increased its susceptibility to economic sanctions 48. Furthermore, the large amount of trade that the Soviet Union conducts with CMEA countries, far from mitigating Soviet dependence, may reinforce it, due to secondary dependence, i.e. dependence on imports from CMEA countries which in turn are dependent on imports from the West. However, he does not attempt to quantify secondary dependence or even to take into account the possible effects of different partnership.

Treml's estimates remain the most comprehensive attempt to measure Soviet trade participation. Several studies, particularly those concerning leverage and embargo, reviewed in the next section, quote these results as evidence of increased Soviet foreign trade dependence.

3.2. Leverage as a policy instrument.

In the last few years a number of studies have appeared on the issue of trade denial and economic leverage on the Soviet Union. The debate has centered upon which economic policy Western nations should adopt towards the Soviet Union (and the Socialist countries more generally) and it has

---

48. Cf. US Senate (1982), p.81.

concerned in particular the advisability and effectiveness of economic instruments as a way of influencing Soviet political and military behaviour. Being mainly a policy-oriented debate, political considerations were often more important than economic ones; most of the contributions are of a speculative nature and only in very few cases has an attempt been made to substantiate the arguments with empirical evidence or counterfactuals. It would be an impossible task to review all the literature on the topic; this review is therefore limited to a few contributions and makes no claim to be exhaustive.

The concept of denial - a strategy aimed at impeding improvements or economic growth for the whole economy, or specific sectors, usually the military - and leverage - a strategy aimed at leadership behaviour, directed either at impeding or promoting growth and welfare - are extensively reviewed by Becker 49. He points out very clearly that the capacity to carry out strategies of denial and leverage depends above all on the susceptibility of the Soviet economic system to such pressure. It would seem obvious that strategies aimed at influencing Soviet behaviour should require the USSR to be responsive to external economic pressure. However, the main area of controversy is the assessment of the extent of Soviet vulnerability to reduction in the volume of trade. In most studies this argument is not addressed directly, presumably because of

---

49. Becker (1984), pp.8-20. A companion paper to Becker's, by J.C.Fernandez, attempts to develop a theoretical model of the actual working of leverage. Cf. Fernandez (1984).

its complexity.

A noticeable exception is the work of Brandsma and Hallet 50, who maintain that an optimal sanction can be derived from a strategy which solves a dynamic mathematical game, subject to uncertainty. Utilizing the SOVMOD I econometric model of the Soviet economy for the empirical estimates, the authors arrive at the conclusion that the West exerts little influence on the preferred growth path of the Soviet economy, but can exert considerable pressure on the trade deficit (and consequently on foreign exchange reserves) so as to threaten future economic development. Brandsma and Hallet explain that grain trade cannot play an effective leverage role, but that more structural damage can be caused to the Soviet Union by curtailing Western exports of machinery and equipment and by a boycott of Soviet exports. They conclude that Soviet vulnerability to induced foreign exchange shortages makes the threat of a future boycott of Soviet exports a powerful instrument of leverage 51.

Similar conclusions, even though not supported by empirical evidence, are drawn by E. Frost and A. Stent 52. They observe that the USSR is particularly vulnerable to fluctuations in commodity market prices, and that Western high-performance equipment plays a fundamental role in certain sectors of the Soviet economy, particularly energy

---

50. Brandsma-Hallet (1984a) and (1984b).

51. A similar position is expressed by H.S.Levine. Cf. US Senate (1982), p.90.

52. Cf. Frost-Stent (1984) and Stent (1984).

and agriculture. Frost and Stent affirm that Western sanctions impose costs on the USSR in any case, even though these costs do not appear sufficient to force a reduction in Soviet military expenditures. They recognize, however, that economic sanctions may also impose a cost and cause considerable political damage in the West 53.

The question of which kind of results brought about by the restrictive measures on trade adopted by the Carter and Reagan Administrations 54 is heatedly debated. In a report prepared for the Trilateral Commission 55 it is argued that sanctions have had a very limited effect. The punitive

---

53. Frost-Stent (1984), p.193.

54. The most important measures are (in chronological order):
- October 1972: introduction of Jackson-Vanek amendments prohibiting extension of Most-Favoured-Nation status to CPEs;
- July 1978: Department of Commerce is given veto power on all oil-technology exports, which will require validated licenses on case-by-case basis;
- January 1980: President Carter announces sanctions against the USSR for the invasion of Afghanistan. He stops licenses of high-technology, strategic goods; embargoes grain exports; curtails USSR fishing rights; etc. As part of sanctions Dept. of Commerce suspends all validated licenses and new applications for sale of oil, gas field technology and goods to USSR pending review;
- April 1981: R. Reagan lifts Carter grain embargo and restrictions on all agricultural commodities;
- December 1981: R. Reagan announces sanctions against Poland, later extended to the USSR;
- March 1983: President Reagan approves National Security Directive 75, which sets policy of rising economic pressure to limit resources, foreign policy and military options open to the Soviet Union;
- July 1984: CoCom members agree to extend restrictions on large computers, some type of software and sophisticated telecommunication equipment.
Cf. Hufbauer-Schott (1985).

55. Roosa et al. (1982).

effect on the receiving country has been slight, while the disruptive effects on the imposing countries substantial: "Soviet autarky is sufficiently powerful to thwart any attempt to force a collapse of the Soviet system through economic sanctions" 56. Many authors attribute the failure of embargo policies to the lack of cohesiveness and coordination among Western nations 57. In particular it is argued that, since trade with Eastern Europe plays a marginal role for the American economy, the USA has been able to apply embargoes and sanctions at a relatively low cost, while Western Europe, which has benefited more from the détente period, is more inclined to preserve "normal" commercial relations 58.

Viceversa, Kellman 59 finds that the early 1980s were a period of close and effective coordination and cooperation among Western allies. His conclusion is based on the computation of "export similarity indices" for the major OECD countries, which indicate that the European countries and Japan were not "filling the gap" created by the US embargo, and were not selling to the Soviet Union commodities under the unilateral control of the USA 60.

---

56. Ibid., p.7.

57. Among others: Jacobsen-Rode (1985), Hanson (1983), Ghoshal (1983).

58. For instance, Jacobsen-Rode (1985), pp.297-8.

59. Kellman (1985).

60. It must be stressed, however, that Kellman's calculations can be interpreted in various ways. For instance, they can be used as evidence of increased competition on the Soviet market for similar high-technology products or as a reflection of variations in the weight of items

An extensive analysis of the world-wide trade and welfare effects of the 1980 US grain embargo on the Soviet Union is developed by Lundborg 61. His analysis is based on a global general equilibrium model and deals only marginally with the consequences within the Soviet Union, but presents a penetrating analysis of the consequences for countries other than the US and the USSR. The author claims that the embargo cannot be judged a failure, despite the poor support given by other exporters to the USA. The analysis confirms the intuitive impression that Argentina was the country which gained most from the embargo, while major grain-importing countries, like Japan, were not affected to any great extent.

Any discussion of Soviet vulnerability cannot ignore the question of the technology transfer. In the context of the points discussed in the present section, two questions are particularly relevant:

i) the way in which technology is acquired by the Soviet Union and the extent (volume) of this acquisition;

ii) the impact of the acquired technology on the domestic economy, i.e. its contribution to Soviet economic growth in general and to the defence sector in particular.

An enormous amount of books and papers has dealt extensively with these issues: Morris Bornstein has recently reviewed the literature analysing Soviet interests in

---

included into the sample.

61. Lundborg (1987).

Western technology and modes of technology transfer 62. Alec Nove and Stanislaw Gomulka have extensively surveyed the debate on the contribution of Western technology to Eastern economic growth 63.

The same can be said for the analysis of control of technology transfer. The main argument has been summarized by Bertsch 64, who notes that there is unanimous support for the need to control military-related technology and equipment, but that in the meantime an excessively restrictive system may also discourage non-strategic trade, from which the West may also benefit. In several works Bertsch 65 drew attention to the need to update and improve the unilateral control system, to strengthen the role of CoCom 66 and to define as precisely as possible what military critical technologies are.

A final problem that needs to be mentioned is the question of Western dependence on and vulnerability to the Soviet Union. The issue has been tackled from at least two points of view: the dependence of Western industries or sectors on Soviet demand and the dependence on Soviet deliveries of energy and raw materials, especially gas. On

---

62. Bornstein (1985).

63. Nove-Gomulka (1984). This book contains also an essay by George Holliday on sectoral case-studies.

64. Bertsch (1983).

65. Bertsch et al. (1981), Bertsch (1983), (1986), Bertsch-McIntyre (1983).

66. For a review of the historical development of unilateral export controls and CoCom, cf. Schiavone (1986).

the first issue there seems to be a certain consensus on the low level of dependence of Western economies. In the European industries, which are the most exposed to this phenomenon, only a small fraction of the labour force is directly or indirectly dependent upon export to the USSR (92,000 jobs in the FRG in 1979, i.e. about 0.9% of West Germany's workforce) 67. Analogous results are reached by analysts working on the US feed/livestock sector 68.

The Urengoi gas pipeline deal was one of the most debated issues in East-West trade at the beginning of the 1980s. The hypothesis was advanced, particularly in the USA, that selling gas to Western Europe would enable the USSR to earn hard-currency to buy the technology and equipment necessary to strengthen its military potential. In the meantime a rising share of West European demand for energy could have been met by Western sources. Several studies (and the subsequent evolution of commercial relations between the USSR and Western Europe) have demonstrated that such fears were misplaced 69. Soviet gas can be considered a useful way to diversify sources of supply and thus to reduce dependence on OPEC oil; dependence has remained substantially low and the Soviet Union has become at least as dependent as Western Europe on the hard-currency earned through these sales.

---

67. These figures are reported by Bethkenhagen (1985b), p.25.

68. Offutt-Blandford (1984).

69. An extensive review of the pipeline negotiations, Soviet energy policy, Western position on these issues, etc. can be found in two Rand publications: Van Oudenaren (1984) and Gustafson (1985).

Furthermore, the amount of gas actually delivered to Western European countries has remained below the level negotiated, provoking in some cases complaints from Soviet authorities 70.

3.3. The Soviet perception of the problem.

Dependence is a long- standing issue in Soviet history. Since the birth of the Soviet state, the Soviet leadership has attempted to minimize damages deriving from a hostile external environment.

In a book significantly entitled "The struggle for economic independence of the USSR", V.I. Kas'yanenko describes the political and ideological basis of the Soviet autarkic model of development 71. The book covers the period 1917-1940 and describes the attempts to develop a "material-technical base, which at the same time would assure the achievement of a socio-political and economic transformation and would provide a guarantee against all types of unexpected and hostile external actions" 72.

Certainly, the strategy of development chosen was not based on an extensive reliance upon foreign trade, but some

---

70. Contracts generally allow for some flexibility in the quantities delivered. Particularly in 1982 and 1983, according to Bethkenhagen, western buyers reduced quantities purchased because of a decrease in demand. Cf. Bethkenhagen (1985), p.181.

71. Kas'yanenko (1972).

72. Ibid., p. 4.

kind of "strategic" imports, such as raw materials and equipment, were judged necessary for speeding up the process of industrialization, while in the meantime goods imported (especially capital goods) should contribute to the cause of economic self-sufficiency.

Bukharin in his Notes of an Economist summarizes quite clearly the strategy of the Soviet leadership: "We should assume as a basis our agriculture, utilizing its products to pay for equipment imports (...), developing all heavy industry, so as to gradually free ourselves from foreign dependence on industrial equipment, becoming more and more self-sufficient" 73.

Apparently, however, at that time the Soviet leadership was aware of the massive problems in expanding exports necessary to pay for the extensive imports of capital goods from industrial countries and, as Trotsky already recognized in 1925, of the rising interdependence between the Soviet drive for industrialization, trade with capitalist countries and the international economic situation. In an article in Pravda in September 1925, Trotsky wrote: "a commercial and industrial depression in Europe, and still more a world depression, might lead to a wave of depression in our country. Conversely, a commercial and industrial boom in Europe would at once be followed by a demand for essential raw materials for industrial purposes (...) and for grain ..." 74.

---

73. Bukharin (1928), p.12. Emphasis added.

74. Quoted in Carr (1958), p.453.

More recently, the Brezhnev leadership, under which the dramatic increase in external trade took place, did not show such awareness. Secretary Brezhnev at the XXV Party Congress in February 1976 declared that "as other Governments we try to take advantage of commercial relations with foreign countries ... in order to fulfill economic targets, to gain time, to increase efficiency of production and accelerate the progress of science and technology" 75. However, when the limits of an import-led-growth strategy became clear Secretary Brezhnev turned back to a more inward-looking attitude: "we must ask ourselves why very often we lose our lead, we spend enormous amount of money for buying abroad machinery and technology which we would be able to produce ourselves" 76.

In recent years the debate has focussed around three issues:

(i) the recognition of increased interdependence of the world economy;

(ii) the question of "artificial restrictions" on economic relations between East and West;

(iii) the consequences of increasing Western protectionism.

The foreign economic strategy for the 1980s emerges quite clearly from N. Ryzhkov's speech at the XXVII Party Congress in March 1986 77. The role of foreign trade will

---

75. Pravda, 25.2.1976, p.3.

76. Opening speech to the XXVI Party Congress. Pravda, 24.2.1981, p.5.

77. Ekonomicheskaya Gazeta, n.11, 1986, pp.23-30.

expand, but closer collaboration has to sought for with socialist countries. Actually the expansion of "economic ties between fraternal countries will speed up the process of intensification ... and will make us economically and technically more invulnerable in face of imperialist action" 78. Potentialities are also seen in co-operation with capitalist countries, but "co-operation has to be two-way. Mutual interest must be considered and all restrictions, boycotts and embargoes orchestrated by the USA must be completely renounced. ... Economic relations can only be based on equal rights, trust and strict observance of mutual agreements" 79.

At the 43rd session of CMEA in Moscow in October 1987 Ryzhkov pointed out that "CMEA countries, being part of the world economy, feel the consequence of the negative processes taking place in the world capitalist market. The structural changes in the economies of capitalist countries ..... lead to the revival of protectionist tendencies in world trade, to the intensification of policy of discrimination and economic sanctions" 80.

In his report at the CPSU Central Committee plenum in June 1987 81, Gorbachev emphasized even more strongly the concept of the growing interdependence of the Soviet economy. "In the modern world no state can regard itself as

---

78. Ibid., p.28. Emphasis added.

79. Ibid., p.29.

80. BBC Summary of World Broadcasts EE/8699, 15.10.87, p.5.

81. Ekonomicheskaya Gazeta, n.28, 1987, pp.4-12.

economically isolated from others. Our country is no exception in this regard. The Soviet economy is part of the world economy. International trade, currency and financial relations between countries and the latest scientific and technological transformations inevitably also affect the state of the affairs in our own economy" 82.

This kind of argument has also been debated at the academic level. The main argument developed by Soviet scholars is that the acquisition of Western technology is not vital for the economic development of the country. In addition, a number of articles and books have recently attempted to show that technology transfer is not one-way, but that an increasing number of licences and patents have been bought by Western countries, including the USA and Japan, from socialist countries 83. However, it is sometimes recognized that policies of embargoes and sanctions imposed by western countries have excluded the Soviet Union and the other socialist countries from useful sources of technology, particularly in the sector of modern computer hardware and telecommunications 84.

East-West economic relations are analysed in a recent book by A.P.Ognev, who revises recent developments in Soviet

---

82. Ibid., p.10.

83. Cf. for instance Bykov (1984); Afanas'ev (1986); Bogomolov-Bykov (1986) . According to Ognev (1986), p.23, around 35-40% of Soviet license, patents and technological documentation is exported in 40 countries, included 20 capitalist countries.

84. Cf. Bogomolov-Bykov (1986), p.156.

trade with Western countries 85. Particularly in chapter 1, "The political factor in East-West economic relations", the author deals extensively with sanctions, embargoes and other obstacles to trade against the Soviet Union. He rejects the hypothesis that the Soviet economy has suffered from sanctions and embargo policies adopted by the United States and claims that in several cases, as for example, the grain embargo in 1980, American farmers have suffered losses 86.

On the whole, the arguments advanced in the Soviet literature are not very different from those of western scholars. The overall impression is that both at an official level and among economists there is increasing recognition of the positive role that trade may play in the Soviet economy. However, there is no clear intention to get too deeply involved and to exploit fully all the advantages of closer co-operation with foreign partners, especially western industrialized countries.

---

85. Cf. Ognev (1986).

86. Ibid., p.18. The differences of behaviour of the various western States with reference to the grain and gas-equipment embargoes of the 1980s are discussed and stressed by K.V.Voronov, in Shenaev-Andreev (1986).

PART II. SOVIET TRADE IN THE 1970S: AN INCREASE OF DEPENDENCE ?

4. THE EXPANSION OF SOVIET TRADE AND FINANCIAL RELATIONS IN THE 1970S.

The aim of the present chapter is to discuss the overall trends in quantities, prices, trade by major trade partners and commodity groups for the period 1960-1985. The chapter is mainly devoted to discussion of two related topics:

i) the outstanding growth of trade at current prices is a "passive" event, poorly reflected by data in volume terms 87; it follows that the shift towards Western industrialized countries in the 1970s is less remarkable if real variations, instead of nominal are taken into account;

ii) the impact of real variations in trade flows for the domestic economy on the whole are marginal, even though some sectors show evidence of increased dependence over the period.

This chapter is devoted to the discussion of the two issues which are directly linked to our definition of dependence: the former represents an approximation of the likelihood of the event, the latter of the extent of the damage, both essential components of trade dependence. The next section analyses the dimensions of the "opening-up" process; a general evaluation is presented for the period

---

87. The methodology for deriving value and volume indices and the sources utilized are discussed in Appendix A.

1960-85. The second section re-considers the trade partner shifts. The final section discusses the interaction between domestic and foreign trade variables at sectoral level.

The analysis relies on three kinds of sources: i) Soviet official statistics; ii) a comprehensive set of data recently made available by the United Nations; iii) Western estimates. As is well known, Soviet official figures are affected by problems of availability, consistency and interpretation; however, foreign trade data seem less affected than other sectors . A considerable amount of data is published in the statistical yearbook Vneshnyaya Torgovlya SSSR statisticheskii obzor (hereafter VTSSSR), which reports volume and values data for many commodities, and details are often available from other publications. However, some areas are covered very poorly, if at all: Soviet data on foreign transactions other than merchandise remain unpublished and the assessment of the Soviet Balance of Payments has to be based on Western estimates. Finally, at the end of the 1970s an element of hard-currency settlement has emerged also in intra-CMEA trade (around 10-15% of total). I have therefore preferred, whenever possible, to use Soviet official data, which, in my view, are still preferable to Western trade partner reports and Western estimates, since coverage is more comprehensive and the data set much more uniform . For most of the

---

88. A detailed analysis of the problem concerning Soviet statistics can be found in Treml-Hardt (1972).

89. On this points cf. also Marer (1978), esp. p.430.

calculation involving volume aggregates, I have used data recently published by the United Nations . This is a comprehensive set of data on Soviet bilateral trade flows since 1970, largely based on Soviet and East European trade data, reported in value and volume terms, disaggregated by commodity and partner country. Finally, especially for the reconstruction of the invisible part of trade I have utilized Western estimates, both of international organizations and independent scholars.

4.1. The dimension of "opening up".

The growth of Soviet imports and exports in the period 1960-85 is impressive: the value of Soviet total imports grew from 5,065 million transferable rouble in 1960 to 10,565 in 1970 to 69,101 in 1985, while exports grew more than six times over the same years (Cf. graph 1).

In value terms, aggregate imports and exports grew at a similar pace, with a slight tendency for the growth of imports to exceed the growth of exports towards the end of the decade. Table 3 summarizes the average annual growth rates of total Soviet trade since 1961. The growth is at first gradual (1961-70), then strongly accelerating in the quinquennia 1971-75 (with imports and exports growing at rates of 18.9% and 14.1% respectively) and 1976-80 (9.1% and 12.1%). During the last five years considered, 1981-85, a

---

90 UN-ECE (1984), (1985).

sharp deceleration emerges, with growth rates of both imports and exports at above 5%. More specifically, in the early 1960s imports and exports grew at an average annual growth rate of 5% and 7% respectively; the trend was reversed after 1968 and during the following ten years import growth was slightly higher than export growth. The growth of imports reached its peak in the years 1972-75, with the record value of 42% in 1975. The decline of growth rates for both imports and exports has been pronounced since 1982, with an absolute fall, -2.6% with respect to the previous year in 1985.

However, the level of Soviet participation in international trade remained extremely low by international standards. The share of the USSR in world imports and exports, as illustrated by table 4, has fluctuated around 4%, remaining substantially below the corresponding shares of countries of the same size and/or level of development 91. Furthermore, as will become clearer later, Soviet trade remained concentrated to an unusual degree on merchandise.

It is worth stressing, however, that aggregate data in value terms are misleading in two respects. The price changes in the world economy during the 1970s have inflated the figures and have affected in different ways the evaluation of trade flows with socialist countries and trade with the West mainly due to the different price criteria and the different trade composition governing socialist and non-socialist trade. It is therefore useful to draw a

---

91. In the same years the USA accounted for nearly 12% of world exports, the FRG 9%, Japan 7%, the U.K. 5%.

distinction between prices and quantity indicators and, whenever this is possible, to develop comparisons in terms of quantities. Even in this case, results should be interpreted with caution.

The striking difference between value and volume figures emerges very clearly from graphs 2 and 3, where the two different data sets are compared for both exports and imports: volume data, as highlighted by the graphs, have a steadier trend than aggregates at current prices. Table 5 summarizes changes in volume of total exports and imports since 1960. Different trends characterize imports and exports and actually a real process of "opening up" can be said to have occurred, if at all, only in the import side. The volume of exports doubled from 1960 to 1970 and again from 1970 to 1984. Imports were more dynamic: their volume increased nearly three times from 1970 to 1984.

Any attempt to assess the increasing role of trade in the domestic economy must also take the relationship between domestic variables and trade into consideration. The increase of foreign trade activity did not coincide with a period in improvement of the overall economic performance of the USSR. The increase is, on the contrary, accompanied by a reduction in the growth rate of the economy. The Net Material Product (NMP) grew at an average annual rate of 6.5% from 1960 to 1970, but only at circa 4% in the following decade. Planned and realized values of NMP and total trade turnover are reported in table 6. Net Material Product shows a marked decline both in planned and realized values. Medium-term elasticities, calculated in columns 3

and 4, taking into account aggregates at constant prices 92, proved to be lower than anticipated for the period 1966-1975 and higher for the following decade. The higher value of ex-post with respect to ex-ante elasticities in the FYP 1976-80 and 1981-85 cannot be explained in terms of the growing importance of trade for the domestic economy, i.e. an unplanned growth of trade to fill in gaps and shortcomings at domestic level. It appears to be rather the result of a substantial reduction of NMP growth targets, which, despite their reduction, remained slightly unfulfilled.

The annual growth of imports and exports, the least square trend rates and the elasticities with respect to over-all economic growth are reported in table 7 for the period 1970-84. As expected, import and export growth is faster than NMP growth, reflecting the growing importance of trade in the Soviet economy. These data confirm the intuitive impression that imports were more elastic than exports and in fact, the long-term elasticity of imports is higher than the corresponding value for exports. It would be erroneous, however, to take this result as evidence of increased Soviet dependence, since aggregate data do not take into account the evolution by area of Soviet trade; it is therefore essential to expand the analysis to include the different behaviour of trade groups and commodities. A cross-reference to data concerning commodity composition, origin and destination of imports and exports may indicate which sectors rely more on foreign sources and consequently

---

92. A calculation in terms of current prices is influenced to a different extent by the price variations taking place in different areas.

are more vulnerable to possible interruptions of foreign supply, i.e. more dependent on trade.

4.2. Partnership: Soviet-Eastern versus Soviet-Western trade.

One of the arguments often advanced in literature is that, as a result of various factors, the Soviet Union in the 1970s saw a dramatic shift in the geographical direction of its trade, towards Western Industrialized countries, with a substantial increase of dependence on western sources of imports and western markets for the exports of its energy products 93. This section is devoted to a qualification of this conventional view: my hypothesis is that the long-term trend, as measured in quantity terms, is much more linear than previously assessed, with a slight increase in quantity exports of energy products paying for an increase in manufactures and foodstuff, particularly in hard-currency trade.

a. Trends.

Table 8 summarizes changes in volume of exports to and imports from the main regions. Data subdivided by regions are available only since 1963 for the aggregates "Socialist countries", "CMEA countries" and "Non-socialist countries"

---

93. On this point cf. for instance Hewett (1983), p.274; Hanson (1983), p.66.

(i.e. developed and less developed countries not included in the other categories). Separate data for "Capitalist industrialized countries" and "Developing countries" have been published only once, in the Jubilee issue of the foreign trade handbook in 1982 94. The data, reconstructed according to the methodology explained in Appendix A, allow more precise analyses of the overall development of Soviet trade.

Trade with the different areas presents peculiar characteristics. The export quantity index for the socialist countries shows an extremely random pattern: boom expansions, such as in 1966, 1968, 1970 and 1974, are followed by period of decline, even in absolute terms, as in 1972. The turning point seems to be 1975, when exports to socialist countries start to decline almost constantly, reflecting the necessity to pay off hard currency debt and the transfer of resources to CMEA joint investment programs. The pattern of volume exports to the CMEA countries do not differ, as expected, to that of the socialist countries, constituting nearly 90% of the aggregate. There are however two years, 1972 and 1982, when the indices for the two aggregates move in completely opposite directions.

The faster growing area is that of non-socialist countries: the import index more than trebled and the export index doubled. The growth rate of export towards Developed and Less Developed countries in real terms is greater than

---

94. Vnesnyaya Torgovlya SSSR - Statisticheskii sbornik, Moscow, Finansyi i statistika, 1982.

the growth rate to the socialist community. However, it is interesting to note that during the very late 1970s and the first half of the 1980s first a stagnation and then an absolute decline of imports from Western countries took place, while imports from CMEA and more generally from the socialist area continued to grow. Unfortunately the lack of a complete set of data disaggregated for Developed countries and Less Developed countries is a major obstacle for the proper evaluation of data reported in the table. The data available for the period 1975-81 indicate completely opposite trends for imports and exports. While exports towards western industrialized countries have declined constantly, exports to developing countries have grown significantly; the opposite is true for imports.

The analysis of the geographical distribution of trade presented in table 9 confirm that the period of major opening to foreign trade coincides with greater exchange with the Western industrialized countries. During the period 1968-78 imports in value terms from the developed countries increased annually at an average rate of 17%, that is circa 3% more than the average for total imports. Imports and exports from socialist countries increased substantially, but remained below the average growth rate. It follows that the share of imports from the region fell from 71% in 1960 to 65% in 1970 and to 52% in 1975. The share of exports also fell, but at a slower rate: 65% in 1970, 61% in 1975, 60% in 1978. The decline is counterbalanced by the increasing volume of exchange with Western industrialized countries, whose share in total Soviet exports rose from 18% in 1960 to

more than 30% in 1980. The increase is even more noticeable for imports: from less than 20% in the 1960s to more than 30% at the end of the 1970s.

A reconstruction of trade share in constant prices is also attempted for 1970-80 (Cf.table 9). The findings contradict trends indicated by value data. The share of Developed countries in Soviet exports, nearly doubling in current prices, actually declines in real terms; the opposite happens for the Less developed countries whose share in the decade declines from 16% to 14% in current prices, but increases from 16% to more than 17% if measured at constant prices, while imports from CMEA countries present surprisingly similar trends in current and constant prices.

Looking at the commodity composition of trade, the Soviet Union turns out to be a net importer of machinery and highly processed goods, and a net exporter of primary and semi-processed products. Table 10, where the commodity composition of Soviet imports and exports is reported for selected years since 1913, suggest a marked transition from an agricultural exporter to an agricultural importer, an increasing specialization in energy products and a growing share of consumer goods amongst imports. The huge increase in the value of energy exports, the share of "Fuels" in total exports measured in current prices increased from 3% in 1950 to more than 50% in the early 1980s, and led to a downward readjustment of the other categories: the exports of machinery started to decline in 1975, as well as ores and metals; textiles, which constituted the main export item

after the revolution, have played only a marginal role since the second half of the 1950s. Important variations took place also inside the aggregate "Fuels and electricity": gas and electricity itself, which represented negligible amounts in 1950, have acquired increasing importance since 1970, but in 1980 64% of Soviet exports of fuel and energy were still represented by oil and oil products, 13% by gas, 4% by solid fuels and 1.5% by electricity 95. The two aggregates "Machinery and equipment" and "Foodstuffs" alone represented more than 50% of the total imports during the 1970s. The former includes for the most part machinery, equipment and means of transport for industry (circa 70%), but also machinery and equipment for agriculture (5%) and other means of transport (20%) 96. Of the foodstuffs and raw materials used for foodstuffs, grain rose from 5.2% of the total in 1950 to 31% in 1975 and 33% in 1981 97.

Data at constant prices are not published in the foreign trade handbook, but semi-official evidence has been produced by two articles in the journal Vneshnyaya Torgovlya 98. The picture that emerges from table 11 is once again in conflict with data presented in the previous tables. If measured in real terms, the share of fuels and electricity on total exports has remained substantially stable over the decade, while the share of machinery and equipment has

---

95. Torgovo-Promyshlennaya Palata SSSR Ekonomika i vneshne-ekonomicheskie svyazi SSSR, Moscow, 1983, pp.148-9.

96. Ibid. p.148.

97. Ibid., p.156.

98. Cf. Seltsovsky (1981) and (1982).

increased, particularly in 1970-75. Ores and metals have reduced their share from 20% in 1970 to 13% in 1980.

Table 12 and graph 4 show the trend of Net Barter Terms of Trade (NBTT) 99 over the period 1960-1984 disaggregated for main areas of trade. They show a deterioration of USSR NBTT during the 1960s. In particular data for the socialist countries indicate that the decline continued until 1972, while terms of trade vis-a-vis the non-socialist area began to improve in 1969. The improvement is generalized during the 1970s, and particularly accentuated, as expected, in the second half of the 1970s. This can be explained by the movement of world prices over the twenty years considered. They exerted a very strong influence, both directly and through the criteria for fixing prices on intra-CMEA trade. The 1960s were characterized by a remarkable degree of price stability: a moderate, but continuous rise in the prices of manufactured goods, which increased by 14% between 1963 and 1970, was accompanied by constancy of raw material prices. The commodity composition of Soviet imports and exports, illustrated above, accounts for the unfavourable trend. On average, during the 1960s "Manufactured consumer goods" and "Machinery and equipment" alone accounted for 50% of Soviet total imports, while "Fuels and electricity" and "Ores and metals" constitute 40% of exports. The structure of imports and exports moved in the direction of an even more marked "specialization" during the 1970s, while there was an opposite pattern in price movement. However, the

---

99. The criteria for the calculation of terms of trade, total and disaggregated by main trading areas are explained in Appendix A.

deterioration of the terms of trade and the following upwards spurt takes effect with several years of delay in intra-CMEA trade, thanks to the criteria for determining prices.

In the trade with non-socialist countries the effect of price variations is more straightforward. A key role in this area is played by the price of "energy" exports. In trade with Western industrialized countries, in which energy deliveries predominate, rouble export prices increased 5.7 times up to 1981, while import price rose only by 228%.

b. Intra-CMEA versus Soviet-Western trade.

The data reviewed in the previous pages challenge the traditional explanation of Soviet foreign trade behaviour during the 1970s and early 1980s. Two alternative interpretations have been advanced in the literature: (i) The great increase in trade relations with Western industrialized countries took place at the expense of growth in intra-CMEA trade and, consequently, of growth of CMEA integration 100. Accordingly, the adverse international political developments that characterized the late 1970s and the first half of the 1980s drove Soviet policy-makers away from the pursuit of increased trade with the West, towards more "secure" intra-CMEA economic relations.

---

100. See for instance: Holzman - Portes (1978); Korbonski (1976); Portes (1983).

(ii) Alternatively, a closer relationship between CMEA integration and increasing involvement in trade with Western countries may be supposed. It follows that the "retreat into isolation" that took place in the late 1970s, does not necessarily coincide with the development of intra-CMEA trade 101.

Both these kind of interpretive models need to be qualified in several respects. First the increasing involvement in foreign trade of the 1970s coincides with world market conditions exceptionally favourable to the Soviet Union, (i.e. the exogenous and accidental revaluation of its fuel (and raw materials) exports). An evaluation of the "opening up" process and of the following "retreat" should take into account the "normal" (low) level of trade that has characterized the Soviet economy so far. In this context one may suggest that it is the process of "opening up" that is exceptional, rather than the following return to a more "normal" level of trade 102. Second, the rapid development of Soviet foreign trade relations with Western industrialized countries has to be seen within the proclaimed change in the strategy of development, namely from mobilization of underutilized resources towards raising

---

101. This is a popular position among Eastern European economists. Cf. for instance Koves (1981), Csaba (1983), (1984).

102. It is, of course, debatable whether the "normal" level of trade is optimal for a country of the size and resource endowment of the Soviet Union.

the efficiency of inputs and the quality of output 103. International trade is affected because the alternative might have been perceived in the following terms: either efficiency gains deriving from increased involvement in trade, or more efficient management and internal utilization of existing resources, i.e. a radical reform of the command system. It is legitimate however to ask whether such efficiency gains from trade might be obtained without reforms. In this respect foreign trade has been considered an additional channel for promoting economic growth.

Various factors have exerted a strong influence upon the decision to get more involved in international exchange: a resource-saving drive, the prospects of reaping economies of scale, as well as the recognition of technological backwardness and the use of foreign trade as a channel for technology transfer. The contribution of Western technology to Soviet economic growth is an open issue, but recent

---

103. In Soviet and Western literature this is often referred to as the passage from an "extensive" to an "intensive" strategy of development. However, the distinction between "intensive" and "extensive" economic development is artificial. It is just a way to justify continuity between two economic systems, the old - already perfect, but in the need of further improvements - and the new, where policy-makers start to take care of the way in which resources are utilized. Viceversa, the efficiency in the utilization of the abundant resources has importance even in the "extensive" phase of development. For instance, since in the "classic model" resources for investment derive from a compression of the level of consumption of the population, a greater efficiency could have led to the same level of development, with a substantial improvement of the standard of living of the population. For a critique of this definition see A. Chilosi Rapporti economici est-ovest e riforme economiche Quaderni Feltrinelli, n. 7, 1984, pp.123-4.

experience has shown that import of Western technology by itself cannot solve the problem of efficiency at present affecting the Soviet economy. On the one hand systemic shortcomings (an inadequate management system, faulty prices, mistakes in decision-making, etc.), and difficulties in assimilation have largely undermined the potentialities of Western imported technology. On the other, the USSR, in comparison with other centrally planned economies, even at its peak of "openness", does not show a clear pattern of strong reliance on import-led growth, such as Poland or Hungary, for example. Its size, the natural endowment, the system of direction of the economy, the organization of foreign trade, etc., all contributed to the retention of a more autarkic view of development.

A further explanatory variable often used to explain the lower participation in international trade of centrally planned economies in the 1970s, is their inability to generate an adequate surplus of goods saleable for hard-currency. However this seems a problem that affects to a larger extent the small Eastern European countries than the Soviet Union. Given the commodity composition of its foreign trade, the Soviet Union benefitted greatly from the increase in the real prices of raw materials, which faced a fairly elastic international demand. A study by Olechowski and Yeats 104 reveals that even measures of protectionism affect the Soviet Union less than its Eastern European partners in third markets, since raw materials are harder goods than most other tradebles.

---

104. Olechowski-Yeats (1982).

The overall impression is that the strategy of "opening up" towards the world economy during the early 1970s has been developed parallel to renewed efforts to increase regional integration and at any rate despite it.

In the early 1980s, at the lowest peak of dètente, many commentators formulated a "turning inwards" hypothesis, that is the hypothesis of closer commercial relations between the Soviet Union and the other CMEA partners, as response to the growing difficulties of Est-West trade. The expansion of Eastern European exports was constrained by declining Western demand and the concomitant exacerbation of protectionism, as well as lack of competitiveness in Western markets by Eastern producers 105. It was subsequently necessary to substantially curtail imports from the West and to rely increasingly on intra-CMEA trade.

This interpretative view clearly presupposes a certain degree of substitutability of intra-CMEA trade for Soviet-Western trade. To assess to what extent such an interpretation responds to reality it is necessary to take into account several factors, not only pertaining to foreign trade. Intuitively the argument may be advanced that a certain degree of complementarity and not a completely mutually exclusive character, is the main feature of the

---

105. Phil Hanson suggests the latter as a main explanatory variable. His argument is based on the fact that "a really dynamic late-developing economy would have been able to push up its share of OECD imports substantially even amid the uncertain growth and the increasing protectionism of the 1970s: countries like Brazil, Singapore, Hong Kong and South Korea have done so". Hanson (1981a), p.97.

trade flows between the two areas. The two systems of trade are rather different in nature. Intra-CMEA trade is often limited to a redistribution of existing natural resources, while Soviet-Western trade is more dynamic, i.e. tending to affect - even though with substantial time lag - economic performance and the rate of growth. The increasing involvement in international trade of CMEA countries was promoted mainly for the inadequate development of their regional trade and in this respect the development of the last few years could have even worsened the situation. The share of demand that can be satisfied exclusively from internal sources has been declining: the difficulties of Soviet energy and raw materials production are clear examples of curtailment of intra-CMEA sources.

No serious attempts are registered that might alter significantly the institutional framework of intra-CMEA trade: the Soviet effort to increase the coordination of national plans has broken up against "nationalistic" barriers; bilateralism still remains the prevailing method of dealing even with specialization and cooperation agreements.

In three areas - technology, hard currency trade and pricing - trade with industrialized countries is suggested to have exerted some positive influence on the process of CMEA integration. Technological items have played a major role on both expansion and decline in the volume of East-West trade. As a way to increase technological performance, there are two alternatives to stable relations with Western markets: improvement of domestic innovation and closer

cooperation with other CMEA countries. One of the reasons behind the westward turn was exactly the low level of domestic innovation and intra-CMEA cooperation in these sectors. The acquisition of Western technology may have strengthened production specialization and cooperation inside CMEA as, for instance, has been shown in the case of motor vehicle industry 106.

Hungarian economists 107 increasingly draw attention to a sort of "perverse" link between intra-CMEA trade and East-West trade. The increase of export to CMEA countries creates new demand for imports from the West, partly because machinery, equipment know-how, etc. are of Western origin, partly because raw materials and semi-finished products also have to be bought outside CMEA. Soviet planners seem conscious of this perverse link. As mentioned above, they have imposed drastic demand cuts, curtailing new orders for Western machinery and equipment, and they have diversified the supply of raw material and energy products going to Western countries, leaving the supply of oil to Eastern Europe at the end-1970s level. At any rate this is an issue that certainly has more dramatic implications for the small Eastern European countries, than for the Soviet Union.

Mc Millan 108 suggests, that some positive influence on regional trade has been exerted by the revision of the pricing rule in 1975. According to the author the closer alignment of intra-CMEA prices to world market prices should

---

106. Cf. CIA (1979).

107. See for instance Koves (1982), p.335.

108. Mc Millan (1978).

have reduced the pressure to divert goods previously underpriced within the region to extra-regional markets. The author concludes that "if the traditional dichotomy between CMEA and world market prices has in the past served as a centripetal force, the closer alignment of the two price systems will logically exert centrifugal pressure on regional relations" 109.

The argument is certainly interesting but later developments have shown lasting divergence of prices in some sector (e.g. the case of oil) and the persistent attraction of selling the greatest amount of hard goods possible on external markets, in order to obtain real hard currency and not only an accounting credit on paper.

Finally, the question of the radial (or triangular) nature of intra-CMEA trade has to be mentioned. Schematically, since the last decade the USSR and the East European countries have expanded their trade with the West more rapidly than their mutual trade, and in the meantime trade relations of the individual CMEA countries with the USSR have increased faster than mutual trade between the small countries, increasing their level of interdependence.

c. Hard-currency trade and payments.

The main factors leading first to the increasing involvement of the USSR in world trade and then to a more "inward" attitude are preeminently economic in nature.

---

109. Ibid., pp.199-200.

The detente process of the early 1970s obviously provided a fruitful environment, in the same way as the deterioration of the political climate in the second part of the decade made East-West economic relations increasingly difficult, with an escalation in the use of economic levers to influence Soviet political behaviour, both domestically and internationally 110. But the volume of trade had started to increase well before 1969, generally recognized as the benchmark year of detente.

Two main arguments may be advanced to explain Soviet behaviour. First, there is a direct link between foreign trade expansion and the process of domestic economic reforms. After the failure of reforms attempted in the mid-1960s, the planners may have considered more extensive trade and investment relations with Western industrialized countries the easiest way to increase productivity of resources and the standard of living of the population. International exchange, in fact, presented the advantage of not involving economic (and political) decentralization, the difficulties associated with decentralization being probably one of the main causes of the retreat from reforms. In particular, emphasis was placed on imports of Western technology as a way of enhancing economic performance. At the same time greater integration within the CMEA might have improved efficiency, thereby reducing excess demand and paving the way for economic reforms.

---

110. The changes in Soviet foreign policy, the origin of detente and its decline are analysed, among others, in: R. Garthoff Detente and Confrontation; A. Yanov Detente after Brezhnev; G. Allison et al. (eds) Howks, Doves and Owls.

Secondly, the positive attitude of the Soviet leadership towards increased participation in world trade coincided with a dramatic increase in hard-currency earnings. And this is, in my view, the main explanatory variable of the opening-up process. During the 1970s the USSR was faced with substantial additional import possibilities, partially deriving from increased gold prices and partially from an improvement in terms of trade, due mainly, as we have seen, to the increase in the international price for oil. Hewett 111 has attempted to quantify those "windfall gains". He suggests that of the increased import capacity available to the Soviet Union in the period 1970-77 because of increased borrowing, improved terms of trade and increased gold prices, 50% was due to the terms of trade improvement and 34% to increased borrowing. The author himself admits that the calculation was done under the restrictive assumption that the Soviet Union is a price-taker on the gold market, but his conclusion is nevertheless significant:

> had the terms of trade and gold prices not improved, the Soviet Union would have had to borrow almost $ 28 billion to finance additional imports over and above what could be financed through exports at the 1971 terms of trade 112.

Vice-versa during the 1970s the Soviet hard currency balance displays, with the exception of the years of major

---

111. Hewett (1983), pp.289-91 and appendix, p.305.

112. Hewett (1983), p.290.

grain purchases, substantial surpluses. Unfortunately, information on multilateral trade is scanty and no official data are available on the USSR Balance of Payments. Western estimates have been provided, namely by the CIA, covering the period as far back as 1970. An analysis of the data summarized in table 13 reveals that:

i) the deficit in merchandise trade is offset by a surplus in three current account items: gold sales, military equipment sales (which should properly be considered merchandise) and net services 113;

ii) large debt accumulation on the mid-1970s never reached alarming proportions and was apparently brought well under control by the end of the decade.

Let us turn briefly to discuss these issues.

Merchandise trade.

It can be estimated that on average during the second half of the 1970s, nearly 40% of total hard-currency earnings were derived from primary products, 15% from gold sales and 10% from military items sales.

The Soviet Union's role as exporter of raw materials to the hard-currency area is not limited to petroleum and gas; exports of timber, iron ore, manganese, coal, asbestos, chromium and precious metals are not negligible. The USSR

---

113. In the reconstruction of Soviet Balance of Payments, gold sales are generally treated as a current account item. On the one hand, they play an equilibrating role, and on the other, as part of the current balance, they influence Soviet borrowing decisions. Cf. notes to table 13 and Hanson (1985), pp.3-4.

also possesses the world's largest reserves for many of these raw materials, even though difficulties in exploiting them are reported 114. Evidence has recently been produced of a change of attitude towards exports of certain raw materials and the USSR is reported to import significant quantities of strategic materials (titanium, vanadium and lead), even though it may still be considered a net exporter 115.

A large amount of hard-currency earnings derives from the sales of gold. Gold revenues and reserves are a state secret, however estimates are produced by Western scholars and by the CIA. According to M. Kaser 116, estimates of sales are generally quite reliable since the quantities supplied to non-socialist countries can be reconstructed with a certain degree of accuracy. His estimates are summarized in table 14.

Apparently, no coherent relationship exists between gold sales and a deficit in the current account of the Balance of Payments; occasionally gold sales more than offset trade deficit. Kaser suggests that gold sales are not planned to yield hard-currency revenues in a FYP period. He also notes that in years of Balance of Payments

---

114. A detailed description of problems related to the production and marketization of raw materials by the USSR can be found in Goldman (1979).

115. Cf. Fortune, n.102, July 28, 1980, pp.43-4.

116. Kaser (1983), pp.160-2 and Kaser (1985).

difficulties, a larger amount of gold was provided, with an apparent reduction of gold reserves, but under the assumption that in subsequent years reserves would be reconstructed through a reduction of supply. The gold market is also represented as a market where Soviet officials behave "rationally" 117.

The Soviet Union is the second major world supplier of arms. For quite a long time arms transfers, especially towards the Third world countries, has represented a negligible source of revenue: arms were transferred completely free or sold on extremely favourable conditions. This is no longer the case, or at least is no longer the norm. In coincidence with the Soviet hard-currency deficit of the mid-1970s a greater emphasis was placed on arms sales as a major source of convertible currency, and Soviet supplies increased dramatically towards oil-rich countries such as Iraq, Libya and Algeria, which were able to pay in cash. This may have become one of the most important channel for re-cycling petro-dollars. According to U.S. Arms Control and Disarmament Agency 118, the Soviet total arm exports (including socialist countries) increased from 15 billion dollars in 1972 to over 75 billion in 1982. The same source estimates that in 1978-82 Middle East countries received 17.5 billion dollars'worth of arms from the Soviet Union, of

---

117. Cf. Gold: The Game Last Up Financial Times, 26.10.1981 or the analysis developed by Schroeder (1986), pp.9-12.

118. US Arms Control and Disarmament Agency World Military Expenditures and Arms Transfers, 1972-82, April 1984. All the figures on arms trade referred to in the text, unless otherwise specified, are taken from this publication.

which 1 billion went to Iran, 6.5 billion to Iraq, two OPEC countries, and more than 8 billion to Syria. In the same period arms worth 6 billion dollars were transferred to Lybia 119, and arms worth more than 3 billion to Algeria. Not all deliveries were paid in convertible currency. Ericson and Miller estimate that hard currency sales varied from a minimum of 10% of total sales (1970-72) to a maximum of 43% (1977). Hard currency receipts grew from 100 million US dollars in 1970 to 1,000 in 1974, to peak at 1,644 in 1977 120. The interpretation of arms sales as a balancing item is rather controversial. As noted by Graziani, at least in the last quinquennium the transfer of hard-currency between LDCs and the Soviet Union encountered increasing difficulties and main recipients of arms have tended to rely more and more on long-term credits on the part of the Soviet Union 121.

Finally the USSR is also reported to be a net earner from services such as transportation and tourism, even though at the time of major grain imports, hard currency expenditures might have exceeded revenues.

---

119. Just to give a measure of the transfer, Italy, the second arm supplier to Lybia, delivered less than 1 billion dollars of military equipment in the same period.

120. Ericson and Miller (1979), p.214.

121. Graziani (1987), pp.290-291.

Soviet debt.

For the whole decade Soviet financial exposure towards the hard currency area was never particularly worrying. The program of investment based on the acquisition of Western technology and the resulting trade deficit in hard currency, only partially offset by gold and arms sales, led to a noticeable increase of the net hard-currency debt in 1974-77. As table 13 illustrates, USSR's gross debt doubled in 1975 with respect to the previous year and reached the level of nearly 15 billion dollars by the end of 1976. However, Soviet net debt amounted to 11 billion dollars by the end of 1977, but dropped in the following years, reflecting a more cautious approach by the Soviet authorities, an improved agricultural performance after the 1975 harvest failure, an additional allocation of oil to the hard currency market and a severe cut in equipment orders.

The interpretation of data reported in table 13 is rather controversial, especially for the presence at the same time of substantial current account surpluses and increase in borrowing. Phil Hanson suggests that Soviet authorities manage the hard currency balance of payments in such a way to maintain very high international liquidity, low debt-service ratios and favourable credit-rating 122. He also notes that the large current account deficit of the mid-1970s was largely unintended and consequently immediate action (increase in gold sales and sharp reduction of import) was taken to eliminate it. It remains unclear why

---

122. Cf. Hanson (1985), esp. pp.5-9.

the substantial surplus of the current account balance after 1977 halted, but not eliminated, hard-currency debt. Several explanations have been advanced 123. First, data reported in table 13 do not take into account that, as mentioned before, hard-currency arms sales to LDCs take place mainly on credit. This implies that Soviet outstanding credit to LDCs has grown, but most of it is non-redeemable. Second, the reconstructed Balance of Payments make no allowance for hard-currency trade inside the CMEA, where the Soviet Union had a deficit of around 1 billion dollars in the early 1980s 124. In other words, Soviet current position might have been less favourable than suggested by Western estimates.

By the end of 1979 the debt situation appeared to be well under control: total net debt was around half of the convertible currency exports and the debt service ratio was circa 18%, according to CIA estimates 125. Soviet financial reputation remained substantially high, even in the following years, as the Institutional Investor index of credit rating testifies 126. Estimates of the Soviet debt burden confirm an overall wealthy situation: the ratio of debt to merchandize exports remained around 20% for the whole decade, and the ratio of debt service to the total

---

123. Cf. WEFA Centrally Planned Economies Service Analysis of Current Isssues, 6(16), 1986.

124. Ibid. p.3.

125. CIA (1980), p.8.

126. Cf. Institutional Investor, Sept. 1981, pp.206-215; Sept. 1982, pp.298-300; Sept. 1983, pp.246-248; Sept. 1984, pp.266-78; Sept. 1985, pp.243-246; Sept. 1986, pp.245-264; Sept. 1987, pp.125-137.

hard currency earnings never exceeded this percentage 127. Finally, the growing improvement in the Soviet debt profile is reflected in the better terms offered on syndicated loans. As reported in table 15, at the end of the 1970s, the USSR obtained terms and conditions similar to the market sovereign borrowers.

4.3. Flexibility: domestic versus foreign trade sector.

So far the analysis has dealt with aggregate trade flows. An assessment of dependence must, however, take into account an evaluation of the role that trade plays at sectoral level. As explained in chapter 2, in fact, change in the economic structure, demand elasticity, import and product substitution, concur to determine th extent of the damage to the dependent economy. It is rather difficult to quantify these phenomena without a quantitative model disaggregated by sector, which allows for interindustry relations. As is well known, Soviet statistical authorities have released ex-post input/output tables for the national economy, only in three years, 1959, 1966 and 1972, but the tables have never been published in a complete version, even in a highly aggregated form 128.

---

127. Zoeter (1982), Table 6, p.494.

128. Western estimates, namely those elaborated by the US Department of Commerce, are published with several years of delay and present methodological and conceptual problems, particularly for the

It is therefore necessary to resort to more "qualitative" inferences, to be drawn from available data. In this section some considerations are developed for two basic sectors of the Soviet economy: the Machine Building Metal Working (MBMW) sector and the energy sector.

a. Machinery and equipment.

Table 16 summarizes growth rates and elasticities of imports of machinery and equipment 129 with respect to investment in machinery. Both trade and investment data are measured at constant prices, so that elasticities are not influenced by price changes. The elasticities obtained represent a rough indicator of the relationship between domestic variables and trade, and in particular can be considered a representation of changes in imports of machinery and equipment related to change in the domestic demand of machinery, approximated by investment.

The data reported in the table show that import growth in the sector considered was appreciably faster than demand in all but one of the FYP periods considered. Contrary to what intuition might have suggested, the table does not reflect the alleged increased reliance on Western sources of investment.

---

evaluation of trade flows. See chapter 3, esp. section 3.1.

129. CMEA Standard Foreign Trade Classification heading 1 "Machinery, equipment and other means of transport".

The dynamic of Soviet imports from western countries can be at least partially explained by the large projects undertaken by the Soviet leadership, the other component being the enormous increase in hard-currency exports: the sharp acceleration in the late 1960s and early 1970s (Volga passenger automobile plant and the Kama river truck plant, as well as the modernization of the chemical industry) is followed by a period of stagnation, probably due to problems of assimilation of western imported technology and then by an upward spurt linked to the Urengoi gas pipeline project in the early 1980s. The rapid expansion of imports from Eastern European countries in the last quinquennium considered, reflects the necessity to eliminate the Soviet trade surplus.

For the reasons explained above it would be rather difficult to indicate whether the level of dependence of the sector has increased in the last twenty-years considered. The first issue, substitutability at domestic level, can be debated only at a speculative level. Indirect evidence on the gas pipeline deal seems to suggest that such a process of substitution is possible, but the extent of the dislocation of resources, both within the MBMW sector and in the rest of the economy, is difficult to assess 130.

On the second issue, the possibility to substitute intra-CMEA for extra-CMEA sources, evidence is mixed. Brada

---

130. A.P. Ognev indicates that as a response to the Reagan embargo on oil and gas equipment for the Urengoi pipeline, 130 new type of machines, without a "western counterpart", were developed for the construction of the pipeline. Ognev (1986). p.23.

and Hoffman 131 suggest that Soviet imports of machinery have concentrated mainly on goods neither available domestically, nor in the other socialist countries, and therefore there is little substitutability between these two sources.

The problem of technology transfer has been analyzed exclusively from the view-point of Soviet trade flows with the West, disregarding Eastern European countries as a source of technology useful for the Soviet Union. Even though the technology of Eastern origin has always been considered a "second best", many factors tend to indicate that it is nevertheless important. The hypothesis may be advanced that the similarity of production processes, materials used, servicing, flows of information, close cooperation, and other factors contribute to making the technology originating within other CMEA countries more suitable for the Soviet economic system 132.

In the above-quoted work, Brada and Hoffman reach the conclusion that Western capital does not appear to be more productive than capital of Soviet or Western origin.

The policy statements contained in the Scientific-technological cooperation programme adopted in December 1985 are aimed at overcoming the systemic obstacles to technological advances in planned economies. These impediments are not uniform throughout the

---

131. Brada-Hoffman (1985).

132. On the question of scientific-technological integration and the transfer of technology within CMEA, see Bogomolov-Bykov (1986), esp. chapters 4-8.

CMEA;institutional reforms, such as direct interenterprise contracts, can speed up the pace of technological progress, autonomously as well as through regional trade. The potential significance of CMEA technology transfer for the Soviet economy should not be underestimated. Firstly, these relations do not encounter the obstacles which have restricted Soviet technology imports from the West, especially import finance difficulties and Western restrictions on technology exports. In addition, Eastern Europe's rouble debt, except perhaps the Polish one, will soon have to be repaid and this can be accomplished mainly through a substantial increase of machinery exports.

b. Energy products: production and trade.

In section 4.1 I emphasized the growing share of energy products, especially oil, in Soviet exports and the increasing characterization of the Soviet Union as a "one crop" economy, particularly in its trade relations with Western Industrialized countries. The issue analysed here is whether, owing to this dramatic export growth, the level of Soviet sectoral dependence has increased or not during the 1970s. There are reasons to believe that this has been the case in this particular sector.

According to our definition, two kind of dependence relations should be looked for:

- export dependence, since part of the domestic production relies on external markets;
- dependence on hard currency earnings, i.e. the possibility to earn hard-currency in transactions with foreign partners.

The overall evolution of Soviet production and export of oil is summarized in tables 17. The table shows the outstanding increase in Soviet exports. Oil production increased constantly over the period 1960-1980, followed by a period of constancy and by a reduction of production in the last two years considered (cf. graph 5). Total exports of crude remained below production up to the first half of the 1970s, then grew more than production, albeit with some fluctuations and with the exception of 1974. A strongly divergent pattern is indicated by data disaggregated by area (East-European members of the CMEA (CMEA5) and Western industrialized countries (MDCs) 133): while exports to the CMEA area increased steadily for twenty years, and then declined dramatically in the first part of the 1980s, export to the West followed a less stable trend.

Some tentative conclusions may be drawn from the graph. First, a clear strategy of boosting exports towards the hard-currency area does not emerge from the data. Second,

---

133. The distinction is between soft- and hard-currency areas. Rumania is not included in the CMEA group, since most of the transactions concerning energy products are cleared in hard-currency.

export of oil towards industrialized countries increased well before the 1970s, and actually an increasing volume of deliveries started in the mid-1960s. Third, the enormous increase in world market price of oil, allowed the Soviet Union to reduce the amount supplied to Western partners, at least in the short-term, and gave the Soviet planner an additional policy instrument for adjustment. Viceversa, within the CMEA, where the price level is more rigid, the volume continued to grow almost constantly for the whole decade.

However, as has been repeatedly stated, an increase in trade flows per se is not an indicator of increased dependence; several other factors have to be taken into account:

- the share of export on domestic production;
- demand elasticity;
- product substitution, both domestically and as exported item;
- policy responses to instability in the oil and gas market.

A comparison in terms of export share in domestic production sheds some light on important aspects not completely disclosed by an analysis in terms of absolute level of trade. With the noticeable exception of 1974 the share of exports as a percentage of oil production shows a rather steady growth up to 1980, with a sharp drop in the first half of the 1980s (cf. graph 6). The increase took place in parallel to a growing level of production. A turning point is represented by 1977, when export started to

grow more slowly and then declined (1981), while production stagnated.

If data disaggregated by main trading partners are considered, rather surprisingly in the long-run, and contrary to what is often affirmed by the literature, the share of production going to the CMEA5 increased more than the corresponding share going to the West (cf. tables 18 and 19 and graph 7) 134. Different patterns may be singled out subdividing data into four sub-periods. From 1960 to 1967 a similar proportion of production was exported to the two areas. The trend diverged sharply in the following period (1967-74); an increase in the quantities supplied to Eastern Europe was matched by a decline in the share going to the West: exports towards this area declined from 8.5% of production to less than 3.5%. The second half of the 1970s are characterized by an almost constant level of deliveries to the CMEA5, while deliveries to the West fluctuated widely, peaking in 1977, when 7.5% of production was exported towards this area. Finally, the first half of the 1980s saw a boom in the share exported to the West, clearly at the expense of deliveries to Eastern Europe.

In a recent book, M.Nissanke advances, and tests empirically, the hypothesis that oil exports were used as a balancing item for trade adjustment and in particular that Soviet oil exports to the West were adjusted in response to changes in the state of the external balance 135. He claims

---

134. All calculations have been performed on data in volume terms estimated by Wharton.

135. Chadwick-Long-Nissanke (1987), esp. chapter 9.

that in many respects oil can be considered a rather flexible export commodity, and can be used to deal effectively with short-run adjustments of external balance. There are elements that may support this interpretation. Oil has a certain degree of flexibility in the domestic market, where a gas-for-oil programme has been developed 136. Data on gas production, export and apparent consumption reported in the table 20, show a clear tendency towards greater reliance on this product, both for domestic consumption and export. But on the external market, particularly in trade with MDCs, the capacity to substitute gas for oil is more limited, due to both technical problems (transportation) and Soviet marketing strategy - the supply of gas is mainly linked to long-term contracts, as is shown clearly by the data summarized in graph 8. No clear relationship emerges between oil and gas exports to the west, except perhaps for very short intervals. Viceversa the data seem to indicate an attempt to use gas exports to compensate for the declining quantities of oil exported to the CMEA5. The phenomenon emerges very clearly in the first half of the 1980s, but already in the 1970s growing quantities of natural gas were supplied to the socialist countries.

Finally, oil faced a fairly elastic international demand, and trading oil on the spot market, where the Soviet Union is basically a price-taker 137, presented

---

136. Furthermore, reports on plan fulfillment clearly show a marked tendency to overfullfill gas production, as opposed to underfullfillment of oil targets.

137. Cf. Wolf (1982b).

disadvantages due to fluctuation of prices. The issue is even more relevant since energy products have been of crucial importance as a source of hard currency revenues. As table 21 shows, more than 4 billion dollars were earned from gas and oil exports to the OECD area in 1975, growing to more than 17 billion in 1980. Oil and natural gas accounted for half of Soviet total exports to the OECD countries in 1975, and for almost 80% in 1980, before the sharp decline in energy prices 138.

Summing up, the energy sector is presumably one of the sectors more exposed to vulnerability to exogenous disturbances. The share of exports in domestic production increased during the 1970s, even with stagnating production and the Soviet Union has become more and more dependent on hard-currency revenues coming from this sector. The policy of product diversification, though relatively successful especially within the CMEA, has taken place within the sector itself (replacement of gas for oil); the reduction of the share of energy products in Soviet exports to the hard-currency area was brought about by the lack of sufficient supply of competitive manufactured products. It remains to be seen whether the Soviet leadership deliberately chose the option to "specialize" on energy trade, rather than diversifying the export trade structure. As I have argued in section 3.3, Soviet aversion to any kind of increased reliance on the foreign trade sector suggests that such a development took place more by necessity than by choice.

---

138. A more detailed analysis of recent developments is presented in section 7.1.

APPENDIX A. NOTES ON VALUE, VOLUME INDICES AND TERMS OF TRADE CALCULATION.

Net Barter Terms of Trade (NBTT) are generally defined as the ratio of Unit Value of Exports to Unit value of Imports, where unit value indices represent the ratio between value indices and quantity indices. They measure the purchasing power of exports in term of imports. If Soviet export price rises, the NBTT rises too, unless the average price paid by the USSR for goods imported rises at least as much as the export price.

Terms of trade have been calculated mainly according to Soviet official figures, although I am aware of the methodological shortcomings of Soviet official statistics and of the purely indicative nature of the investigation.

Value indices both for imports and exports do not present particular problems, apart from the usual ones affecting the Balance of Payments of the USSR: exclusion of gold and other precious metals; evaluation of intra-CMEA trade flows; evaluation of long-term bilateral agreements within and outside CMEA, etc.. For the purpose of the present paper and with these shortcomings in mind, value indices have been calculated directly from Vneshnyaya Torgovlya SSSR : statisticheskii obzor. Additional difficulties have arisen in the calculation of quantity indices. The Ministry of Foreign trade has published quantity indices for total imports and exports since 1960. It has also published since 1963 a broadly disaggregated index for imports and exports from and to main trading

areas: Socialist countries, CMEA, Capitalist countries (since 1963). The index for non-socialist countries includes developed and less developed countries. Finally in the Jubilee edition of the 1982 yearbook data reported distinguishing between developed and less developed countries for the period 1970-1981 are given. These indices may be utilized for calculations of terms of trade disaggregated by main trading areas. There are, however, problems concerning weights and samples. In the years under review three main revisions have taken place. The base year was changed in 1975 (from 1965 to 1970) and price weights were changed in 1976 (from 1970 to 1975). Apparently similar modifications of the sample occurred in 1980,when the base year was changed again from 1970 to 1975. However, since the indices are published for two consecutive years and the handbook always reports one overlapping year, it has been possible to chain-link them. Finally, sometimes different values for the same year have been published in different volumes of VTSSSR. As shown by Hewett 139, the 1970s' indices for total quantities appear to be inconsistent with the two underlying disaggregated indices for socialist and non-socialist trade. For this reason these official figures have been compared (and integrated) with the data published by the U.N.. Unfortunately, only data for the period 1970-84 have been published as complete time series, disaggregated only by two main areas, socialist and non-socialist. The nominal trade flows have been deflated with price indices obtained from the Hungarian statistics

---

139. Cf. Hewett (1983), pp.271-2.

and adjusted for discrepancies. The generated volume indices diverge from the official to various degree, but not substantially. Table A summarizes generated and officially reported volume indices.

Appendix table A. Official and estimated volume indices.

	EXPORT		IMPORT	
	est.	off.	est.	off.
1960	29.4	32.1	24.8	33.6
1965	45.4	49.0	36.0	44.4
1970	69.4	78.4	53.7	60.6
1975	100.0	100.0	100.0	100.0
1980	128.2	127.0	126.9	132.9
1984	145.0	143.1	154.7	168.4

Source: UN-ECE Economic Bulletin for Europe 37(4):410, 1985.

5. DEPENDENCE AND INTEGRATION: SOVIET RELATIONS WITH EASTERN EUROPE.

The concept of dependence, as defined in chapter 2, can be fruitfully applied when assessing the nature of the relationship between the USSR and the East European members of CMEA (EE6) 140. In the following pages I would resort in particular to the concept of negative dependence, i.e. the opportunity costs incurred by the Soviet Union in its "privileged" trade with the CMEA countries.

5.1 Gains and losses in intra-CMEA trade.

The nature of economic relations between the Soviet Union and the other socialist countries is one of the outstanding issues in the literature concerning the CMEA. This area of research has received extensive treatment in recent economic literature 141. For this reason only the

---

140. There is at least another area where the concept could find useful application, namely the assessment of the real extent of the process of integration within the CMEA. This would mean, however, venturing into the problem of trade creation - trade diversion in CMEA, an issue that is beyond the scope of the present research. The topic has been discussed extensively, among others, by Holzman (1962) and (1987) Ch.9, pp.171-186; Pelzman (1977) and (1979); Brabant (1977) and (1978b); Brada-King (1980).

141. The problems have been discussed by, among others: Marer (1976a); Hanson (1981a); Graziani

main arguments of the discussion will be summarized here.

The importance of the intra-CMEA share in total Soviet trade reflects political, as well as economic, choices. It is less "uncertain" to trade with systems with a similar structure (bilateral, "soft-currency" trade) and, at least from the Soviet point of view, there is neither fear of commercial leverage for foreign policy purposes, nor fear of dependence, as in the case of trade with the West. It follows that political as well as economic costs and benefits should be taken into account when assessing intra-bloc relations, both economics and politics, if taken alone, fail to explain the relations between the Soviet Union and its allies. On the one hand, apparently scarce economic logic governs intra-CMEA relations; on the other, the distribution of political power inside the bloc leads to a presumption of exploitation by the USSR of the other Socialist countries.

The idea that the USSR has been economically exploiting trade partners in the CMEA has been a dominant one for many years and examples may be found even in recent literature 142. Z. Nagorski 143, for example, argues that the Soviet Union uses the transferable rouble to obtain highly favourable rouble/dollar exchange rates. In this way, particularly during the 1970s, the Soviet Union bought

---

(1982);Lavigne (1983); Bornstein (1979); Dietz (1979) and (1984); Hewett (1977) and (1984); Kohn-Lang (1977); Holzman (1987).

142. Cf. Zimmerman (1978); Abonyi-Sylvain (1977).

143. The Wall Street Journal, 8.1.1982.

cheaply manufactured products from its CMEA partners, while the other socialist countries were obliged to borrow heavily from Western markets to buy machinery and raw materials used to produce goods then exported to the USSR. The author suggests that the exploitation of CMEA trade partners forms the basis of the construction and maintenance of the Soviet military establishment 144.

After the 1950s, it would be inappropriate to describe the relationship of the USSR with its East European allies as one in which exploitation prevails, even though it is true that the relationship is characterized by a strong asymmetry. As argued by M. Lavigne 145, while intra-CMEA trade does not play a decisive role in Soviet economic growth, the level, composition and terms of trade with the USSR are of fundamental importance for Eastern Europe's economic development. This is even more relevant if one considers the fact that the CMEA as a group is isolated from the world economy to a significant degree, and that this may have led to a structure of mutual economic dependence, i.e. a strong interest by each member country in the economic performance of the others.

Recent literature, on the contrary, seems to agree on the fact that, at least in the last decade, the relationship between the Soviet Union and its CMEA partners has entailed

---

144. Such a position has been criticized insofar as it does not take into account the fact that the difference between the rouble and the other East European currencies reflects the relationship between the distorted domestic price structure and the value of goods traded in roubles at special intra-CMEA prices.

145. Cf. Lavigne (1983).

increasing costs for the USSR 146. From a theoretical point of view, a transfer of resources of this kind can be explained in term of a well known phenomenon. The exploitation of colonial territory by the metropolitan power, in the long-run ends up in a relation entailing increasing costs for the colonial power itself (negative dependence). Even though Soviet relations with Eastern Europe cannot be properly described as a metropole-colony relationship, the development of an asymmetric relationship between the USSR and the EE6 can be explained by a simple model: the process of rapid industrialization based on the Soviet centralized system imposed on Eastern Europe after the II World War led to growing needs for imports of raw materials, capital, technology, which were satisfied mainly within the CMEA, where the resource endowment and the relatively higher level of development of the USSR were of enormous importance 147. In the meantime, however, this pattern imposed on the Soviet Union the responsibility for the supply of resources and raw materials necessary in order to avoid a sharp deceleration of growth rates and a profound deterioration in the standard of living of the socialist countries. The phenomenon is more evident during the 1970s, when the extent of the crisis is more pronounced than on previous occasions, and the exogenous disturbances hit the EE6 economies more heavily than in the past, requiring

---

146. Cf. Marrese-Vanous (1983b), (1984); Dietz (1984), (1985b); Hewett (1984a); Lavigne (1985).

147. On this point cf. also Graziani (1982), pp.10-11.

immediate and adequate policy responses.

The following section aims at describing the way in which this transfer has taken place.

5.2 Price changes and the evolution of intra-bloc relations.

Benefits received by the CMEA countries have been identified with:

i) a substantial, non-redeemable trade surplus in favour of the CMEA;

ii) "implicit trade subsidies", i.e. the opportunity loss to the Soviet Union of trading within the CMEA at CMEA foreign trade prices rather than with the West at WMPs.

iii) the deterioration of the terms of trade at a rate far below what markets prices (or even CMEA rules) would support.

The enormous fluctuations in prices of raw materials and finished products on the world market over the last twenty years have also had some fundamental consequences on intra-CMEA trade. It is a widespread view among Eastern and Western commentators that the USSR has taken advantage of its position as net exporter of raw materials and energy products, vis-a-vis both its Western and CMEA partners. With respect to its socialist partners the Soviet advantage has been primarily indirect, through the criteria for determining prices. Since 1958 prices of transactions have been fixed by the so-called Bucharest formula, for five years on the basis of the average world market prices for

the preceding five year period. The rule was supposed to facilitate the fixing of quantities traded, thus helping the planners to provide a stable longer-term horizon. The procedure, however, introduced noticeable time lags in the transmission of variations taking place on the world market to the intra-CMEA trade, as was particularly evident during the general inflationary development of the early 1970s, when WMPs and intra-CMEA prices both increased, but to a different extent.

According to calculations made by N. Mitrofanova reported in table 22, Soviet export prices for fuels, raw materials and metals kept pace with WMP increases from 1970 to 1972, fell in 1973 and 1974, rose sharply in 1975 and remained at the same level in 1976. The prices for agricultural products were substantially below world market prices for the whole period, with a slight tendency to reduce the gap in the last two years considered (1975 and 1976). On the contrary Soviet export prices and WMPs run parallel for machinery and equipment 148.

The situation was only partially reversed with a revision of the criteria for intra-CMEA price determination at the beginning of 1975. According to the "Moscow principle" 149, prices are fixed for one year only, on the

---

148. See also Bornstein's comments on these figures in Bornstein (1979), pp.301-2. It is interesting to note, incidentally, the almost random nature of Soviet domestic wholesale prices with respect both to world market and export prices.

149. Contrary to what is often affirmed, the "Moscow principle" is simply a specification of principles already present in the Bucharest formula, and not a set of new regulations.

basis of WMPs of each preceding five year period. Dietz suggests that three considerations were probably decisive for adopting the new criteria:

1. the revenue shortfalls to be expected under the old rule with respect to the spot prices were unacceptably high for the Soviet Union;

2. this shortfall tended to cause rising CMEA demand for Soviet raw materials delivery, in conditions of falling (potential) export capabilities;

3. the old system would have led to even greater divergence between WMPs and CMEA prices, which would have led to disturbances (e.g. Soviet refusal to supply oil) in intra-bloc trade 150.

Far from representing a solution to the dichotomy between WMPs and CMEA prices, they introduced a principle of quicker alignment of prices inside the community to the world standard, which, if fully applied, would have led to a sharp reversal in the direction of costs and benefits from intra-CMEA trade. However, it is necessary to point out the lower relevance of price movements in assessing the nature and volume of gains and losses in intra-CMEA trade than in trade among market economies. In fact, many of the characteristics of the foreign trade system governing socialist trade serve to lessen the importance of these indicators. The system is, in its essence, a pure bilateral bargaining system, where quantities traded and prices are agreed on by each pair of countries. Fixed rules are generally purely indicative and evidence can be produced of

---

150. Dietz (1979), pp.267-70.

substantial deviation from them 151. Hewett notes that since factor flows have been virtually absent inside the CMEA, historically the major determinants of costs or benefits to each member country from trade with the other has been the net barter terms of trade, which summarize the net effects of price changes weighted by the quantities traded 152.

Table 23 summarizes the most important Western estimates of Soviet net barter terms of trade vis-a-vis the CMEA countries and a set of estimates generated using Soviet official data according to the methodology explained in Appendix A 153. The data clearly support the view of a substantial improvement of Soviet terms of trade with CMEA countries. Discrepancies may be singled out for particular years, but, on the whole, an estimated improvement of around 50% may be suggested for the period 1973-83.

Energy products exerted a strong influence also on intra-CMEA trade. In 1983 more than 50% of total Soviet exports to socialist countries (a good proxy for the CMEA, which represents more than 90% of total) was composed by

---

151. The case is clearly shown by referring to oil price. The official intra-CMEA price for 1976 was 34 dollar per barrel per tonne; oil was sold to Bulgaria at $ 37.5, to Czechoslovakia at $ 34.1, to the GDR at $ 32.1, to Hungary at $ 44.7, to Poland at $ 42 and to Cuba at $ 32.7. Cf. Dietz (1979), p.272.

152. Hewett (1984a), pp.6-7.

153. Calculations and estimates of quantity indices and terms of trade with CMEA countries can be found among others in : Hewett (1974), pp.60-110; Hewett (1980), p.272 and p.304 and Hewett (1983); Treml (1980); Dietz (1979), pp.264-5; Dietz (1984), pp.11-4; Vanous (1981), pp.698-704.

"Fuel and Fuel products". In 1981 the Soviet Union exported 76% of total export of solid fuel, 46.6% of oil and oil products and 45.9% of gas to these countries.

The huge increase in prices affecting both intra and extra bloc trade in these products makes the assessment of the processes taking place in the last decade rather hard. Soviet statistical sources are rather sketchy on disaggregated figures in quantity terms or constant prices. With the help of some Western estimates it has been possible to calculate export quantity indices for oil delivered by the Soviet Union to CMEA countries since 1970. The results of these calculations, highly tentative particularly for the last two years considered, are illustrated in table 24 and graph 9. Even though they should be interpreted with great caution, they seem to confirm the propositions advanced in the preceding pages, above all the fact that the price of oil and its variations have exerted a paramount influence on the evolution of intra-CMEA trade over the last ten years. In particular the evolution of the quantity indices indicates that oil deliveries expanded more quickly than the remaining exports from 1970 to 1974. The oil index increased over the period by 71% while the index representing non-oil exports by just 57%. The effects of price changes on the world market, and the following revision of intra-CMEA prices, started to be felt with some delay in intra-CMEA trade. Deliveries of oil started to drop for the following two years, when instead a greater increase in the quantity of non-oil products delivered was noted. Since 1979 the quantity index shows a marked reduction in

exports of Soviet oil to the CMEA 154.

5.3 The emergence of a Soviet trade surplus.

Bilateralism is often indicated as one of the main reasons for the unsatisfactory development of co-operation within the CMEA 155. Even though significant disequilibria may be accumulated from time to time, the aim is to achieve a bilaterally balanced trade turnover. In the case of bilateral accounting in non-convertible currency, i.e. around 90% of total Soviet trade with CMEA, it is hardly worthwhile trying to achieve a surplus in the Balance of Payments. Owing to the characteristics of inconvertibility and bilateralism dominating intra-CMEA trade, here the balance between imports and exports may be supposed to represent "a claim by the surplus country which can only be redeemed in goods exported from the deficit country" 156. In other words, a continual trade surplus by a country represents accumulated claims that are not necessarily going to be redeemed by the other(s).

The price changes in the first half of the 1970s were

---

154. For a proper evaluation of the table, however, it should be noted that the aggregate "non-oil" also includes other energy products, such as gas, which as is well known, have been acquiring increasing weight in Soviet exports.

155. Cf. Brabant (1980); Koves (1981).

156. Hewett (1984a), p.244.

accompanied by a marked shift from deficit to surplus in Soviet trade with the CMEA. According to the data presented in table 25, in 1975 the Soviet Union had small surpluses of the order of 100 million Transferable Roubles (TR) with the other member countries of the CMEA, with the notable exception of Rumania, which had a surplus of 120 million TR. At the end of the 1970s, the surplus had increased dramatically, reaching in 1980 around 3,000 million TR for the nine members of CMEA, i.e. around 6 times the value of 1975. An enormous increase took place the following year, when the surplus reached 5,000 million TR. A great part of this growth is due to the sharp increase of the Polish trade deficit, which in 1981 represented more than 30% of total. The trade surplus has shown a tendency towards a reduction for the last three years, for the main part determined by the reduction of the Polish deficit and a modest turn to a Soviet deficit with respect to Rumania and Hungary.

Comparing terms of trade and balance of payments, P. Hanson 157 finds that a close approach to bilateral balancing is followed in presence of stable net barter terms of trade, while the improvement of Soviet terms of trade is accompanied by substantial Soviet trade surpluses.

The hypothesis may be advanced that during the 1970s the USSR lessened the impact of unfavourable shifts in the terms of trade in its favour by extending credits to its CMEA partners in the form of a growing annual merchandise surplus. It may be discussed whether the extensions were deliberate or took place owing to particular automatisms

---

157. Hanson (1981a), p.99.

characterizing the nature of planned trade flows. Trade flows are planned in real terms so as to balance at current prices: subsequent price changes lead to an unplanned surplus/deficit automatically covered by credits, leading to changes in the overall debt position, or they are current deficits repaid by subsequent surplus. In theory they could be settled at short intervals, but in practice, because the Soviet Union was in a stronger international position than the other CMEA countries, this kind of unplanned Soviet surplus was turned into "bookkeeping" entries i.e. "automatic" credit extension by the Soviet Union.

5.4 Some remarks on the "implicit subsidies" theory.

In a well known book and in several articles, Jan Vanous and Michael Marrese have offered an extensive treatment of the issue of gains and losses in intra-CMEA trade 158. According to what they consider the more reliable of their estimates, the authors suggest that in the period 1960-80 the Soviet Union transferred resources equivalent to $ 87.2 billions to the Eastern European members of the CMEA 159. The nature of the subsidy derives from the fact that the USSR has exported to certain Eastern European countries "hard" goods at CMEA foreign trade prices which are below WMPs, in exchange for imports of "soft" goods at CMEA

---

158. Marrese-Vanous (1982), (1983a), (1983b), (1984).

159. Marrese-Vanous (1983b), p.3.

foreign trade prices which are above WMPs. In other words "Eastern Europe has received preferential terms of trade from the Soviet Union compared to those available on the western market" 160.

The reason why this phenomenon is taking place is for the authors extremely clear. The Soviet Union consciously engages in preferential trade with Eastern Europe in order to generate unconventional gains from trade, i.e. certain non-economic benefits of a military, political and ideological nature. The transfer "reveals strong political commitment to Eastern Europe and ... the strategic value (the Soviet policy-makers) attach to it" 161.

The propositions by Vanous and Marrese attracted great attention and provoked fierce discussion among Western and Eastern economists. Other authors express different views on the amount of estimated subsidies. In their testimony before the Joint Economic Committee, presented on July 8,1982, for instance, Gen.R.X. Lakin and E.M. Collins suggest that the subsidies should range from an yearly average of $ 2 billions in 1971 to $ 24 billion in 1980 162. A similar position is expressed by Marer, who holds the view that Marrese and Vanous considerably overestimated the measure of subsidization of trade in industrial goods, not a negligible objection since a large portion of all subsidies were created, especially from 1975 to 1979, in this category of

---

160. Ibid., p.3.

161. Marrese-Vanous (1983b), p.67.

162. The Wall Street Journal, 15.1.1982.

trade 163. Finally a more skeptical position has been suggested by P. Hanson, who denies the possibility of an exact quantitative estimate 164.

A custom union interpretation of the transfer of resources between the Soviet Union and the EE6 has been advanced independently by Brada, Desai and Holzman 165. Their interpretation rather than rejecting the Marrese-Vanous hypothesis tends to qualify it in terms of more stringent economic arguments. According to this interpretation, in fact, the distribution of subsidies is more of an economic than a political nature.

The theoretical arguments put forward by Brada in his article in the Journal of Comparative Economics may be summarized as follows 166. As a consequence of the formation of a custom union, intra-bloc trade increases relative to trade with the rest of the world, but, more importantly, if the resource endowment of the integrating countries differs from the endowment of the rest of the world, the relative prices within the union will differ from the relative prices of the rest of the world (p.87). And it is just the

---

163. Marer (1984). On this point see also Koves (1983), pp.127 et seq.. In an another part of the article Marer seems to question even the existence of any form of transfer: cf. Marer (1984) esp. pp.176-7.

164. Hanson (1981a). A similar position may be found also in Graziani (1982).

165. Brada (1985); Desai (1986); Holzman (1987), Chs. 10 and 11.

166. Brada (1985). Page numbers in parenthesis refer to this article.

divergence between intrabloc and world market prices that affects the distribution of the gains from trade among the integrating countries. It follows that integration will increase the proportion of gains obtained by those integrating countries that have relatively greater endowment of the input that is scarce within the union, and viceversa, countries endowed with abundant factors will receive a smaller share of total gains than they would receive under free trade (p.88). The CMEA can be considered a custom union where capital is a scarce factor, while natural resources are the abundant factor: therefore the distribution of subsidies is mainly the result of factor endowment of members (p.89).

Similar arguments lead Holzman to conclude that "the more likely explanation is (...) that the transfers are not subsidies, but represent profit and losses generated implicitly by trading in an autarkic, trade-diverting custom union" 167.

The explanation, even though formally attractive, does not take into account the fact that a mechanism of separate balancing for hard and soft goods, such as the one in existence within the CMEA, should reduce or even eliminate "unwanted" subsidies 168.

---

167. Holzman (1987), p.195.

168. Actually Holzman considers this hypothesis, but on the basis of the available evidence rejects it. Cf. Holzman (1987), Ch. 11.

The overall assessment of the issue is rather controversial.

First it is probably useful to draw a distinction between long-term and medium-term effects. P. Hanson notes that in the long-run the large amount of trade with the USSR has been detrimental to the growth of production and income level of the region 169, primarily for the imposition of Soviet-style priorities for investment and labour mobilization. Then the systemic "undertrading" which has characterized CMEA member countries since 1950s, has cut these countries off from sources of advanced technology and equipment, probably exerting a negative influence on productivity growth. The external imposition of a rigid mechanism of centralized planning has meant lower efficiency of the system, while the socialist division of labour has led to cases of domestic distortions in various CMEA states. The above mentioned "radial" pattern of intra-CMEA trade has been reinforced by the increasing dependence on Soviet supply of raw materials and energy and the incapacity (or unwillingness) to implement drastic changes in the energy intensity of the national economies.

Viceversa, if medium term considerations prevail, the effect is possibly a negative one for the Soviet Union. The USSR would have been better off economically if it had been able to divert its exports of energy and raw materials to Western countries and purchase manufactured products from the West rather than from the CMEA .

---

169. Hanson (1981a).

Second, it is rather difficult to distinguish how much of the subsidy is due to a deliberate willingness to assist the other socialist countries, and how much is the result of a particular (and unpredictable) trend of international prices and of rigid procedures in the CMEA rules. It is only in the former case that it would be possible to speak of negative dependence. It is certainly true that the Soviet Union has forgone potential gains, but the extension of "aid" might not have been always deliberate. When judging Soviet-CMEA trade one should consider not only the price aspect, but also the commitment aspect, and a dichotomy exists between the two. The nature itself of planned trade flows requires the pre-determination of a minimum amount of tradables; transactions are defined so as to "clear" in planned terms, and transactions above plan are cleared using hard-currency payments, countertrade, etc. But prices, linked with world market prices, are relatively autonomous from planned transactions. On the one hand, the loss of opportunity may be considered the cost of integration (partly offset by the CMEA countries contributing to the development of the Soviet raw materials base), because of a price formula which, with the benefit of hindsight, turned out to be disadvantageous for the Soviet Union. In the event of the CMEA price becoming higher than WMP at official exchange rates - and this is what has apparently been happening since 1983 - will Soviet trade partners buy in the spot markets or will they still be glad to pay in goods (often soft) instead of dollars for Soviet oil?.

On the other hand, a commitment by the Soviet Union towards the maintenance of stability within the bloc is undeniable. Even though the Soviet response to the Polish crisis of the early 1980s has undermined interpretations like the "umbrella theory", the prominent size, the military power and the ideological leadership of the USSR within the bloc and the fear of economically-induced political instability might have led to the deliberate transfer of resources (especially energy) towards the EE6 170. What is perhaps controversial is the extent of the deliberate transfer as opposed to the part due to automatic mechanisms.

Finally, the estimation of imports and exports at WMPs does not take into account Western import-intensity of exports from the CMEA to the USSR. Eastern European literature tends to underline that the realization of major investment projects, particularly those related to energy, is highly Western import-intensive. In this respect, and with respect to the question of CMEA manufactures being of an inferior quality, the use of WMPs for the evaluation of foreign trade flows is questionable. The use of this category of prices means to draw a comparison in terms of world standards (i.e. best or most efficient producer), but perhaps it would be better to look at it in terms of domestic costs, or, at least, in terms of the prices

---

170. In a recent article in Literaturnaya Gazeta, V. Karavayev states that "the USSR provided them (i.e. EE6) with the necessary economic assistance in a wide variety of forms, up to and including the extension of hard-currency loans, postponement of payments of their debts, additional deliveries of energy resources and so on". Translated in CDSP, XXXIX(44):12-16, 1987.

prevailing in intra-CMEA trade, even though that is not so easy to estimate.

6. TOWARDS A REFORM OF THE FOREIGN TRADE SYSTEM.

As we have seen in the previous pages, at the end of the 1970s and the early 1980s the Soviet Union found itself almost completely isolated from an increasingly interdependent world economy, in a situation of domestic economic stagnation and political instability. The new leadership inherited a structure that posed serious constraints on trade expansion. Apparently Gorbachev's radikalnaya reforma foresees a new role for foreign trade, and the new set of measures introduced in 1987 bear witness to the increasing concern of Soviet policy-makers with regard to this issue 171.

The aim of this chapter is that of discussing this rationalization of the foreign trade sector, in the light of the more general evolution of Soviet trade during the last quinquennium. In particular I would like to try to assess the possible consequences of the new measures and their relationship to domestic economic activity. In fact, if the attempt to reform the foreign trade sector is to succeed, a greater involvement of the USSR on the international market

---

171. Foreign trade, however, is one of the sector where long-term strategies have been disclosed with great difficulty in the past. As yet, the long-term strategy has not been completely defined, and even more importantly, a reform of foreign trade is not feasible without a fundamental re-organization of the domestic sector, and in particular without a revision of the mechanism for determining prices.

can be foreseen: is the degree of dependence of the Soviet economy also going to increase?

After briefly reviewing the causes and consequences of the deterioration of Soviet trade performance, this chapter analyses the main characteristics of the recent measures of reorganization, attempting to put them in perspective.

6.1. Soviet trade in the 1980s: the crisis mature.

The phase of stagnation in the 1980s was determined by several factors: the decline of energy products price, dissatisfaction with Western imported technology, the further deterioration of the international political climate, with the increasing use of sanctions and embargoes by Western countries.

The marked deterioration of the terms of trade that has taken place since 1985 can be traced back to the joint effect of the reduction of the oil price and the divergent trends of exchange rates on the international markets. Taking into account the volume of sales in 1985, it has been estimated that a one dollar reduction in the oil price represented hard-currency losses of 500 million dollars a year for the Soviet Union. Assuming an average price of 15 dollars per barrel during 1986 172, we can estimate a reduction of Soviet hard-currency oil revenues of between 4

---

172. The price of Ural crude declined from 27 dollars at the end of 1985 to around 11 dollars in the first half of 1986, and then started to grow again.

and 6 billion dollars 173. The price of exported gas, generally linked to the price of crude oil has undergone a similar reduction, thus contributing to a further reduction in Soviet hard-currency revenues 174. The oil price reduction has been accompanied by a depreciation of the dollar and instability on the international money market. Soviet export to the non-socialist partners are mostly priced in terms of dollars, while imports are denominated in European currencies, which underwent the opposite process: this has meant a further burden for the Soviet economy. An indirect effect also has to be taken into account. The sales of arms to Third World countries went, as indicated in chapter 4, mainly to oil producing countries. The "inverse" oil-shock has led to a reduction of revenues for these countries too, thus influencing their capacity to acquire and pay military equipment.

Data for 1986 show that trade turnover at current prices with the non-socialist trade partners declined by nearly 8%, while increasing in real terms by 2%. Inside this aggregate the decline of trade with the Western Industrialized countries is even more marked (-23.5%); their share in nominal terms declines from 27% to 22% in 1986 and to 21.8% in 1987.

---

173. A calculation by Bethkenhagen, who assumes an annual average for 1986 of 14.10 $/barrel, gives similar results. Cf. table 21.

174. Bethkenhagen estimates a further reduction of 1 billion dollars, assuming that the natural gas dollar price dropped by about 20%. Bethkenhagen (1988).

Soviet adjustment has materialized in a mix of increased borrowing activity, domestic cuts of imports and increased energy shipment to the West.

According to Western estimates the last period has seen a strong increase of Soviet activity on the international markets: as reported in table 26, Soviet borrowing activity increased substantially in 1985, when the USSR raised circa 1,500 million dollars on the international markets 175. In 1986 it negotiated loans for 1.8 billion dollars, that is 22% more than 1985, while borrowing activity appears to have declined somewhat in 1987. Even though the overall external exposure has deteriorated during 1985, debt never reached alarming proportions: debt service ratio remained well below 20% throughout the early 1980s, passed from 13% in 1984 to 18% in 1985 and peaked at 23% in 1986 176. In the meantime Soviet assets increased in Western Banks 177, and on a global basis the USSR turned out to be a net creditor.

The cut in imports is apparent even from Soviet official figures at current prices reported in table 27. The data show an absolute decline in 1986 and 1987, when the value of Soviet imports declined from 69.4 billion roubles

---

175. In general a greater interest in utilizing western financial markets and instruments to improve effectiveness of borrowing activity can be detected in the last few years. Cf. Brainard (1987).

176. McIntyre (1987b), p.474.

177. Fink and Mauler estimates that in 1986 Soviet assets were equivalent to 7 months hard-currency imports. Fink-Mauler (1987). Most assets, however, are considered highly illiquid.

in 1985 to respectively 62.6 billion in 1986 and 60.7 in 1985. The decline is more evident for imports from Western Industrialized countries: during the first half of the 1980s imports remained almost constant, with a dramatic decline in 1986 and 1987, when their value went back to that of 1980. The selective cut of imports has affected Western machinery orders in a random manner. According to Economist Intelligence Unit's estimates, after a period of stagnation between 1982 and 1984 machinery orders started to grow again in 1985, then dropped in 1986, rising again in 1987 178. This can be considered indirect evidence of the role that imported machinery has been assigned in Gorbachev's modernization program. The 12th Five Year Plan calls for an increase of domestic investment (4.3% p.a.) greater than the growth rate of NMP (3.7-4.1% p.a.): a rather rapid expansion is concentrated in 1986-87 (7-8% p.a.), followed by a slower rate in the remaining three years. Also the ambitious targets set for the MBMW sector appear difficult to realize without a contribution and a more efficient use of imported technology. It is not clear, however, to what extent the

---

178. Soviet machinery orders from the West.
($ mn.)

1980	2,600
1981	6,700
1982	2,300
1983	2,200
1984	788-1,100
1985	3,322-4,600
1986	2,226-3,100
1987	4,195 *

* January-October.

Economist Intelligence Unit Country Report - USSR, n.4, 1987, p18.

Soviet leaders want to rely on western technology. As already noted in chapter 3, on several occasions they have shown dissatisfaction with Western imported equipment and have pointed to CMEA sources as valid alternatives.

The Soviet Union responded to lowering world market prices with a substantial increase in the volume of energy products, particularly oil and gas, shipped to western industrialized countries. According to Bethkenhagen, oil and gas exports to the West increased respectively by 15% and 20% in 1986 179. The increase was insufficient to compensate for the drop in prices and the share of these products in total exports to the OECD area declined steadily since 1983, from over 78% in 1983 to nearly 60% in 1986 (cf. table 21).

6.2. Perestroyka and the foreign trade sector.

Two Decrees of August 1986, published in what appears to be their complete form only in January 1987, have introduced new norms concerning foreign trade 180. On the whole, they can be interpreted as reorganization measures aimed at establishing more direct links between Soviet enterprises and their foreign customers or suppliers, which do not, however, threaten the state foreign trade monopoly.

---

179. Bethkenhagen (1988), p.12.

180. O merakh po sovershenstvovanyo (1987) [a] and [b]. An incomplete version was published in Pravda, September 24th, 1986: O merakh (1986).

These norms have been integrated by a decree of October 1987 181, which further clarify the extent of the reform of the foreign trade sector. There are two main novelties:

i) since 1st January 1987 twenty Ministries and around seventy associations and enterprises have had the right to import and export without a preliminary authorization by the Ministry of Foreign Trade;

ii) the possibility has been granted to enterprises to develop forms of collaboration with other enterprises, including the possibility to create joint ventures (sovmestnye predprivatiya).

The experience of a direct access to foreign markets is not new to socialist countries. Enterprises in Hungary and Poland, for instance, have access to foreign markets without the intermediation of the foreign trade organizations (FTO) or the Ministry, but the amount of imports and exports are still determined by the planners and included in the various plans. This has obviously meant a reduction in the bureaucratic control over the process, but has not meant a complete decentralization of the decision-making process. The Soviet "reform" seems to take into account such experience, even though it has some original features, perhaps due to the marginal role that foreign trade has played so far in the Soviet economy. Let us look more closely at the content of these documents.

---

181. O dopolnitel'nykh (1987).

a. The administrative reorganization.

The new measures envisage the creation of a State Commission for Foreign Trade (Gosudarstvennaya Vneshneekonomicheskaya Kommissiia, GKES) a new body which should assume many of the tasks previously under the aegis of the Ministry of Foreign trade. The GKES is a body directly emanating from the Council of Ministers, constituted in order to coordinate the activities of the Ministry of Foreign Trade, the State Committee for Foreign Trade, the State Committee for Foreign Tourism and all Ministries and Departments which deal with this particular sector. The Commission should exercise also supervisory functions, verify the plan, and carry out research into new forms of planning, incentives and management of foreign trade. It is composed of fifteen members: the President, who holds the rank of vice-Prime Minister, the President of the State Committee for Science and Technology (vice-President of the Commission), the President of the Economic-Scientific Commission 182, the Minister of Foreign Trade, the President of the State Committee for Foreign Trade, the Minister of Finance of the USSR, the first vice-President of Gosplan, the first vice-President of Gossnab, the vice-Minister of Foreign Affairs, the first deputy-directors of permanent organs of the Council of Ministers, the deputy-Prime Minister of the USSR - permanent representative with the

---

182. A new body created for "studying and formulating proposals on important problems".

CMEA, who supervises all technical-scientific problems with these countries and holds the office of Vice-President of the Commission.

The redefinition of the role of the Foreign Trade Ministry is not limited to the loss of its prerogative in the supervision and coordination of foreign trade flows. Some associations are no longer under the control of the Ministry and can operate directly (neposredstvenno) on the world market. The enterprises more involved are those concerning trade in machinery, while raw materials, energy, foodstuffs and consumer goods remain under the control of the Ministry. Around 26% of imports and 14% of exports, and particularly 65% of machinery exports, are no longer directly controlled by the Ministry 183. The latter, however, still determines import and export plans, controls information concerning foreign trade, checks quantity and quality of traded goods.

The associations that have the right to trade directly with foreign organizations should solve autonomously all problems concerning productive and scientific-technological cooperation, since they have the right to sign contracts for the production of goods and supply of services 184. The results obtained on world markets should be considered as

---

183. Sovershenstvovanie (1987). It is impossible to calculate what percentage they represent in the NMP, due to the difficulty in estimating import and export flows in domestic prices.

184. On the 12th of January TASS announced the creation of an Institute for Foreign Trade Relations, under the direction of Prof. Igor Faminski, which should give technical and legal assistance to the exporting enterprises. Financial Times, 13/1/1987, p.5.

part of their activity and should contribute directly to the incentive fund. Starting in 1987, tasks concerning valuta transactions have to be inserted into the enterprise plan as well as tasks for the development of international cooperation. The evaluation of the performance should take place according to factual contractual prices (fakticheskikh kontraktnyikh tsen) converted into Soviet roubles at an exchange rate that should "stimulate the improvement of export efficiency, of technological level and quality of production in connection with the requirements of the world market, and in order to allow cuts of non-rational imports" 185.

A fund in convertible currency has to be created by the enterprises in order to "autonomously operate on foreign markets" , which should finance import and export operations. Such a fund will be created from contributions from sales and joint operations. The Ministries, Departments and Republican Ministries can retain up to a maximum of 10% of the total; the remaining part cannot be taxed any further or be subject to limitations. From the contributions an analogous fund is created for the Ministries and used for the development of exports. The enterprises also have access to credits from the Central Bank, but such credits have to be repaid within four years. Finally, the Decrees envisage greater responsibility in the enterprises' financial management, transferring them to a regime of full khozrachet and self-financing. For the first time in the history of Soviet enterprise, if plan targets for exports are not

---

185. O merakh (1987) [a], art. 20.

fulfilled, the enterprise has to compensate the loss by making withdrawals from the convertible currency fund.

b. Joint ventures.

The Decrees envisage the creation on Soviet territory of joint-ventures, organized on a bilateral or multilateral basis 186. Through the organization of such undertakings, especially in the case of collaboration with developed countries, the aim is pursued of "satisfying more completely the needs of the country for a number of industrial products, raw materials and foodstuffs, attracting towards the national economy advanced techniques and technologies, managerial expertise, material and financial resources, developing the export potential of the country and reducing non-rational imports" 187.

More schematically the creation of these enterprises should be based on the following propositions. The capital share under Soviet control cannot be less than 51%, the enterprises are legal entities according to Soviet norms and must undertake their activity according to Soviet economic principles, on full khozrachet and self-financing. In particular all the expenses in convertible currency, including the distribution of earnings and any other amount for the foreign partners and specialists, must come from sales on foreign markets. The enterprise works out

---

186 O poryadke (1987) [c] and [d].

187 O poryadke (1987) [d], p.2.

autonomous programmes concerning its economic activity and the State organs do not assign compulsory plan targets. The Soviet quota in participation is valued in roubles at contractual prices, determined taking into account world prices. The foreign share is valued in the same way and converted into roubles at the official exchange rate. The memorandum of association approved by all partners should contain the norms and objectives of the enterprise, such as capital stock, localization, structure of management, and both the president of the board of directors and the general manager of the enterprise must be Soviet citizens. Part of the profits is devoted to the creation of a reserve fund necessary for the functioning of the joint enterprise (up to a maximum of 25% of capital stock). The remaining part, after all compulsory transfers, is taxed (30%). Such a tax is not due during the first two years of activity and it can in any case be reduced by the Ministry of Finance. The earnings of the foreign partner can be transferred abroad, after a tax of 20% 188. Workers are recruited mainly from Soviet citizens, but foreign specialists may be employed.

c. The October 1987 decree.

The decree published in October 1987 takes into account some of the criticisms raised against the measures already

---

188. In the case of bilateral agreement between the Soviet Union and another state the amount may be redefined.

introduced and attempts to clarify some of the obscure points of the preceding documents.

The issue of major interest concerns the possibility of inter-enterprise credit. The new rules states that: "in order to develop the socialist entrepreneurial spirit of association, enterprises and organizations and to develop their economic interdependence, it will be possible for them and for the ministries and departments of the USSR to combine the means in their foreign currency fund, to transfer these to other enterprises, ministries, and banks on mutually advantageous conditions, including the payment of an appropriate interest, and also to invest these funds abroad with the agreement of ministries, and department" 189. The percentage of foreign currency that the enterprise may retain, in the currency in which it is earned, varies according to products, and it is higher for manufactured goods.

The decree introduces also some adjustments on the normative concerning joint-ventures. It envisages a certain decentralization in the decision-making process, allowing Ministry, Departments and Union Republic Council Ministers to authorize the creation of these enterprises. The joint ventures are allowed to choose the type of currency used, either convertible currency or roubles, and to price goods and services separately: hard-currency for exports and roubles for the domestic market. The tax free period for profit begins from the moment the enterprise starts to make

---

189. O dopolnitel'nykh (1987). The fund, already envisaged in the previous decrees, is created by a retention of foreign currency at enterprise level.

profits and not from the moment in which the joint venture is set up. Finally, the closer collaboration with CMEA partners is emphasized and the passage to a system of wholesale trade within the CMEA is announced, starting in 1989.

d. Limits of the proposals.

A careful analysis of the text reveals serious limitations to the proposals.

The monopoly of foreign trade remains substantially untouched. One of the decrees expressly states that it "is the conservation and strengthening of the monopoly of foreign trade" that "calls for the widening of the rights and the strengthening of the responsibility of Ministries, Departments and associations" 190 and that "all this will be carried out in full accordance with the principle of the state foreign trade monopoly" 191.

The composition of the GKES seems to indicate scientific-technological priorities in the matters it deals with, reflecting the importance of trade with CMEA countries. However, it is rather surprising that the main representatives of what should be subordinate organs are all members of the commission with decision-making powers.

The associations have the right to create direct links with foreign partners, but allocation of resources still

---

190. O merakh (1987) [a], p.3.

191. O merakh (1987).

mostly depends on centralized decisions made by Gossnab and Gosplan, i.e. the decentralized decision-making process (trade) is still tightly under the control of central planners (allocation of domestic resources).

A question left open by the norms is how the gap between export and import is to be financed. The possibility of access to inter-enterprises credit is a possible solution, as well as the concession of grants or loans from the central authorities.

Inter-enterprise credits would probably encourage a more efficient use of the funds, eliminating the dispersion of hard-currency in very small amounts. The total amount available is not negligible; according to the Finance Ministry B.I.Gostev, more than 3 billion roubles 192. Since the currency retained is in the currency earned, this figures should include both hard-currency and transferable roubles. A very rough indicator of the dimension of convertible currency involved would suggest something of the order of 1 billion roubles, i.e. 5-6% of imports from non-socialist countries in 1986 193.

However, presumably since 1968 the right has been granted to enterprises to retain part of their convertible currency earnings, but in practice such a right has been exercised only at ministerial discretion. Furthermore, from the enterprise point of view, production for export is often

---

192. In his speech on the State Budget. Pravda, 20.10.87, p.2.

193. Calculated under the hypothesis that circa 1/3 of total Soviet trade is conducted in hard-currency.

perceived as "punitive" by managers. The problem of additional costs connected with production of items for an "unsheltered" market, is only partially solved by the introduction of the fund in convertible currency.

Access to credits from the Foreign Trade Bank and the transfer of any unused hard currency earnings to an account, may allow a "control by valuta", similar to the "control by the rouble" at domestic level.

The procedure for the registration of joint-ventures is rather cucumbersome 194. The law calls for a registration with the Ministry of Finance: a joint-venture will become a juridical entity from the moment of registration and information is published in the press. But this is in contrast with the normative introduced in October, which allows a more decentralized decision-making process. The number of registered joint-ventures is unclear. According to an article in the journal Vneshnyaya Torgovlya, 11 contracts had been registered by November 1987 195.

Finally Western businessman report a certain confusion in many sectors of foreign trade. Since it is not completely clear what is allowed under the new rules, most trade is taking place using various forms of counter trade 196.

---

194. First a proposition has to be advanced, then, if judged of interest, a project is elaborated, taking into account possible costs and benefits. Subsequently a letter of intent has to be signed and it is only at this moment that the actual process for setting up the enterprise starts.

195. Smirnov (1988), p.47. A study by A. Tirapolski identifies 14 of them. Cf. Le Courrier des Pays de l'Est, n.323, 1987, pp.27-60 and n.324, 1987, pp.38-40.

196. Cf. Business Eastern Europe, various issues.

6.3. Short term adjustment versus structural variations: a preliminary assessment.

The extent and the complexity of the proposed measures mean that we must wait a few more years to observe their application in practice before we can make a final judgment.

What has been attempted appears to be a model of management which tries to satisfy the dual aim of speeding up the process of growth at domestic level, and granting access to foreign markets with competitive products. The documents themselves make clear some of the reasons behind these decisions: the necessity to buy "machinery and equipment and materials of various kinds necessary in order to realize the technical re-equipping and the industrial restructuring", as well as to "raise the producers' self-interest for the creation of high quality products to be exported .." 197.

A more direct link of Ministries, departments, associations and enterprises with the foreign market may have beneficial effects on the Soviet economy. A greater exposure to (indirect) competition from abroad may raise the quality standards of domestic products too. The decentralized system of orders may alleviate bottlenecks at enterprise level and possibly favour assimilation of

---

197. Ekonomicheskaya Gazeta, 40, 1986, p.10.

imported technology responding precisely to the needs of the enterprise and not imposed on it. Quality complaints have already been registered by Western suppliers as a result of more strict controls by end-users, more directly responsible for the product purchase 198.

The proposal to create joint ventures with Western industrialized countries can be interpreted as an attempt to solve two of the main problems that have affected the Soviet economy in recent years. On the one hand they should stimulate the acquisition and assimilation of foreign advanced technology, on the other, open up Western markets to Soviet manufactured goods. In particular, since the assimilation of advanced technology has represented the main obstacle to making efficient use of the technology imported during the 1970s, the direct involvement of Western enterprises may offer a solution. However the way in which joint enterprises are to be financed is interpreted in a completely different way by Soviet and Western partners. While Soviet policy-makers look at the possibility to export towards developed countries, Western enterprises would like to link profits in convertible currency to the volume of imports "substituted" by domestic production. In other words, the main interest of Western enterprises is the enormous potential of the Soviet domestic market, much more than by the export, and then competition on the world market, of manufactured goods produced at low costs. From the Soviet view point, as noted by McIntyre, further

---

198. Cf. Business Eastern Europe, Nov. 30, 1987, p.381 and Eastern European Markets 7(24), 1987, p.14.

advantages may be found in the possibility of access to Western markets via Western firms, on the quality control based on Western standards, as well as on automatic update of product lines and technology transfer at no (or low) hard-currency costs 199.

Summing up, the new measures seem to suggest a rationalization of the kind already undertaken by other socialist countries; such a process will obviously increase the number of enterprises authorized to sign contracts with foreign partners, and consequently, will involve some decentralization of the decision-making process. But many of the prerogatives of central planners, still capable of exercising direct and indirect control on the number of enterprises that can operate on foreign markets will remain substantially unchanged.

Increasing importance is attributed to the question of rouble convertibility. In a number of speeches and declarations the Soviet leadership has spelled out clearly the intention to introduce convertibility at first within the CMEA and then on a wider scale 200. However, the introduction of any kind of external convertibility is meaningless, in so far as the rouble is domestically inconvertible, i.e. a document, a plan allocation is a

---

199. McIntyre (1987b), pp.500-501.

200. In his speech at the 43rd Session of CMEA, N. Ryzhkov declared " We support the accord of the majority of countries on the introduction of the mutual convertibility of national currencies and the transferable rouble for servicing direct production links, joint economic activity and scientific and technological co-operation". BBC Summary of World Broadcast EE/8699, 15.10.87, p.6

necessary pre-condition for buying goods.

Finally, the refusal even to discuss the foreign trade monopoly could represent an insurmountable obstacle to the participation in international organizations, GATT above all. There is a formal contradiction between taking part in an agreement that should attempt to reduce tariffs and harmonize commercial policy , and the existence of a single, powerful decision-making body that might still be able to impose non-tariff barriers, simply imposing import targets on enterprises.

If the real strategy of the new leadership is towards growing participation in the world economy, some of the long-standing characteristics of the Soviet system have to be given up. It has to be recognized that a real opening-up to foreign markets, especially those of the non-socialist area, would involve an increase in dependence of the Soviet economy on its foreign trade sector.

APPENDIX B. MAIN MEASURES CONCERNING SOVIET FOREIGN TRADE.

a) O merakh po sovershenstvovaniyu upravleniya vneshneekonomicheskimi svyazyami Ekonomicheskaya Gazeta, n.4, January, 1987, pp.3-4. (Postanovlenie).

b) O merakh po sovershenstvovanyu upravleniya ekonomicheskim i nauchno-technicheskim sotrudnichestvom s sotsialisticheskimi stranami Ekonomicheskaya Gazeta, n.4, January, 1987, pp.5-6.(Postanovlenie).

c) O poryadke sozdaniya na territorii SSSR i deyatel'nosti sovmestnyikh predpriyatii, mezhdunarodnyikh ob'edinenii i organizatsii SSSR i drugikh stran-chlenov SEV Ekonomicheskaya Gazeta, n. 6, February, 1987. (Polozhenie).

d) O poryadke sozdaniya na territorii SSSR i deyatel'nosti sovmestnyikh predpriyatii s uchastiem sovetskikh organizatsii i firm kapitalisticheskikh i razvivayushchikhsya stran Ekonomicheskaya Gazeta, n. 6, February, 1987. (Polozhenie).

e) O Gosudarstvennom predpriyatii (ob'edinenii) Ekonomicheskaya Gazeta, n.8, February, 1987, p.4-9. (Proyekt zakona - esp.art. 19: Vneshneekonomicheskaya deyatel'nost') and VTSSSR, 8, 1987 (Zakon).

f) Poryadok osushchestvleniya ob'edineniyami, predpriyatiyami i organizatsiyami SSSR pryamykh proizvodstvennykh i nauchno-tekhnicheskikh svyazey s predpriyatiyami i organizatsiyami drugikh stran-chlenov SEV Ekonomicheskaya Gazeta, n.9, February, 1987, p.23 (Normativnyi dokument).

g) O vsesoyuznoy khozraschetnoy vneshnetorgovoy organizatsii (ob'edinenii) ministerstva, vedomstva Ekonomicheskaya Gazeta, n.10, March, 1987, p.23. (Polozhenie).

h) O khozraschetnoy vneshnetorgovoi nauchno-proizvodstvennogo, proizvodstvennogo ob'edineniya, predpriyatiya, organizatsii Ekonomicheskaya Gazeta, n.11, March, 1987, p.23. (Polozhenie).

i) O dopolnitel'nykh merakh po sovershenstvovaniyu vneshneekonomicheskoy deyatel'nosti v novykh usloviyakh khozyaystvovaniya Ekonomicheskaya Gazeta, 41, 1987, pp.18-19. (Postanovlenie).

7. FINDINGS AND LIMITATIONS OF THE RESEARCH.

The attempt of the research has been to show that no substantial changes of the overall degree of dependence of the Soviet economy on its foreign trade sector has taken place during the 1970s, a period characterized by growing trade participation ratios and commercial relations with foreign countries.

The main argument advanced has been that aggregate indicators (such as import and export over GNP ratios) are poor indicators of dependence, because, apart from methodological shortcomings (discussed in chapter 3), size, natural endowment and geographical distribution of trade give the Soviet economy some "margin of manoeuvre" and reduce risks involved with trade.

In particular, it has been suggested that the capacity of the Soviet economic system on the whole to operate substitution avoiding serious dislocation of economic resources, that is its capacity to minimize trade dependence, has to be judged not only with reference to replacement of domestic with foreign sources of supply, but also among the foreign alternatives available, i.e. intra-CMEA or extra-CMEA sources. In this respect the sensitivity of the country is certainly determined by its involvement in the international commodity and factor market, but also by the "reliability" of its trade partners, by the domestic economic situation, as well as the availability of policy-

makers to introduce consistent and effective policy responses.

From the preceding pages it also emerges that the Soviet policy-makers are probably aware of the difficulties connected with an autarkic strategy of development, and that on various occasions in Soviet history increasing attention has been devoted to foreign economic relations. However, the strategy of development followed has been substantially based on domestic factors. The level of participation in international trade is extremely low by any standard and in particular if data concerning trade with Western developed countries are taken into account. Nominal values indicate a westward orientation in the second half of the 1970s, but it has been shown that real quantities traded did not increase significantly, especially exports.

The opening process may thus be judged a medium term expedient, more than a phenomenon stemming from a dynamic strategy. The potential for a growth of export to the West is severely limited: barriers and impediments to trade are a major obstacle to the development of stable commercial relations between the USSR and its Western partners, but expansion is in any case constrained, especially for manufactured goods, by the Soviet inability to satisfy Western demand for production flexibility, quality and servicing. Furthermore, on the Soviet side, the relative merits of Western technology imports over domestic, or CMEA sources, are not easily identifiable.

TABLES AND GRAPHS.

Table 1. Soviet exports and imports in foreign trade and domestic prices.

	EXPORTS			IMPORTS		
	FTP	DP	%NMP	FTP	DP	%NMP
1955	3084	2960	3.00	2755	5344	5.43
1960	5007	5307	3.67	5066	12000	8.28
1965	7357	8387	4.34	7253	15740	8.14
1970	11520	18300	6.31	10559	24919	8.60
1972	12734	17819	5.68	13309	31375	10.01
1975	24034	22900	6.30	26671	54400	14.97
1980	49634	31800	6.88	44463	92300	19.98

Source: Treml (1983 b), p. 37.

Table 2. Soviet trade participation ratios in 1980. (% of GNP).

	WMPs	Dom.Pr.
IMPORTS	4.1	15.0
EXPORTS	6.0	5.2

Source: Vanous (1982), p.2.

Table 3. Average annual growth rates of Soviet total trade at current prices, 1961-85. (In percentage *)

	EXPORTS	IMPORTS
1961-65	6.4	6.7
1966-70	7.7	8.2
1971-75	14.1	18.9
1976-80	12.1	9.1
1981-85	4.9	5.6

Note:

* Average annual growth in percentage are calculated as:

$$r = \left(Vn/Vo\right)^{1/t} - 1 \quad * 100$$

where
Vn = value last year of the period
Vo = value first year of the period
t = number of years in the period condidered

Source: VTSSSR, variuos issues.

Table 4. Share of the USSR in world trade in percentage.

	EXPORTS	IMPORTS
1970	4.1	3.6
1975	3.8	4.1
1980	3.8	3.3
1985	4.5	-

Source: UN Monthly Bulletin of Statistics, various issues.

Table 5. USSR total trade at constant prices, 1960-87.

	EXPORTS		IMPORTS	
	$ 1975.	1970=100	$ 1975	1970=100
1960	9770	42.28	9175	46.28
1965	15100	65.35	13307	67.12
1970	23107	100.00	19826	100.00
1971	25055	108.43	21080	106.33
1972	25237	109.22	24486	123.50
1973	30589	132.38	26725	134.80
1974	33215	143.74	28139	141.93
1975	33282	144.03	36940	186.32
1976	35526	153.75	36963	186.44
1977	39746	172.01	37528	189.29
1978	40746	176.34	41884	211.26
1979	43137	186.68	43175	217.77
1980	42676	184.69	46872	236.42
1981	42781	185.14	51034	257.41
1982	44636	193.17	52420	264.40
1983	46730	202.23	54931	277.07
1984	48252	208.82	57155	288.28
1985	46322	200.47	60013	302.71
1986	48638	210.49	57012	287.56
1987 *	50583	218.91	55872	281.81

* = preliminary estimates.

Source: UN-ECE (1985) p. 431, and UN-ECE (1988), p. 201.

TABLE 6. Planned and realized growth of NMP and trade, 1966-85.

	PLANNED			REALIZED		
	NMP	TRADE	EX-ANTE e	NMP	TRADE	EX-POST e
1966-70	6.80	8.60	1.26	7.80	8.50	1.10
1971-75	6.70	9.80	1.46	5.70	5.00	0.88
1976-80	4.70	6.00	1.27	4.20	5.70	1.36
1981-85	3.40	4.10	1.20	3.10	4.40	1.42

Source: Official plan targets and reports.

From: Narkhoz, various issues and Ek.Gaz., various issues.

Table 7. Annual growth rates of NMP *, exports and imports.

	NMP *	EXP	IMP	ELASTICITIES EXP	IMP
1971	6.0	8.4	6.3	1.41	1.05
1972	3.8	0.7	16.2	0.19	4.28
1973	9.1	21.2	9.1	2.33	1.01
1974	5.0	8.6	5.3	1.72	1.06
1975	4.8	0.2	31.3	0.04	6.57
1976	5.3	6.7	0.1	1.27	0.01
1977	5.0	11.9	1.5	2.36	0.30
1978	4.8	2.5	11.6	0.52	2.42
1979	2.6	5.9	3.1	2.24	1.18
1980	3.8	-1.1	8.6	-0.28	2.24
1981	3.1	0.2	8.9	0.08	2.89
1982	4.2	4.3	2.7	1.04	0.65
1983	4.0	4.7	4.8	1.17	1.20
1984	2.7	3.3	4.0	1.19	1.47
1970-84	4.46	5.17	7.68	1.16	1.72

Notes:
* Proyzvedennyi Natsionalnyi Dokhod v sopostavimykh tsenakh 1973 g.

Per annum growth rates = b coefficient in the regression

$$\text{Log } (x) = a + b \text{ (time)}$$

where:

x = NMP, exports, imports;
time = 1970, ..., 1984.

Source: VTSSR, various issues and Narkhoz, various issues.

EXPORT

year	TOTAL	SOC.	CMEA	NON-SOC.	DCs	LDCs
1960	41.9	45.1	40.6	31.4		
1961	46.1	N.A.	N.A.	N.A.		
1962	53.6	N.A.	N.A.	N.A.		
1963	55.7	54.5	54.4	53.3		
1964	58.2	57.7	58.8	54.3		
1965	64.1	61.7	62.5	63.7		
1966	72.9	68.5	69.0	75.9		
1967	79.2	73.9	75.5	83.5		
1968	87.6	83.8	84.4	87.9		
1969	96.8	89.7	90.5	103.9		
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	103.6	103.8	104.1	96.3		
1972	104.5	102.6	105.1	101.5		
1973	116.8	110.6	112.9	121.2		
1974	126.0	128.2	127.8	122.5		
1975	127.0	129.5	129.5	124.5	126.4	120.5
1976	137.7	135.9	135.4	140.3	149.2	126.9
1977	152.0	146.4	146.6	164.2	156.3	170.5
1978	157.0	153.6	153.7	165.3	153.4	180.8
1979	158.0	158.5	157.8	159.9	148.0	175.5
1980	160.5	164.8	163.5	157.5	145.0	174.8
1981	161.1	163.0	163.9	162.2	140.0	200.5
1982	171.3	159.1	157.4	192.2		
1983	177.6	160.4	157.4	204.7		
1984	181.4	166.9	162.5	204.7		
1985	173.5	168.5	164.2	182.7		

IMPORT

year	TOTAL	SOC.	CMEA	NON-SOC.	DCs	LDCs
1960	52.1	60.1	47.8	39.6		
1961	53.7	N.A.	N.A.	N.A.		
1962	60.0	N.A.	N.A.	N.A.		
1963	65.7	72.1	67.9	55.4		
1964	68.3	74.5	70.8	57.7		
1965	71.9	78.1	74.6	62.5		
1966	71.4	74.5	72.2	65.7		
1967	77.7	84.1	84.7	67.2		
1968	86.5	90.7	93.8	80.7		
1969	93.3	93.1	96.1	93.8		
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	104.3	103.7	104.5	105.4		
1972	119.4	117.4	117.1	128.6		
1973	134.7	123.9	124.4	164.2		
1974	140.2	133.0	129.5	159.9		
1975	164.0	144.2	140.2	207.7	220.2	159.6
1976	175.1	150.0	146.3	228.7	253.9	147.9
1977	176.5	163.6	160.8	209.7	230.8	140.1
1978	199.7	189.5	186.5	231.1	262.4	134.4
1979	201.7	187.2	184.4	240.6	277.9	132.2
1980	216.4	193.6	185.6	276.9	298.1	176.4
1981	234.1	203.1	190.7	311.2	312.5	236.0
1982	255.4	229.2	217.6	330.5		
1983	266.9	236.4	2228.9	345.5		
1984	278.3	255.3	243.0	345.5		
1985	289.2	272.8	258.3	345.4		

Source: Cf. Appendix A.

TABLE 9. Shares of trade partners in percentage.

year	BULGARIA	CSSR	GDR	HUNGARY	POLAND	ROMANIA	EAST.EUR.	DCs.	LDCs
				EXPORTS					
1960	5.9	11.3	18.9	5.6	8.8	4.7	55.3	18.2	25.6
1965	7.2	11.3	16.7	6.7	8.9	4.9	55.7	18.3	26.1
1970	7.3	9.4	15.1	6.6	10.5	3.9	52.8	18.7	28.5
1975	8.6	8.4	12.4	6.9	10.2	2.9	49.4	25.6	25.1
1980	7.3	7.3	9.8	6.1	8.9	2.7	42.2	31.9	25.9
1985	8.9	9.4	10.5	6.3	8.9	2.7	46.8	25.6	13.2
1987	9.2	9.9	11.2	6.7	9.6	3.7	50.4	20.8	14.3
				IMPORTS					
1960	5.3	11.6	16.5	4.4	6.9	4.9	49.7	19.8	30.5
1965	7.6	12.8	15.9	6.4	9.7	5.5	57.9	20.1	21.8
1970	9.2	10.5	14.7	6.8	10.7	4.5	56.5	24.1	19.4
1975	7.2	7.1	9.9	6.1	9.1	3.1	42.4	36.4	21.2
1980	7.7	7.9	9.7	6.2	8.1	3.2	42.9	35.4	21.7
1985	8.7	9.5	10.9	7.1	8.1	3.3	47.6	27.8	11.1
1987	10.8	11.4	11.7	8.4	10.4	3.9	56.5	22.8	7.8

Source: VTSSR, various issues.

TABLE 10. Commodity composition of Soviet exports and imports.

EXPORTS

	1	2	3	4	5	6	7	8	9
1913	0.3	3.5	2.8	1.2	10.9	8.9	54.7	4.7	12.7
1918	0.2	1.3	17.7	3.8	9.7	26.4	5.1	4.1	31.7
1925	0.2	11.6	7.9	0.3	8.3	7.9	41.0	4.2	18.6
1933	0.9	17.6	10.6	2.4	15.6	5.4	20.0	11.6	15.9
1938	5.0	8.9	3.9	4.0	20.3	4.3	29.5	7.9	16.2
1946	5.8	5.4	9.5	5.0	4.3	15.0	29.8	7.4	17.8
1950	11.8	3.9	11.3	4.3	3.1	11.2	20.6	4.9	26.6
1955	17.5	9.6	17.6	3.1	5.1	10.1	12.0	3.0	22.0
1960	20.5	16.2	20.4	3.5	5.5	6.4	13.1	2.9	10.7
1965	20.0	17.2	21.6	3.6	7.3	5.1	8.4	2.4	14.4
1970	21.5	15.6	19.8	4.2	6.5	3.4	8.4	2.7	18.8
1975	18.7	31.4	14.3	3.5	5.7	2.9	4.8	3.1	15.6
1980	15.8	46.9	8.8	3.3	4.1	1.9	1.9	2.5	14.8
1985	13.6	52.8	7.5	3.9	3.0	1.3	1.5	2.0	14.4

IMPORTS

	1	2	3	4	5	6	7	8	9
1913	16.6	7.1	6.9	7.9	3.3	18.3	21.2	10.3	8.7
1918	5.0	0.3	13.4	2.4	1.7	2.0	14.8	58.9	1.5
1925	20.6	0.7	7.8	10.1	5.3	26.3	9.9	9.2	10.2
1933	43.0	0.1	28.1	2.7	0.3	10.4	8.2	1.7	5.5
1946	28.5	11.8	9.9	1.9	3.9	6.6	15.7	7.2	14.5
1950	21.5	11.8	15.0	6.9	3.8	7.7	17.5	7.4	8.4
1955	30.2	8.3	16.5	3.4	3.0	5.4	20.2	4.8	8.2
1960	29.8	4.2	16.8	6.0	1.9	6.5	12.1	17.2	5.5
1965	33.4	2.5	9.8	6.2	1.9	4.4	20.2	14.2	7.4
1970	35.1	2.0	10.5	5.6	2.2	4.8	15.0	18.3	6.2
1975	33.9	4.0	11.5	4.7	2.2	2.4	23.0	13.0	5.3
1980	33.9	3.0	10.8	5.3	2.0	2.2	24.2	12.2	6.4
1985	37.2	5.3	8.4	5.0	1.3	1.7	21.2	12.4	7.5

Legenda:

1 = MACHINERY, EQUIPMENT AND MEANS OF TRANSPORT.
2 = FUELS AND ELECTRICITY.
3 = ORES AND METALS.
4 = CHEMICALS.
5 = WOOD PRODUCTS.
6 = TEXTILES.
7 = FOODSTUFFS.
8 = CONSUMER GOODS.
9 = N.E.S.

Source: VTSSSR, various issues.

TABLE 11. Export and import structure at constant prices. (Million 1975 US $) (a).

year	(1)	(2)	(3)	(4)	(5)	(6)
			EXPORTS			
1960	2970	2391	3103	1090	217	9770
1965	3772	4499	4907	1355	367	15100
1970	7430	6510	6748	1894	525	23107
1971	7972	7581	6819	2087	596	25055
1972	8293	7479	7477	1321	668	25237
1973	10541	9572	8242	1453	782	30589
1974	11147	10247	8652	2264	906	33215
1975	11349	10450	8853	1598	1032	33282
1976	12247	12151	8947	1036	1146	35526
1977	14772	13224	9354	1215	1181	39746
1978	16046	13423	8947	923	1406	40746
1979	16445	15532	8848	1111	1200	43137
1980	15721	15266	9311	989	1389	42676
1981	16154	15326	9162	1066	1074	42781
1982	17510	16218	8746	935	1227	44636
1983	18012	17356	9134	984	1244	46730
1984	18578	17822	9448	1084	1320	48252
			IMPORTS			
1960	2996	458	3049	1223	1447	9175
1965	4974	529	3277	2805	1720	13307
1970	7551	702	5468	2894	3210	19826
1971	7600	994	5579	3212	3696	21080
1972	9118	1350	5613	4492	3914	24486
1973	10286	1485	6344	4797	3813	26725
1974	11137	1136	7312	4525	4029	28139
1975	14517	1441	7720	8496	4765	36940
1976	14804	1343	7689	8650	4478	36963
1977	16022	1277	7343	8189	4696	37528
1978	18902	1483	8012	8747	4740	41884
1979	18044	1235	8680	10358	4857	43175
1980	18267	954	9763	12234	5653	46872
1981	18632	1013	9928	14769	6691	51034
1982	21706	1398	10045	12436	6834	52420
1983	24623	1861	10447	11565	6435	54931
1984	24754	2220	10109	13220	6851	57155

(a) Sum of 1975 rouble values converted to US dollars at the 1975 official rouble/dollar exchange rate and 1975 dollar values.

(1) Machinery and equipment.
(2) Fuels and energy.
(3) Other production inputs.
(4) Food raw materials and products.
(5) Industrial consumer goods.
(6) Total.

Source: UN-ECE (1985), p.431.

TABLE 12. Soviet terms of trade.
(Total and by main region).

	TOTAL	NON-SOC.	SOC.
1960	99	92	101
1965	96	91	100
1970	100	100	100
1971	99	102	99
1972	99	99	98
1973	95	92	98
1974	100	103	97
1975	107	104	109
1976	108	109	107
1977	112	111	112
1978	113	112	114
1979	120	122	117
1980	131	144	121
1981	138	152	127
1982	141	147	137
1983	143	145	141
1984	144	146	143
1985	145	144	146
1986	137	111	143
1987 *	132	112	136

* = preliminary.

source: author's calculation based on
UN-ECE (1985), p.431 and UN-ECE (1988), p.201.

Table 13. USSR Hard currency balance of payments on current account and debt to West, 1970-85 ($ mn).

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Trade balance (a)	-560	-317	-1388	-1735	-826	-6296	-5223	-2942	-3690	-2018	-2486	-4000	-524	132	235	-1810
exports (a)	2424	2776	2954	5009	7869	8280	10225	11863	13336	19417	23584	23778	26977	27829	26431	22943
imports	-2984	-3093	-4342	-6744	-8695	-14577	-15478	-14805	-17026	-21435	-26070	-27778	-27501	-27697	-26196	-24753
Net interest (b)	-80	-48	-60	-80	-103	-570	-724	-848	-881	-779	-710	-1300	-1500	-1300	-900	-1400
Arms sales	400	400	600	1600	1500	1500	1850	3220	3965	3855	4200	4200	5000	4700	4600	3500
Net services and transf.	500	355	327	743	917	760	911	1032	1028	1140	900	1000	1000	1000	1000	1000
Gold sales (c)	0	24	289	962	1178	725	1369	1618	2522	1490	1580	2700	1100	750	1300	3100
Current account balance	240	414	810	1490	2666	-3882	-3854	2080	2944	3668	3484	2600	5176	6582	6235	4390
Gross debt (d)	NA	1808	2408	3748	5175	10577	14707	15609	16373	18047	17861	20900	20000	20501	20303	24764
Net debt (d)	NA	582	555	1165	1654	7450	9969	11181	10393	9241	9289	12470	10000	9577	8960	13664

(a) Arms sales to LDCs and hard currency trade within CMEA are not included.
(b) On net debt/credit with the West only.
(c) Gold sales are treated as a current-account item. There is no doubt that they are used to play an equilibrating role in the balance of payments. On the other hand they are usually less than current production and it is likely that Soviet borrowing and Soviet ordering of capital goods for hard currency are influenced by the current account balance, including revenue from gold sales.
(d) With West only.

Source: Hanson (1985), pp.51-52.

Table 14. Gold sales in hard-currency, selected years. (Million dollars at current prices).

1960	200
1965	550
1970	0
1975	725
1980	1780
1983	750

Source: Kaser (1983), p.161.

Table 15. Terms of syndicated loans.

year	(a)	(b)
1976	1.03	5.00
1977	1.09	6.75
1978	0.73	8.50
1979	0.57	7.85
1980	NA	NA
1981	0.56	4.75
1982	0.62	5.25
1983	0.92	5.38
1984	0.63	6.50

1976-84:

Number of loans (*)	39
Amount (*)	9.5

(a) = annual weighted margin over LIBOR (%)
(b) = average maturity (years)
(*) = including International Investment Bank

Source: Euromoney, November 1984, p.18.

Table 16. Growth rates and elasticities of machinery and equipment imports with respect to investment in machinery, 1961-85. (Five-year averages of annual change in percentage)

	INV.(a)	IMP.TOT.(b)	ELAST.	IMP.SOC.(b)	ELAST.	IMP.NON-SOC.(b)	ELAST.
1961-65	6.20	11.10	1.79	11.80	1.90	10.10	1.63
1966-70	7.60	8.90	1.17	7.80	1.03	12.30	1.62
1971-75	8.80	14.40	1.64	11.70	1.33	21.00	2.39
1976-80	6.50	5.00	0.77	7.50	1.15	1.00	0.15
1981-84	4.70	7.40	1.57	8.40	1.79	5.90	1.26

Source:
(a) Narkhoz, various issues.
(b) ECE-UN (1986), p. 616.

Table 17. Crude oil production and export. Total and by main area.
(Million tonnes.)

YEAR	PRODUCTION		EXPORT TOTAL		CMEA-5		MDCs	
1960	147191	42.2	17825	26.7	6239	18.0	8199	35.4
1961	165304	47.4	23388	35.0	7029	20.3	11233	48.5
1962	185387	53.1	26279	39.3	8716	25.1	12110	52.3
1963	205100	58.8	30243	45.3	10659	30.7	13664	59.0
1964	222552	63.8	36691	54.9	13956	40.2	15875	68.6
1965	241732	69.3	43432	65.0	18292	52.7	16395	70.8
1966	263834	75.6	50314	75.3	20953	60.4	20292	87.7
1967	286593	82.2	54117	81.0	22645	65.2	24153	104.4
1968	307448	88.1	59216	88.7	27147	78.2	23923	103.4
1969	326009	93.5	63888	95.6	32284	93.0	22952	99.2
1970	348802	100.0	66795	100.0	34711	100.0	23145	100.0
1971	371776	106.6	74765	111.9	39886	114.9	25097	108.4
1972	393771	112.9	76172	114.0	44428	128.0	21949	94.8
1973	421387	120.8	85327	127.7	50824	146.4	24322	105.1
1974	450607	129.2	80558	120.6	54159	156.0	15766	68.1
1975	481766	138.1	93070	139.3	59302	170.8	21110	91.2
1976	509277	146.0	110790	165.9	63635	183.3	34017	147.0
1977	533799	153.0	122129	182.8	67629	194.8	40000	172.8
1978	557731	159.9	123445	184.8	68845	198.3	40300	174.1
1979	569671	163.3	124748	186.8	71048	204.7	35400	152.9
1980	584507	167.6	121056	181.2	72556	209.0	31400	135.7
1981	587820	168.5	119911	179.5	72411	208.6	30600	132.2
1982	591051	169.5	121820	182.4	66220	190.8	38300	165.5
1983	594643	170.5	132815	198.8	64315	185.3	48300	208.7
1984	590710	169.4	138275	207.0	64775	186.6	52500	226.8
1985	572500	164.1	120359	180.2	63159	182.0	37500	162.0

Table 18. Crude oil export as percentage of production.

YEAR	TOT/PROD.	CMEA/PROD.	MDCs/PROD
1960	12.11	4.24	5.57
1961	14.15	4.25	6.80
1962	14.18	4.70	6.53
1963	14.75	5.20	6.66
1964	16.49	6.27	7.13
1965	17.97	7.57	6.78
1966	19.07	7.94	7.69
1967	18.88	7.90	8.43
1968	19.26	8.83	7.78
1969	19.60	9.90	7.04
1970	19.15	9.95	6.64
1971	20.11	10.73	6.75
1972	19.34	11.28	5.57
1973	20.25	12.06	5.77
1974	17.88	12.02	3.50
1975	19.32	12.31	4.38
1976	21.75	12.50	6.68
1977	22.88	12.67	7.49
1978	22.13	12.34	7.23
1979	21.90	12.47	6.21
1980	20.71	12.41	5.37
1981	20.40	12.32	5.21
1982	20.61	11.20	6.48
1983	22.34	10.82	8.12
1984	23.41	10.97	8.89
1985	21.02	11.03	6.55
1960-85	20.14	10.71	6.55

Source: Table 17.

Table 19. Oil and gas export. Total and to western industrialized countries.
(Thousand barrels per day oil equivalent)

		EXPORT OF OIL *					EXPORT OF GAS			
YEAR	PRODUCTION	TOTAL	MDCS	MDCs/TOT	MDCs/PROD	PRODUCTION	TOTAL	MDCS	MDCs/TOT	MDCs/PROD
1960	2958.2	668.7	319.5	47.8	10.8	42221	242	0	0.0	0.0
1961	3322.6	829.3	396.3	47.8	11.9	54970	272	0	0.0	0.0
1962	3726.2	913.0	443.6	48.6	11.9	68525	300	0	0.0	0.0
1963	4122.9	1033.6	503.1	48.7	12.2	83723	301	0	0.0	0.0
1964	4473.7	1138.0	534.1	46.9	11.9	101184	295	0	0.0	0.0
1965	4859.6	1294.3	557.5	43.1	11.5	118981	392	0	0.0	0.0
1966	5304.5	1479.2	685.5	46.3	12.9	133236	828	0	0.0	0.0
1967	5763.7	1588.0	795.8	50.1	13.8	146734	1290	0	0.0	0.0
1968	6185.7	1731.9	826.3	47.7	13.4	157597	1729	142	8.2	0.1
1969	6571.2	1823.5	797.1	43.7	12.1	168798	2664	782	29.4	0.5
1970	7067.4	1923.1	835.5	43.4	11.8	184478	3300	956	29.0	0.5
1971	7549.8	2108.8	916.5	43.5	12.1	197948	4555	1428	31.4	0.7
1972	8019.2	2148.4	864.8	40.3	10.8	206324	5070	1633	32.2	0.8
1973	8592.7	2374.9	960.2	40.4	11.2	220248	6832	1975	28.9	0.9
1974	9192.0	2333.5	837.7	35.9	9.1	242827	14039	5484	39.1	2.3
1975	9830.2	2617.4	962.9	36.8	9.8	269588	19429	8042	41.4	3.0
1976	10409.8	2980.8	1205.9	40.5	11.6	299117	26105	12345	47.3	4.1
1977	10934.8	3230.8	1311.0	40.6	12.0	322463	31651	16300	51.5	5.1
1978	11452.2	3308.7	1349.5	40.8	11.8	346872	36278	20000	55.1	5.8
1979	11736.3	3239.0	1135.9	35.1	9.7	378935	47493	24600	51.8	6.5
1980	12093.4	3182.2	1076.2	33.8	8.9	405608	56229	25100	44.6	6.2
1981	12209.3	3215.2	1106.8	34.4	9.1	433609	59703	28500	47.7	6.6
1982	12284.7	3423.0	1429.1	41.8	11.6	466671	61067	27400	44.9	5.9
1983	12360.9	3682.3	1661.6	45.1	13.4	499277	61589	26600	43.2	5.3
1984	12288.7	3758.2	1713.1	45.6	13.9	547413	65652	28450	43.3	5.2
1985	11935.2	3256.1	1287.2	39.5	10.8	599230	73654	35500	48.2	5.9

Note: * crude oil, natural gas liquids and refined oil products.

Source: Calculated from: WEFA Energy Databank, 1986

Table 20. Gas production, export and apparent consumption.
(Thousand barrels per day oil equivalent).

YEAR	PRODUCTION	EXPORTS					APPARENT CONSUMPTION
		TOTAL	CMEA-5	OCPES	MDCS	LDCS	
1960	760.8	4.0	4.0	0.0	0.0	0.0	756.9
1961	990.2	4.5	4.5	0.0	0.0	0.0	985.8
1962	1183.2	4.9	4.9	0.0	0.0	0.0	1178.3
1963	1469.9	4.9	4.9	0.0	0.0	0.0	1464.9
1964	1776.2	4.8	4.8	0.0	0.0	0.0	1771.4
1965	2095.1	6.4	6.4	0.0	0.0	0.0	2088.6
1966	2379.1	13.6	13.6	0.0	0.0	0.0	2365.5
1967	2621.0	22.0	21.6	0.0	0.4	0.0	2602.6
1968	2827.9	29.7	26.4	0.0	2.8	0.4	2824.2
1969	3014.1	45.8	31.3	0.0	14.4	0.1	3003.4
1970	3265.7	57.0	38.8	0.0	18.0	0.1	3270.2
1971	3504.9	78.2	51.7	0.0	26.4	0.1	3567.4
1972	3700.6	87.1	56.8	0.0	30.4	0.0	3804.5
1973	3949.5	117.0	80.0	0.0	37.0	0.0	4030.0
1974	4355.4	235.4	141.0	0.2	94.2	0.0	4326.4
1975	4796.0	324.0	187.0	0.7	136.2	0.0	4686.6
1976	5319.0	433.1	225.9	0.6	206.6	0.0	5089.5
1977	5734.1	524.2	252.0	0.8	271.4	0.0	5414.0
1978	6169.5	599.6	265.2	2.7	331.8	0.0	5736.5
1979	6738.3	780.3	360.8	14.9	404.7	0.0	6069.1
1980	7191.5	924.4	482.0	28.4	414.0	0.0	6322.8
1981	7690.6	980.8	478.5	33.2	469.1	0.0	6747.1
1982	8277.9	1003.1	509.7	42.4	451.1	0.0	7316.6
1983	8856.3	1011.7	529.1	44.6	438.0	0.0	7886.5
1984	9710.2	1078.2	555.5	54.4	468.3	0.0	8675.5
1985	10629.3	1209.4	561.8	63.8	583.8	0.0	9463.5

Source: WEFA Energy Databank.

Table 21. Incomes from oil and natural gas exports to OECD countries.

year	oil (1) bill.TR	oil (1) bill.$	gas bill.TR	gas bill.$	% share of exports total OECD countries: oil	gas	total
1975	2.9	4.0	0.2	0.3	46.4	3.0	49.9
1980	9.4	14.4	1.8	2.8	58.1	11.4	69.5
1981	10.3	14.3	2.9	4.1	58.8	16.7	75.5
1982	12.1	16.7	2.7	3.8	63.6	14.4	78.0
1983	13.0	17.6	2.4	3.3	65.8	12.3	78.1
1984	13.6	16.7	3.1	3.8	63.2	14.5	77.8
1985	10.7	12.7	3.3	3.9	56.9	17.4	74.3
1986	5.6	7.9	2.6	3.7	42.2	19.9	62.1

(1) Oil and oil products.

Source: Bethkenhagen (1988), p.13.

Table 22. Indices of world market prices, Soviet export prices to CMEA and Soviet domestic wholesale prices. Soviet estimates - 1960-1976. (1970=100)

	Fuels, raw mat. & metals			Agricultural products			Machinery & Equipment		
year	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
1960	94	131	58	89	97	86	78	85	74
1966	94	101	60	101	100	93	89	100	76
1971	108	105	99	103	86	103	103	101	97
1972	111	110	99	121	107	104	112	108	106
1973	168	113	99	176	108	106	117	105	105
1974	243	119	86	216	111	107	128	116	117
1975	247	175	96	201	135	111	141	127	119
1976	258	177	96	203	148	109	148	145	122

Note:
(1) World market prices;
(2) Soviet export prices to CMEA;
(3) Soviet domestic wholesale prices.

Source: Mitrofanova (1978) p.103.

Table 23. Indices of Soviet net barter terms of trade vis-a-vis CMEA.

year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1970	100	100	100	100		100	99		100
1971	98	101	102	102		101.5	97		98.3
1972	101	105	101	99		102.1	96		102
1973	102	107	105	104		101.2	100		103.4
1974	102	104	114	103	100	104.9	102		103.3
1975	106	109	118	109	106	113.6	105	100	107.7
1976	109	114	118	114	109	117.5	108	104	110.7
1977	114		123	119	114	122.9	113	107	115.8
1978	113			121	117		112	108	117.8
1979				123	119		115	111	120.3
1980					121		117	115	122.1
1981					132		127	124	133.2
1982					147		142		147.8
1983									153.8

source:
(1) Hewett (1980) table 5.
(2) Tiraspolski (1978) table 9.
(3) Vanous (1981) table 15.
(4) Hanson (1981) table 4.
(5) Dietz (1984)
(6) Vanous (1979)
(7) Hewett (1984)
(8) Wolf (1983)
(9) UTSSR.

Table 24. Export of oil and non-oil products to CMEA.

year	total	oil	non-oil
1970	100	100	100
1971	104	115	120
1972	106	144	114
1973	114	161	127
1974	136	171	157
1975	151	184	170
1976	155	198	176
1977	167	206	199
1978	175	217	235
1979	180	222	282
1980	186	219	227
1981	186	218	254

Source: author's calculation based on
J.P.Stern East European energy and East-West trade
in energy (1982), p.26.

Table 25. Trade balance with EE6. (Current prices - Million TR).

country	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
BULGARIA													
export	2059.6	2276.7	2658.7	3144.4	3312.7	3660.2	4374.5	4884.6	5510.8	6124.4	6455.5	6752.3	6276.3
import	1931.2	2188.8	2494.6	2997.4	3173.7	3438.9	3696.9	4288.1	5053.3	5608	6056	6191.3	6551.7
balance	128.4	87.9	164.1	147	139	221.3	677.6	596.5	457.5	516.4	399.5	561	-275.4
HUNGARY													
export	1657.7	1771.3	2066.5	2396.4	2741.3	2981.6	3306.7	3707.2	4058	4320.8	4576.7	4678.2	4600
import	1616	1720.8	1960.1	2429.9	2413.8	2756.6	3300.4	3746.4	4007	4434.4	4891.9	4873.4	5080
balance	41.7	50.5	106.4	33.5	327.5	225	6.3	39.2	51	-113.6	-315.2	-195.2	-480
GDR													
export	2980.3	3217.9	3661.2	3982	4126.5	4873.4	5526.1	6419.6	6797.8	7481.4	7669.9	7884.2	7635.9
import	2643.1	2779.3	3066.3	3711.2	3917	4326.6	5154.6	5776.2	6595.7	7367.2	7591.7	7128.1	7093.2
balance	337.2	438.6	594.9	270.8	209.5	546.8	371.5	643.4	202.1	114.2	78.2	756.1	542.7
POLAND													
export	2447.2	2750.1	3195.9	3449.6	3837.5	4405.9	4931.8	4812.9	5274.3	6069.2	6531.5	6813.8	6542.2
import	2406.1	2484.9	2872.1	3600	3735.5	3596.1	3220.8	4097	4786.7	5296.8	5600.1	6127.2	6329.3
balance	41.1	265.2	323.8	-154.4	102	809.8	1710.5	715.9	487.6	772.4	931.4	686.6	212.9
RUMANIA													
export	702.1	770.2	1003.5	971.3	1077.8	1350.3	1779.1	1423.6	1639.6	1807.2	1956.5	2823.3	2539.2
import	823.7	829.7	1021.9	979	1067.8	1441.2	1673.1	1683.4	1665.3	1755.2	2302.6	2415.2	2347.2
balance	-121.6	59.5	18.4	7.7	10	90	106	-259.8	25.7	52	-346.1	408.1	192
CSSR													
export	2019.5	2320.5	2680.4	3002	3362.9	3648.1	4382.3	5047.5	5871.6	6540.8	6829.9	6947	6776.7
import	1891.7	2222.8	2436.9	3058.6	3183.4	3535.9	4104.8	4731.9	5420.4	6016.5	6632.3	6556.4	6907.4
balance	127.8	97.7	243.5	56.6	179.5	112.2	277.5	315.6	451.2	574.3	197.6	390.6	-130.7
EE6													
balance	554.6	880.4	1414.3	169.6	967.5	1824.2	3149.4	1972.4	1623.7	1915.4	945.4	2607.2	61.5

source: UTSSR, various issues.

Table 26. Funds raised on the international market.
(Million US $).

1984	866.8
1985	1508.2
1986	1821.0
1987	814.4

Source: OECD Financial Statistics Monthly, n.1, p.7, Jan. 1988

Table 27. Soviet imports at current prices, 1980-87.
(Billion Roubles).

year	Total	Soc.	DCs.
1980	44.5	23.7	15.7
1981	52.6	26.7	18.1
1982	56.4	30.8	18.9
1983	59.6	33.7	18.7
1984	65.4	38.3	19.6
1985	69.4	42.5	19.3
1986	62.6	41.8	15.9
1987	60.7	42.1	13.9

Source: VTSSSR, various issues and VTSSSR, 3, 1988.

GRAPH 1.

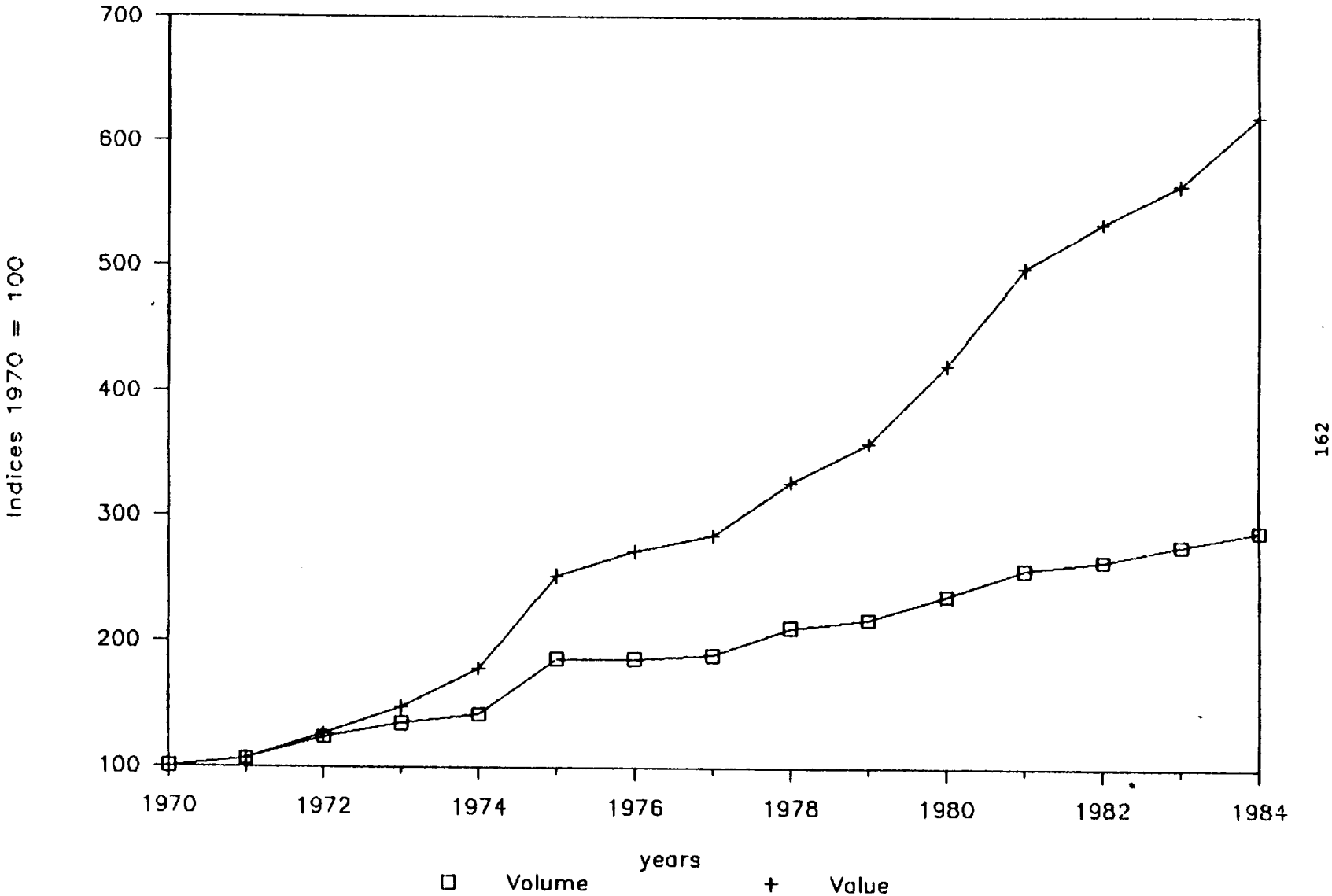

Soviet total trade
(1960–1985)
Million Roubles
(Thousands)
80
70
60
50
40
30
20
10
0
-10
1960
1965
1970
1975
1980
1985
Years
Exports
Imports
Balance

GRAPH 2.

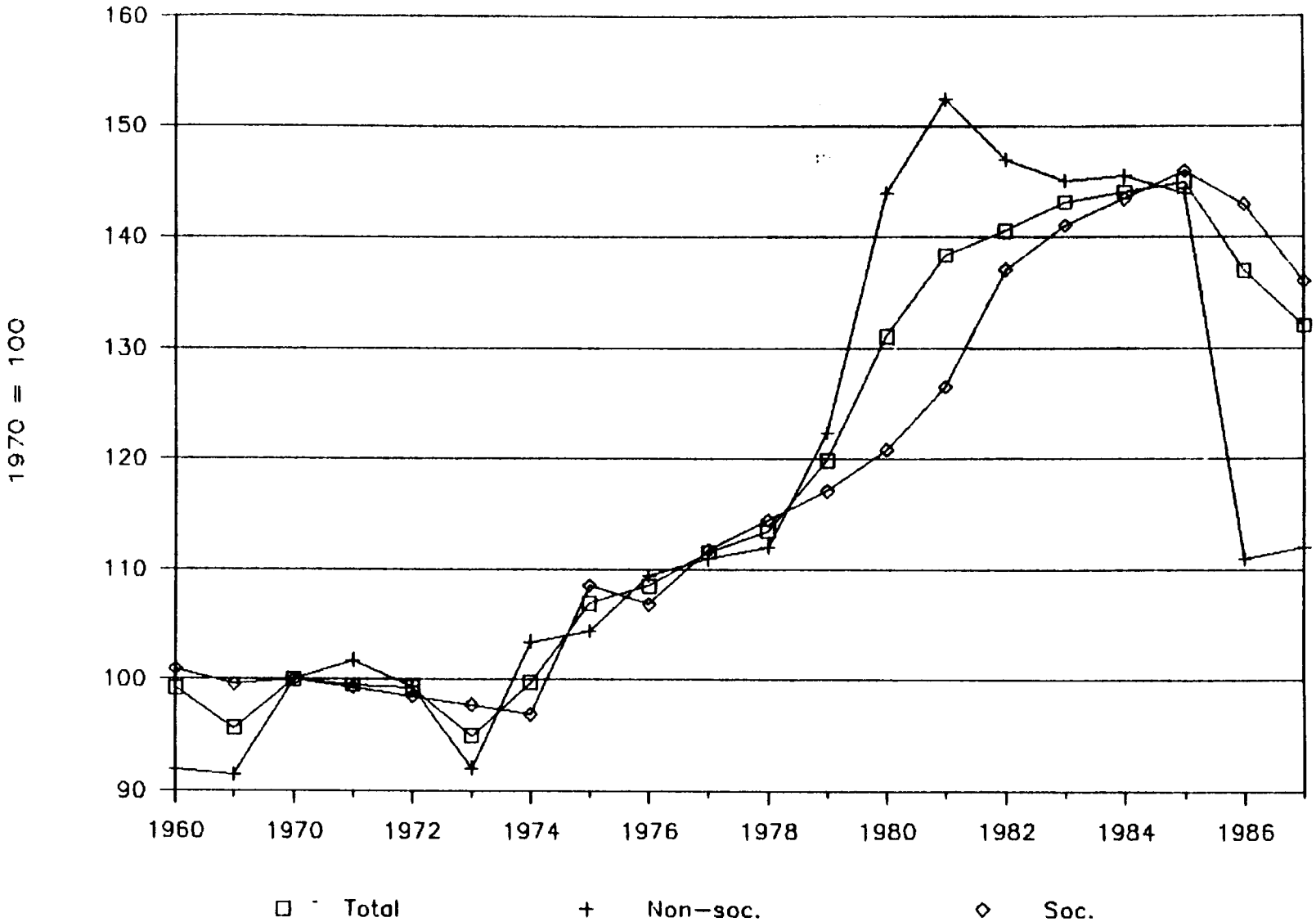

Soviet total exports.
700
600
500
400
300
200
100
1970
1972
1974
1976
1978
1980
1982
1984
Volume
Value

GRAPH 3.

Soviet total imports.

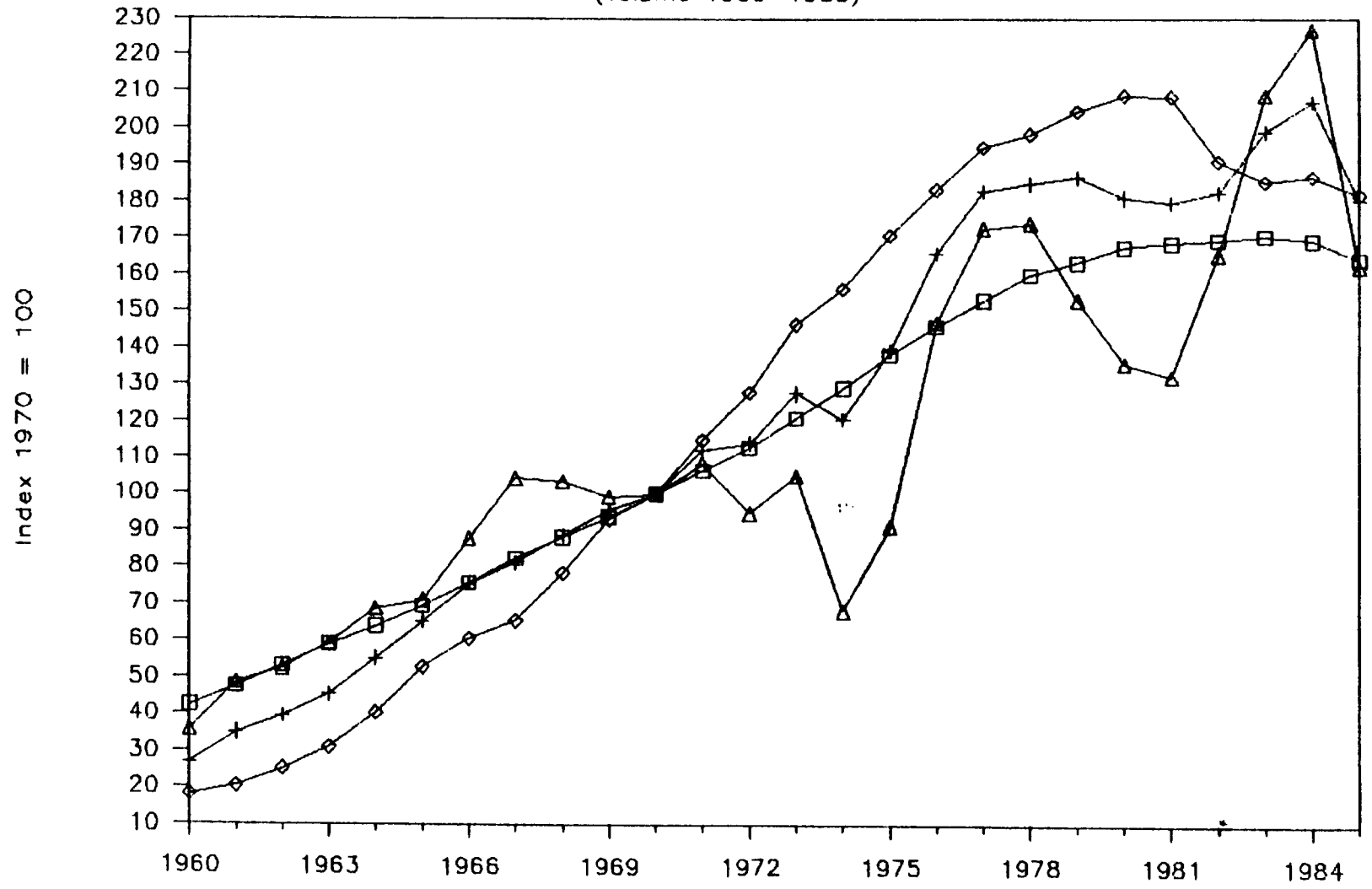


TERMS OF TRADE.

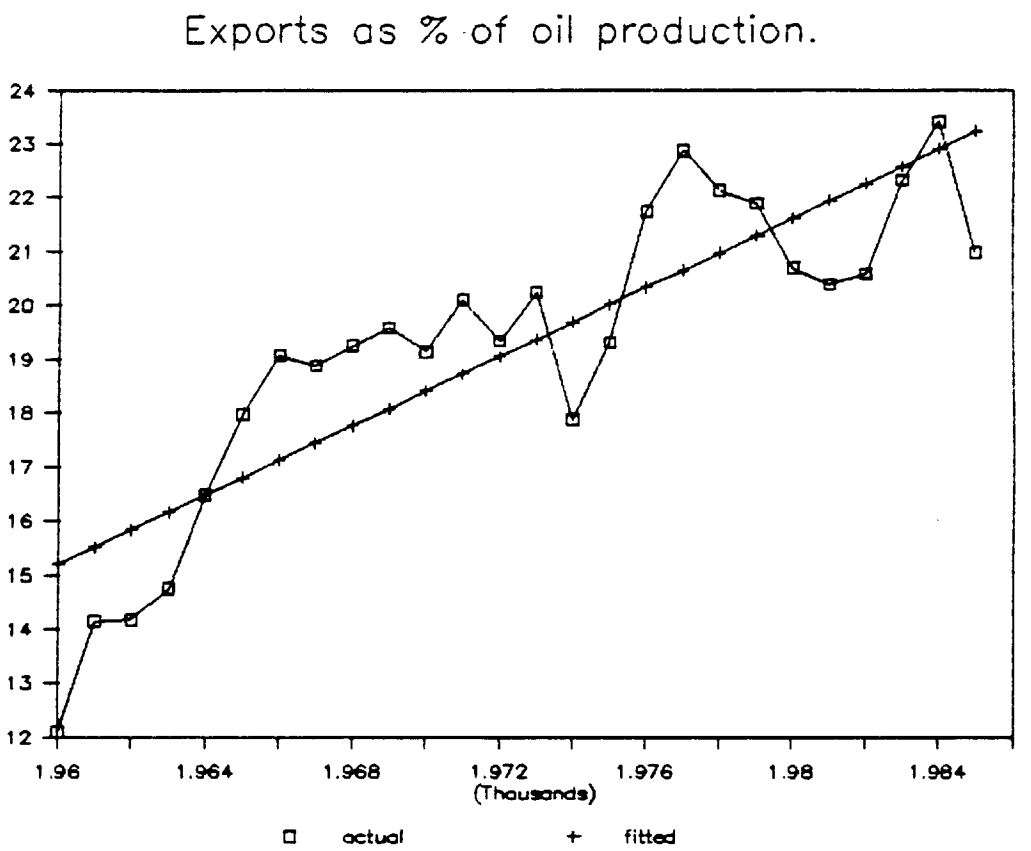


OIL PRODUCTION AND EXPORT.

(volume 1960–1985)



GRAPH 6.

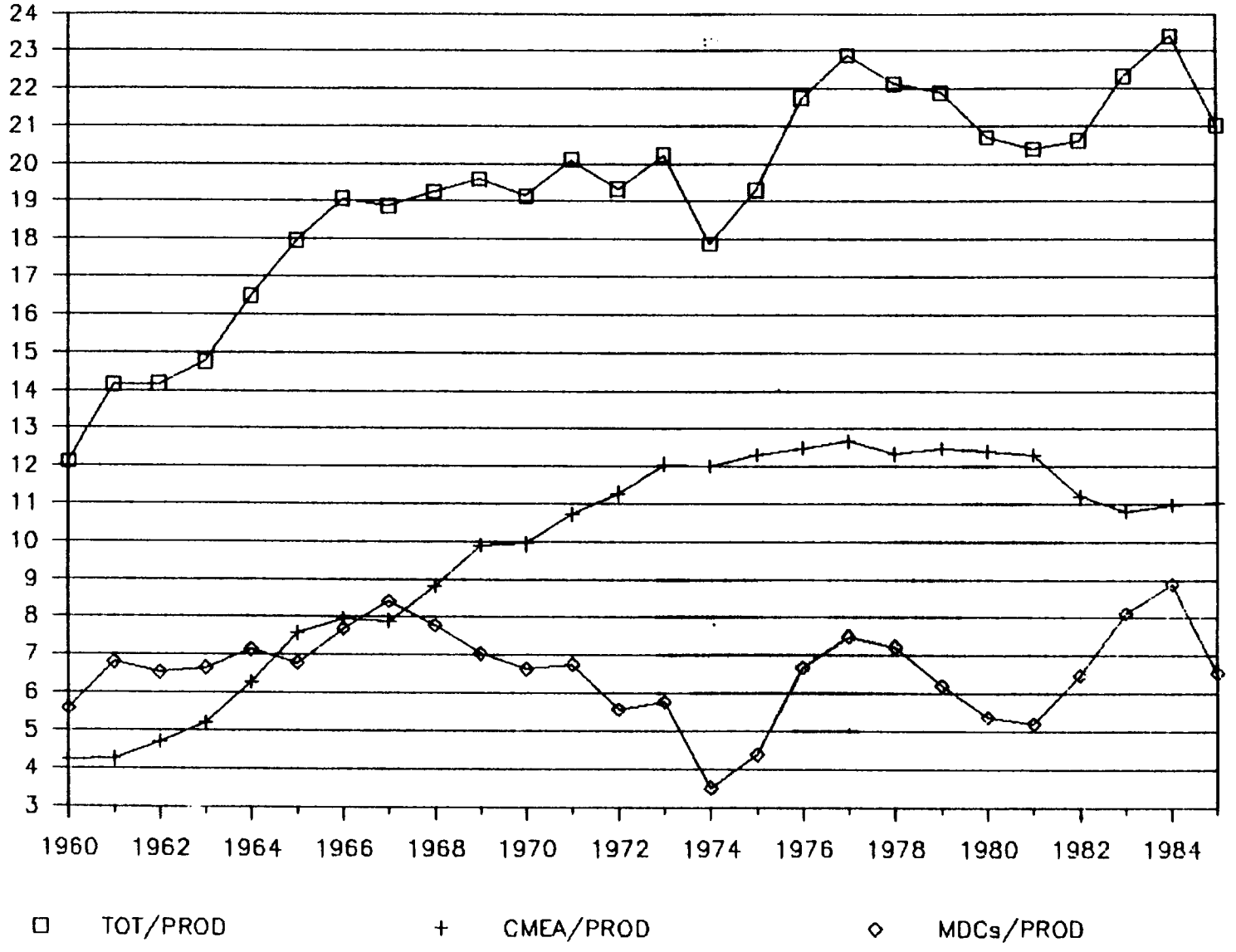


Regression results:

Constant	- 615.706
Std.Err.of Y Est.	1.5101700
R Squared	0.734641
N. Observations	26
Degrees of Freedom	24
X Coefficient	0.321887
St.Err. of Coeff.	0.039489

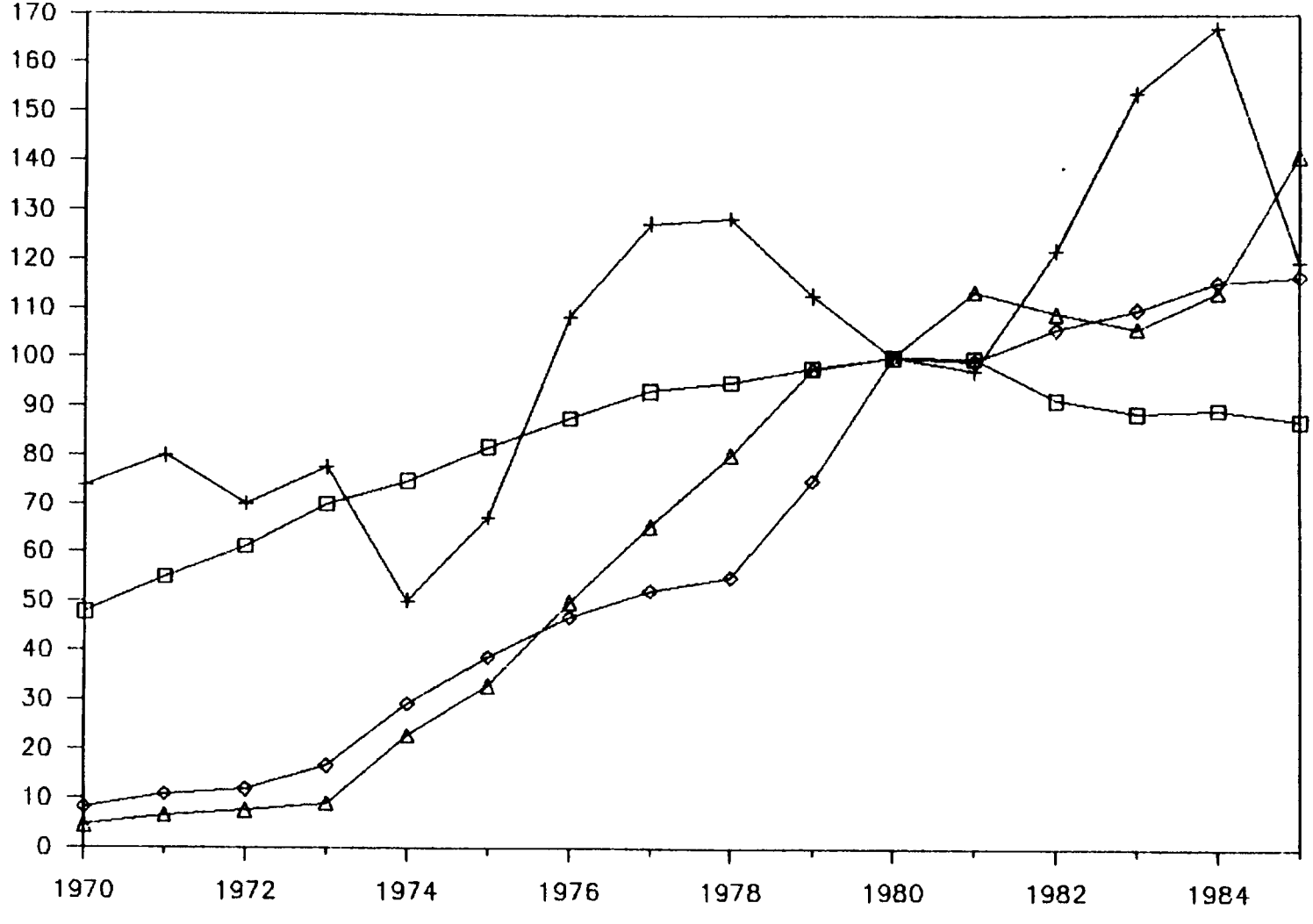
GRAPH 7.

OIL EXPORTS AS PERCENTAGE OF PRODUCTION



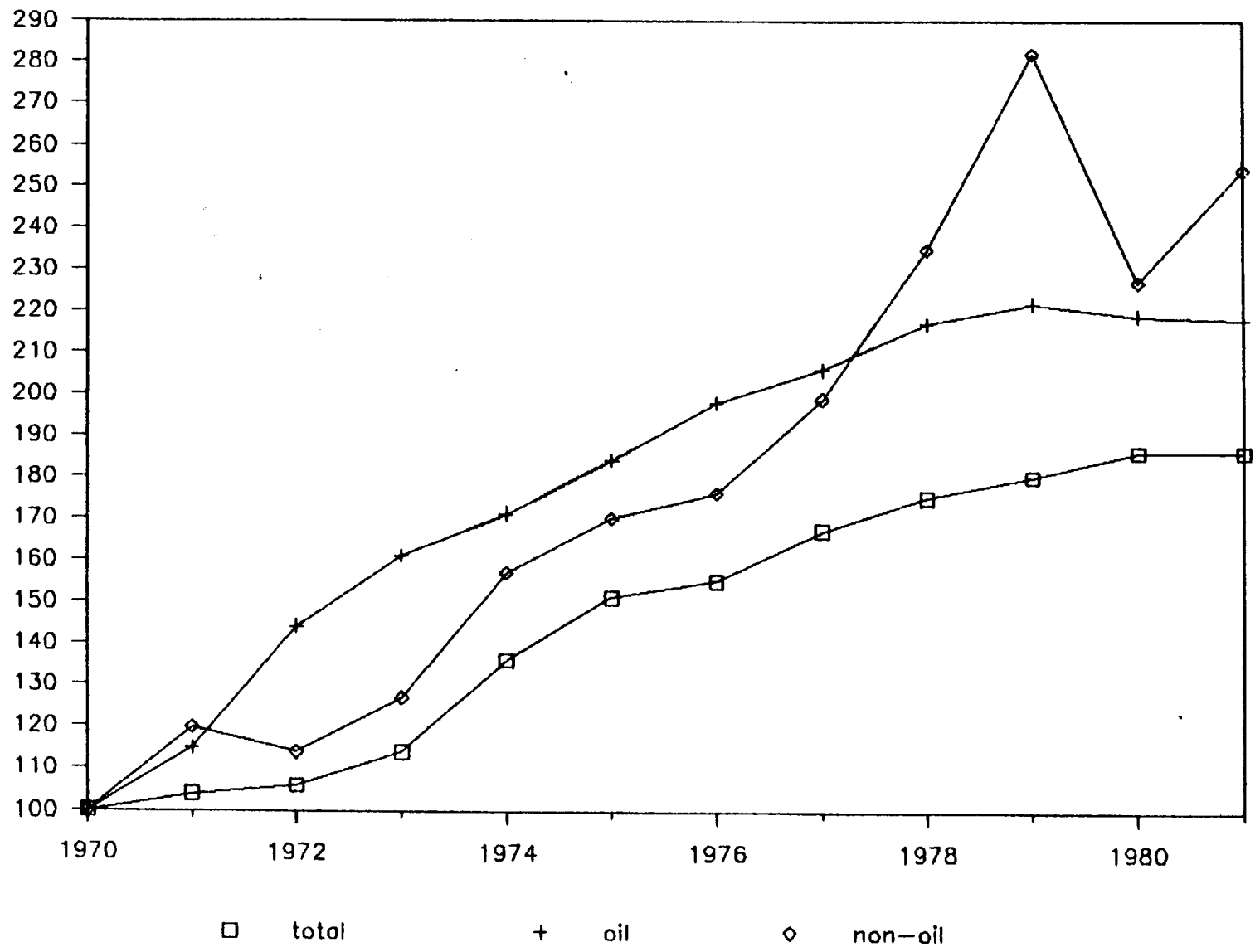
OIL AND GAS EXPORT.

Indices 1980 = 100.



□ oil.CMEA5 + oil.MCDs ◇ gas.CMEA5 Δ gas.MDCs

Exports of oil and non-oil products.



BIBLIOGRAPHY.

Abonyi, A. - Sylvain, A.J. Cmea integration and policy options for Eastern Europe: a development strategy of dependent states Journal of Common Market Studies, XVI(2):132-154,1977.

Adler-Karlson, G. The efficiency of embargo and sanctions Rode, R.-Jacobsen, H.D. Economic warfare or detente Boulder Co., Westview Press, 1985, pp. 281-93.

Afanas'ev, M. Technologicheskaya blokada sotsialisticheskikh stran Voprosy Ekonomiki, 9:109-118, 1986.

Alting Von Gesau, F. - Pelkmans, J. National economic security: perceptions, threats and policies Tilberg, J.F.Kennedy Institute, 1982.

Baumer, M. - Jacobsen, H.D. CMEA and the world economy: institutional concepts, US Congress-JEC, East European Economies post-Helsinki Washington D.C., USGPO, 1977, pp.1012-15.

Bayard, T.D. - et al. An economic model of United States and Western controls on exports to the Soviet Union and Eastern Europe US Congress-JEC Soviet economy in the 1980s: problems and prospects - Part II Washington, USGPO, 1982, pp.507-555.

Becker, A.S. (ed) Economic relations with the USSR: issues for the Western alliance Lexington, Lexington Books, 1983.

Becker, A.S. Economic leverage on the Soviet Union in the 1980s Rand Report R3127-USDP, July 1984.

Berliner, J.S. The innovation decisions in Soviet industry Cambridge MA., M.I.T. Press, 1976.

Bertsch, G.K. East-west strategic trade, CoCom and the Atlantic Alliance Paris, The Atlantic Institute for International Affairs, 1983.

Bertsch, G.K. Militarily critical technologies, technology transfer and Western controls NATO Adaptability to new technologies of the USSR and Eastern European countries Colloquim, Brussels, 1985, pp. 133-150.

Bertsch, G. K. Technology transfer and technology controls: a synthesis of Western-Soviet relationship R. A. Amann - J. Cooper (eds.) Technical progress and Soviet economic development London, Basil Blackwell, 1986.

Bertsch, G.K. Governing economic and technological relations with the USSR US Congress-JEC Gorbachev's economic plans Washington, USGPO, 1987, pp.433-447.

Bertsch, G.K. - et al. East West technology transfer and export control Osteuropa Wirtschaft, 26(2):116-136, 1981.

Bertsch, G.K. - McIntyre J.R. (eds) National security and technology transfer: the strategic dimension of East-West trade Boulder, Westview Press, 1983.

Bethkenhagen, J. The impact of energy on East-West trade: retrospects and prospects Saunders, C.T. (ed) East-West trade and finance in the world economy: a new look for the 1980s London, McMillan,1985 (a).

Bethkenhagen, J. Trade Rode, R.- Jacobsen,H.D. (eds.) Economic warfare or detente Boulder, Westview Press, 1985, pp.17-35 (b).

Bethkenhagen,J. Soviet energy: rapid rise in output and export DIW Economic Bulletin 24(12):7-13, Feb. 1988.

Blechman, B.M. National security and strategic minerals. An analysis of U.S. dependence on foreign sources of cobalt Boulder, Westview Press, 1985.

Bogomolov, O.T. Rol' SSSR v sotsialisticheskoi ekonomicheskoi integratsii Ekonomicheskoe Sotrudnichestva SEV, 2:43-50, 1986 (a).

Bogomolov, O.T. Strany sotsializma v mezhdunarodnom rasdelenii truda Moscow, 1986 (b).

Bogomolov, O.T. The concept of International economic security Foreign Trade USSR, 2:2-6, 1987.

Bogomolov, O.T. - Bykov, A.N. Strany SEV v mezhdunarodnom ob'mene technologiey Moscow, 1986.

Boltho, A. Foreign trade criteria in socialist economies Cambridge, C.U.P., 1971.

Bornstein, M. East-West economic relations and Soviet-East European economic relations US Congress-JEC The Soviet economy in a time of change Washington, USGPO, 1979, pp.291-311.

Bornstein, M. The transfer of technology to the USSR Paris, OECD, 1985.

Bornstein, M. - et al. East-West relations and the future of Eastern Europe London, Allen & Unwin, 1981.

Borokh, I. V. - Glagolev, V.C. Strategiceskoe napravlenie sotrudnichestva Moscow, 1984.

Brabant, J.M. Van Trade creation and trade diversion in Eastern Europe: a comment ACES Bulletin, XIX(1):79-97, 1977.

Brabant, J. M. Van Specialization and trade-dependence in Eastern Europe. The case of Hungary Yearbook of Eastern European Economies, 8:213-247, 1978 (a).

Brabant, J.M. Van Trade creation and trade diversion in Eastern Europe: a rejoinder ACES Bulletin 20:53-60, 1978 (b).

Brabant, J.M. Van Socialist economic integration Cambridge, C.U.P., 1980.

Brabant, J.M. Van Real changes in Eastern Europe's foreign trade in the 1970s. An empirical overview Yearbook of Eastern European Economies, 10(1):151-206, 1982.

Brabant, J. M. Van The USSR and Socialist Economic Integration Soviet Studies, XXXVI(1):127-38, January 1984.

Brabant, J. M. Van World prices and price-formation in intra-CMEA trade: selected empirical evidence Osteuropa Wirtschaft, 30(3):163-180, September, 1985 (a).

Brabant, J. M. Van Exchange rates in Eastern Europe World Bank Staff Working Papers, n.778, 1985 (b).

Brada, J.C. (ed) Quantitative and analytical studies in East-West economic relations Berlin, Springer & Verlag, 1976.

Brada, J.C. Real and monetary approaches to foreign trade adjustment mechanisms in centrally planned economies - a reconciliation European Economic Review, 19:229-44, 1982.

Brada, J.C. Soviet subsidization of Eastern Europe: The primacy of economics over policy Journal of Comparative Economics, 9:80-92, 1985.

Brada, J. - Hoffman, D. The productivity differential between Soviet and Western capital and the benefit of technological inputs to the Soviet economy Quarterly Review of Economic and Business 25(1):6-17, 1985.

Brada, J. - King, A.E. The declining importance of CMEA integration as a source of trade creation: a comment ACES Bulletin, XXII(2):89-96, 1980.

Brainard, L.J. Soviet international financial policy: Traditional formulas or new innovations? US Congress-JEC Gorbachev's economic plans - Vol. 1 Washington, USGPO, 1987, pp.100-115.

Brandsma, A.S.-Hughes Hallet, A.J. Do economic sanctions against the Soviet Union make sense? Interfaces, 14(4):53-68, July-August 1984 (a).

Brandsma, A.S.-Hughes Hallet, A.J. How vulnerable is the Soviet economy? Futures, April 1984, 163-72 (b).

Broner, A. Autarky in centrally planned economies Journal of Common Market Studies, 15(1):42-56, Sept. 1976.

Brougher, J. 1979-82: the United States uses trade to penalize Soviet aggression and seeks to reorder Western policy US Congress - JEC The Soviet economy in the 1980s: problems and prospects Washington, USGPO, 1982, pp. 419-453.

Brown, A.A. Towards a theory of centrally planned foreign trade A.A. Brown-E. Neuberger (eds.) International trade and central planning Berkeley, University of California Press, 1968, pp.57-103

Browning, M. The trend level of imports by CMEA countries Journal of Comparative Economics, 9(4):363-370, December 1985.

Bukharin, N.I. Zakmetki ekonomista k nachaln novogo khozyaystvennogo goda Moscow, 1928.

Bykov,A Obmen technologiei mezhdu stranami SEV i zapadnom Voprosy Ekonomiki 8:128-137, 1984.

Caporaso, J.A. Introduction to the special issue of International Organization on dependence and dependency in the global system International Organization, 32(1):1-12, 1978.

Carr, E.H. Socialism in one country, 1924-26 - Vol. 1 London, McMillan, 1958.

Central Intelligence Agency USSR: the role of foreign technology in the development of motor vehicle industry ER 79-10571, Washington, 1979.

Central Intelligence Agency Estimating Soviet and East European hard currency debt ER 80-1045, Washington, 1980.

Chadwick, M. - Long, D. - Nissanke, M. Soviet oil exports: trade adjustments, refining constraints and market behaviour Oxford, O.U.P., 1987.

Clark, C. - Bahry, D. Dependent development: a socialist variant International Studies Quarterly, 27(3), September 1983.

Crane, K - Kohler, D.F. Removing export credit subsidies to the Soviet bloc: who gets hurt and how much? Rand Report P7028, October 1984.

Csaba, L. Adjustment to the world economy in Eastern Europe Acta Oeconomica, 30(1):53-75, 1983.

Csaba, L. Comecon, prospectives for the 1980s Economies et Societes, serie G, 40:45-78, 1984.

Desai, P. The productivity of foreign resource inflows to the Soviet economy American Economic Review, 69(2): 70-75, May 1979.

Desai, P. Soviet grain and wheat import demands in 1981-85 American Journal of Agricultural Economics, 64:312-22, 1982.

Desai, P. Is the Soviet Union subsidizing Eastern Europe? European Economic Review, 30:107-116, 1986.

Dietz, R. Price changes in the Soviet trade with CMEA and the rest of the world US Congress-JEC Soviet economy in time of change Washington, USGPO, 1979, pp.263-90.

Dietz, R. Advantages and disadvantages in USSR trade with Eastern Europe. The aspect of prices The Vienna Institute for Comparative economic studies, Working Paper n. 97, 1984.

Dietz, R. Differences between intra-CMEA and world market prices: some of their implications EUI Discussion Papers, June 1985 (a).

Dietz, R. Soviet forgone gains in trade with the CMEA-six. A reappraisal October 1985 (mimeo) (b).

Dietz, R. The impact of recent world economic changes on East-west trade The Vienna Institute for Comparative Economic Studies - Working Paper, n.119, May 1986.

Dohan, M.R. Foreign trade specialization and its determinants in the post-war economy 1950-1970 Fallenbuchl, Z. (ed) Economic development in Eastern Europe and the Soviet Union - Vol. II New York, Praeger, 1976, pp. 90-132 (a).

Dohan, M.R. The economic origins of Soviet autarky: 1927/8-34 Slavic Review, 35, 1976 (b).

Dohan, M.R. Export specialization and import dependence in the Soviet economy 1970-1977 US Congress-JEC The Soviet economy in a time of change Washington, USGPO, 1979, pp.342-395.

Drabek, Z. The impact of technological differences on East-West trade Weltwirtschaftliches Archive, CXIX(4): 630-648, 1983.

Duvall, R. Dependence and dependencia theory: notes towards precision of concepts and argument International Organization, 32(1):51-78, 1978.

Ericson P.G.- Miller, R.S. Soviet Foreign Economic Behaviour: a Balance of Payments Perspective US Congress-JEC The Soviet Economy in a Time of Change Washington, USGPO, 1979, pp. 208-243.

Faminskiy, I.P. (ed) Problemy effektinosti ekonomicheskikh szvyazey mezhdu sotsyalisticheschimi i kapitalisticheskimi stranami Moscow, 1987.

Fedorov, B. Joint enterprises with participation of Western companies in Socialist countries Foreign trade USSR, 2:11-15, 1987.

Fernandez, J.C. Modelling economic leverage Rand Report 2065-USDP, May 1984.

Fink, G. Measuring integration: a diagnostic scale applied to EEC, CMEA, and East-West trade, 1938-75 Forshungberichte W.I.I.W, 42, August 1977.

Fink, G. - Mauler, K. Socialist Countries' West Trade and Hard Currency Debt Forschungberichte W.I.I.W., n.124, January 1987.

Friesen, C.M. The political economy of East-West trade New York, Praeger, 1976.

Frost, E.L. - Stent, A.E. NATO's trouble with East-West trade International Security, 8(1):178-200, 1984.

Gallik, D. - Guill, G.D. - Kostinsky, B.L. - Treml, V.G. The 1972 input-output table and the changing structure of the Soviet economy US Congress-JEC The Soviet economy in a time of change Washington, USGPO, 1979, pp.423-471.

Gallik, D. - Kostinsky, B.L. - Treml, V.G. Input-output structure of the Soviet economy: 1972 US Department of Commerce Foreign Economic Report n. 18, April 1983.

Gardner, H.S. The factor content of Soviet foreign trade: a synthesis ACES Bulletin 21:1-16, Summer 1979.

Gardner, H.S. Soviet foreign trade. The decision process The Hague, Kluwer-Nijhoff Publishing, 1983 (a).

Gardner, H.S. Soviet foreign trade decision making in the 1980s Columbia Journal of World Businness XVIII(4), 1983 (b).

Ghoshal, A. Going against the grain: lessons of the 1980 embargo The World Economy, 6(2):183-93, 1983.

Goldman, M.I. Autarky or integration. The USSR and the world economy US Congress-JEC Soviet economy in a new perspective Washington, USGPO, 1976, pp.81-96.

Goldman, M.I. Will the Soviet Union be in autarky in 1984? International Security, 1979, pp.18-36.

Goryaev, A.A. - Korlyogov, Yu.Yu. Vneshnyaya torgovlya sotsyalisticheskikh stran - Problemy upravleniya i effectivnost' Moscow, 1988.

Graziani, G. Comecon, domination et dependances Paris, Maspero, 1982.

Graziani, G. Soviet strategy in restructuring trade with the Third World NATO The Soviet economy: a new course? Bruxelles, Colloqium, 1987, pp.289-314.

Gregory, P.R. - Stuart, R.C. Soviet economic structure and performance 2nd ed. New York, Harper & Row, 1981.

Gustafson, T. Soviet negotiating strategy. The East-West gas pipeline deal, 1980-84 RAND Report R3220-FF February 1985.

Hanson, P. The trade partner composition of Soviet trade with the West Fallenbuchl, Z.M. - McMillan,C.H. (eds) Partners in East-West economic relations. The determinants of choice New York, Pergamon Press, 1980, pp.185-218.

Hanson, P. Soviet trade with Eastern Europe Dawisha,K - Hanson, P. (eds) Soviet-East European dilemmas London, Heinemann, 1981, pp.90-107 (a).

Hanson, P. Trade and technology in Soviet Western relations London, McMillan, 1981 (b).

Hanson, P. Changes in soviet policy on technology imports. Osteuropa Wirtschaft, 27(2):128-33, 1982 (a).

Hanson, P. The end of import-led growth? Some observations on Soviet Polish, Hungarian experience in the 1970s. Journal of Comparative Economics, 6:130-47, 1982 (b).

Hanson, P. Foreign economic relations Brown, A. - Kaser, M. (ed) Soviet policy for the 1980s London, McMillan, 1982, pp.65-97 (c).

Hanson, P. Western economic sanctions against the USSR: their measure and effectiveness NATO External economic relations of CMEA countries Colloqium, Brussels, 1983, pp.69-92.

Hanson, P. Economic relations between communist and capitalist nations in Europe Bericht Des Biost, 44, 1985 (a).

Hanson, P. The Soviet economic stake in European detente Gelman, H. (ed) The future of Soviet policy towards Western Europe Santa Monica, RAND, 1985, pp.29-51 (b).

Hanson, P. Western economic statecraft in East-West relations London, Routledge and Kegan Paul, 1988.

Hardt, J.P - Gold, D.L. Changes in East-West trade: the policy context Paper for the Conference on the system of East-West economic relations in a changing world economy, Toronto, Canada, June 1984 (mimeo).

Hardt, J.P - Tomlinson, K.T. An assessment of the Afghanistan sanctions: Implications for trade and diplomacy in the 1980s House Committee on Foreign Affairs, April 1981 (mimeo).

Hawkesworth, R.I. Interdependence, dependence and integration in the CMEA: a survey Journal of Industrial Affairs, 9(13):57-73, 1982.

Hewett, E.A. Foreign trade prices in the CMEA Cambridge, C.U.P., 1974.

Hewett, E.A. Prices and resource allocation in intra-CMEA trade Abouchar, A. (ed) The socialist price mechanism Durham, Duke University Press, 1977.

Hewett, E.A. Foreign trade outcomes in Eastern and Western economies Marer, P. - Montias, M. (eds.) East European integration and East-West trade Bloomington, Indiana University Press, 1980, pp.41-73 (a).

Hewett, E.A. The impact of the world economic crisis in intra-CMEA trade Neurberger, E. - Tyson, L. (eds) The impact of international disturbances on the Soviet Union and Eastern Europe New York, Pergamon Press, 1980, pp. 323-48 (b).

Hewett, E.A. Foreign economic relations A. Bergson - H.S. Levine (eds.) The Soviet economy towards the year 2000 London, Allen & Unwin, 1983, pp.269-310.

Hewett, E.A. Soviet economic relations with CMEA countries NATO The Soviet economy after Brezhnev Colloqium, Brussels, April 1984, pp. 241-254 (a).

Hewett, E.A. Energy, economics and foreign policy in the Soviet Union Washington, The Brooking Institution, 1984 (b).

Hirschman, A. O. National Power and the structure of foreign trade Berkeley, University of California Press, 1945.

Hirschman, A.O. Beyond asymmetry: critical notes on myself as a young man and some other old friends International Organization, 32(1):45-50, 1978.

Holzman, F.D. Soviet foreign trade and the question of discrimination: a "custom union" approach Review of Economics and Statistics 44:134-147, 1962.

Holzman, F.D. Foreign trade behaviour of a centrally planned economy Rosovsky, H. (ed) Industrialization in two systems: essays in honour of A. Gerschenkron New York, Wiley, 1966.

Holzman, F. D. Foreign trade under central planning Harvard, H.U.P., 1974.

Holzman, F.D. Creditworthness and balance of payments adjustment mechanism of centrally planned economies Rosefielde, S. (ed) Economic welfare of Soviet socialism New York, Cambridge U.P., 1981.

Holzman, F.D. Comecon: a "trade destroying" custom union Journal of Comparative Economics 9(4):410-23, 1985.

Holzman, F. D. The economics of Soviet bloc trade and finance Godstone, Westview Press, 1987.

Holzman, F.D. - Portes, R. The limits of pressure Foreign Policy, Fall 1978, pp.80-90.

Hufbauer, G.C. - Schott, J.J. Economic sanctions reconsidered - History and current policy Washington, Institute for International Economics, 1985.

Ivanov, I.D. Restructuring the mechanism of foreign economic relations in the USSR Soviet Economy, 3(3):198-218, 1987.

Jacobsen, H.D. - Rode, R. Economic relations as a prop for detente Rode, R.- Jacobsen,H.D. (eds.) Economic warfare or detente Boulder, Westview Press, 1985, pp.294-298.

Karavayev, V. Our debt Literaturnaya Gazeta, Oct. 21, 1987, p.14. Translated in CDSP XXXIX(44), 1987, pp.12-16.

Kaser, M. External Relations of Comecon Countries: Gold Sales and Prospects NATO External Economic Relations of CMEA Countries: Their Significance and Impact in a Global Perspective, Colloqium, Bruxelles, 1983,pp. 157-170.

Kaser, M. Soviet convertible currency durables in the coming decade EUI Colloqium Papers 119/85, June 1985.

Kaser, M. The energy crisis and Soviet economic prospects, 1986-1990 The World Today, 42(6):91-93, 1986.

Kas'yanenko, V.I. Zavoevanie ekonomicheskoy nezavisimosti SSSR (1917-1940) Moscow, 1972.

Kellman, M. The crumbling embargo? Comparative Economic Studies, XXVII(2):53-70, 1985.

Kholer, D. F. - et al. Economic costs and benefits of subsidizing western credits to the East RAND Report, R-3129-USDP.

Klauss, M.W - Burrows, J.C. - Beggs, S.D. International mineral cartels and embargoes New York, Praeger, 1980, pp.1-53.

Klochek, V. - et al Soviet foreign trade: today and tomorrow Moscow, Progress Publisher, 1985.

Knirsch, P. Interdependence in East-West economic relations OECD From Marshall plan to global interdependence: new challanges for the industrialized nations Paris, OECD, 1978, pp.135-67.

Knirsch, P. The significance of economic interdependence arising from East-West relations Fallenbuchl, Z.- McMillan, C.H. (eds.) Partners in East-West economic relations. The determinants of choice New York, Pergamon Press, 1980, pp. 51-75.

Kohn, M.J. Developments in Soviet-Eastern european terms of trade 1971-75 US Congress-JEC The Soviet economy in a new perspective Washington, USGPO, 1976, pp. 67-80.

Kohn, M. J. Soviet-Eastern european economic relations, 1975-78 US Congress-JEC Soviet economy in a time of change Washington, USGPO, 1979, pp.245-262.

Kohn, M. J. - Lang, N. The intra-CMEA foreign trade system: major price changes, little reforms US Congress-JEC East European economies post-Helsinky Washington, USGPO, 1977.

Korbonski, A. Detente, East-West trade and the future of economic integration in eastern Europe World Politics, 4:568-89, 1976.

Kostecki, M.M. The Soviet impact on commodity market London, McMillan,1984.

Kostinsky, B.L. Description and analysis of Soviet foreign trade statistics U.S. Department of Commerce Foreign economic report, n.5, July 1974.

Kostinsky, B.L. - Treml, V.G. Foreign trade pricing in the Soviet Union: export and imports in the 1966 input-output table US Dept. of Commerce Foreign Economic Report, 8 March 1976.

Koves, A. The impact of western trade restrictions on East-west trade after world war II Acta Oeconomica, 19(1):67-76, 1977.

Koves, A. Turning inward or turning outward: reflections on the foreign economic strategy of CMEA countries. Acta Oeconomica, 26(1/2):51-69, 1981.

Koves, A. Alternative foreign economic strategies for the CMEA countries Konjunturpolitik, 28(5):324-41, 1982.

Koves, A. Implicit subsidies and some issues of economic relations within the CMEA Acta Oeconomica, 31(1-2):125-136, 1983.

Koves, A. The CMEA countries in the world economy. Turning inwards or turning outwards Budapest, Akademiai Kiado, 1985.

Kravalis, M.H. - Young, J.P. - Oechsler, R.G. - Lamb, D.A. Soviet exports to the industrialized West: performance and prospects US Congress-JEC The Soviet economy in a time of change Washington, USGPO, 1979, pp.414-461.

Lavigne, M. The Soviet Union inside Comecon Soviet Studies XXXV(2):135-153, 1983.

Lavigne, M. Economie international des pays socialistes Paris, Armand Colin Ed., 1985.

Lavigne, M. Les societes mixtes en URSS: aspects juridiques et financiers Le Courrier des Pays de l'Est, 315:17-22, February 1987 (a).

Lavigne, M. Soviet trade with LDCs US Congress-JEC Gorbachev's economic plans Washington, USGPO, 1987, pp.504-531 (b).

Levcik, F. - Stankovsky,J. East European countries' trade problems: between ties to the USSR and ties to the West Paper presented at the III World Congress for Soviet and East European Studies, Washington, November 1985 (mimeo).

Leyton-Brown, D. The utility of international economic sanctions London, Croom Helm, 1987.

Loeber, D.A. - Friedland, A.P. Soviet imports of industrial installations under compensation agreements: West Europe's siberian pipeline revisited Columbia Journal of World Business, XVIII(4):51-62, Winter 1983.

Lundborg, P. The economics of export embargoes London, Croom Helm, 1987.

Maciejewski, W. - Nuti, D.M. Economic integration between CMEA countries and prospects for East-West trade E.U.I. October 1984 (mimeo).

Maddock, R. Energy and integration: the logic of interdependence in the Soviet Union and Eastern Europe Journal of Common Market Studies, XIX(1):21-34, 1980.

Mahler, V.A. Dependency approaches to international political economy. A cross-national study New York, Columbia University Press, 1980.

Marer, P. Postwar pricing and price patterns in socialist foreign trade (1946-1971) Bloomington, Indiana University Press, 1972 (a).

Marer, P. Soviet and East European foreign trade 1946-1969: a statistical compendium and guide Bloomington, Indiana University Press, 1972 (b).

Marer, P. Has Eastern Europe became a liability to the Soviet Union? The economic aspect Gati,C. (ed) The international politics of Eastern Europe New York, Praeger, 1976, pp.59-81 (a).

Marer, P. Prospects for integration in the CMEA International Organization 30(4), 1976 (b).

Marer, P. Intra-Comecon trade: patterns of standardized trade dependence NATO Comecon: progress and prospects Brussels, Colloqium, March 1977, pp.75-101.

Marer, P. Towards a solution of the mirror statistics puzzle in East-West commerce Levcick, F.(ed) International economics. Comparison and interdependence Vienna, Springer & Verlag, 1978.

Marer, P. The political economy of Soviet relations with Eastern Europe Terry, S.M. (ed) Soviet policy in Eastern Europe New Haven, Yale U.P., 1984, pp.155-188.

Marer, P. Comparing the foreign economic strategies of market and centrally planned economies Paper presented at the "Workshop on East-West European interaction", Florence, September 1986 (mimeo).

Marer, P. - Montias, M. (eds) East European integration and East-West trade Bloomington, Indiana University Press, 1980.

Marrese, M. - Vanous,J. Soviet policy options in trade relations with Eastern Europe US Congress- JEC Soviet economy in the 1980s: problems and prospects Washington, USGPO, 1982, pp.102-116.

Marrese, M. - Vanous, J. Unconventional gains from trade Journal of Comparative Economics 7:382-99, 1983 (a).

Marrese, M.- Vanous, J Soviet Subsidization of trade with Eastern Europe: a Soviet perspective Berkeley, University of California Press, 1983 (b).

Marrese, M - Vanous, J. The content and controversy of Soviet trade relations with Eastern Europe, 1970-84 April 1984, (mimeo).

Martens, J.A. Quantification of Western high-technology products to Communist countries US Congress-JEC Eastern Europe: slow growth in the 1980s Washington, USGPO, 1986, pp.91-114.

McIntyre J.F. Soviet efforts to revamp the foreign trade sector US Congress-JEC Gorbachev's economic plans Washington, USGPO, 1987, pp.489-503 (a).

McIntyre J.F. USSR's hard currency trade and payments position US Congress-JEC Gorbachev's economic plans Washington, USGPO, 1987, pp.474-488 (b).

McMillan, C.H. Soviet specialization and trade in manufactures Soviet Studies, XXV(4):522-30, 1973 (a).

McMillan, C.H. Factor proportions and structure of Soviet foreign trade ACES Bulletin, XV:57-81, 1973 (b).

McMillan, C.H. More on the factor content of Soviet trade ACES Bulletin XVI:56-58, 1974.

McMillan, C.H. Some thoughts on the relationship between regional integration in Eastern Europe and East-West economic relations Levcik, F. (ed) International economics. Comparison and interdependence Vienna, Springer & Verlag, 1978, pp.183-199.

Michaely, M. Trade, income levels and dependence Amsterdam, North Holland, 1984.

Mikulski, K.I. (ed) CMEA: international significance of socialist integration Moscow, Progress, 1982.

Mitrofanova, N. M. Concerning the interrelationship between internal and foreign trade prices in European socialist countries Problem of Economics May 1974, pp.85-97.

Mitrofanova, N.M. Ob ekonomicheskoi prirode kontrakuykh tsen vo vzainom sotrudnichestva stran SEV Izvsttyia Akademii Nauk-Seriia Ekonomicheskaya, 5:116-24, 1977.

Mitrofanova, N.M. Tendentsii dvizheniia kontraktuykh tsen v torgole stran SEV. Voprosy Ekonomiki, 8:101-6, 1978.

Montias, M. Obstacles to the economic integration of Eastern Europe Studies in Comparative Communism 2/3/4:38-60, Jul.- Oct. 1969.

Mueller, F. Zur Frage der Abhangigkeit in den wirtschafltichen Ost-west Boziehungen (Concerning dependence in East-West economic relations) Stiftung Wissenschaft und Politik, SWP-AP 2106, 1976.

Mueller, F. Mutual economic dependence between the EEC and the CMEA Avi Shlaim - Yannopoulos, G.N. (eds.) The EEC and Eastern Europe Cambridge, Cambridge University Press, 1978, pp.207-226.

Neurberger,E. - Tyson, L.A.(eds) The impact of international economic disturbances on the Soviet Union and Eastern Europe New York, Praeger, 1980.

Nielsen, M. Some problems concerning reforms in CMEA cooperation Paper presented at the NASEES Annual Conference, Cambridge, 22-24 March 1986 (mimeo).

Nolting, L.E. Integration of trade and technology in CEMA countries US Dept. of Trade Foreign Economic Report n.21, Washington, 1983.

Nove,A - Gomulka,S. East-West technology transfer. Contribution to Eastern growth: an econometric analysis Paris, OECD, 1984.

Novoe v praktike kreditovaniya i rachetov - Interview with G.I. Vasil'ev Ekonomicheskaya Gazeta, n.8, February, 1987, p.21.

O merakh po korennomu sovershenstvovanie vneshne-ekonomicheskoy deyatel'nosti Pravda, 24/9/1986.

Offutt, S.E.- Blandford, D. The impact of the Soviet Union upon the U.S. feed/livestock sector. An assessment Journal of Policy Modeling, 6(3):311-40, 1984.

Ognev, A.P. Ekonomicheskie otnosheniya Vostok-Zapad v 80e gody Moscow, 1986.

Olechowski, A. - Yeats, A. The incidence of non-tariff barriers on socialist exports Economia Internazionale 2:227-45,1982.

Osipov, N. The USSR's export prospects Foreign Trade USSR 2:3-9, 1985.

Parrott, B. (ed) Trade, technology and Soviet-American relations Bloomington, Indiana U.P., 1985.

Pedrocchi, A. L'evoluzione dei rapporti economici all'interno del Comecon e suoi riflessi internazionali Est-Ovest XI(4):7-25, 1980.

Pelzman, J. Trade creation and trade diversion in the CMEA, 1954-1970 American Economic Review, 67(4):713-722, 1977.

Pelzman, J. Trade integration in the CMEA: creation and diversion, 1954-1970 ACES Bulletin, XXI(3):39-59, 1979.

Pelzman, J. Economic determinants of Soviet foreign trade with Eastern Europe European Economic Review 14:45-59, 1980.

Plaut, S.E. Import dependence and economic vulnerability London, JAI Press Inc., 1983.

Portes, R. East Europe's debt to the West: interdependence is a two way street Foreign Affairs, 55(4):751-82, 1977.

Portes, R. Effects of the world economy crisis on Est European economy The World Economy, 3(1):13-52, 1980.

Portes, R. Deficit and detente. Report of an international conference on the balance of trade in the Comecon countries New York, The XXth Century Fund, 1983.

Rachkov, B. Vneshnyaya torgovlya i kon'yunktura Ekonomicheskaya Gazeta, 7, February, 1987, p.2.

Richardson, N.- Kegley, C. Trade dependence and foreign policy compliance International Studies Quarterly, 24(2):191-22, 1980.

Richter, S. Hungary's foreign trade with CMEA partners in convertible currency Acta Oeconomica, 3/4:323-36, 1980.

Rizhkov, N. Strategy of acceleration Foreign trade USSR, 1:3-4, 1987.

Rode, R.- Jacobsen,H.D. (eds.) Economic warfare or detente Boulder, Westview Press, 1985.

Roosa, R.V. - et al. (eds.) East-West trade at the crossroad New York, New York University Press, 1982.

Rosefielde, S. The embodied factor content of Soviet international trade ACES Bulletin, XV:3-12, 1973.

Rosefielde, S. Soviet post-war foreign trade policy: stability and methamorphosis Shapiro, J.P. - Potichny, P.J. (eds) From the cold war to detente New York, Praeger, 1976, pp.122-43 (a).

Rosefielde, S. Foreign trade ruble prices and the Heckscher-Ohlin interpretation of Soviet foreign trade ACES Bulletin XVIII:31-38, Fall 1976 (b).

Rosefielde, S. Is the embodied factor content of Soviet foreign trade hyper-irrational? Problems of theory and measurement ACES Bulletin, XXI:19-51, Summer 1979.

Rosefielde, S. Comparative advantage and the evolving pattern of Soviet international commodity specialization, 1950-73 Rosefielde, S. (ed) Economic welfare and the economy of Soviet socialism New York, C.U.P., 1980.

Schaffer, M.E. (ed) Technology transfer and East-West relations London, Croom Helm, 1985.

Schiavone, G. CoCom and multilateral export controls: economic, strategic and institutional issues E.U.I. Discussion Papers, June 1986.

Schroeder K. Soviet Union gold export policy. Significance, function feasibility Stiftung Wissenschaft und Politik - Working Paper, AP 2470, March 1986.

Seltsovsky, V. Improving the analysis of structural variations in the USSR's foreign trade and estimating the effects on its volume Foreign Trade USSR, 3:26-33, 1981.

Seltsovsky, V. Some economic-statistical method of the USSR foreign trade development analysis in the Ninth and Tenth Five Year Plan periods Foreign Trade USSR, 5:37-42, 1982.

Shenaev, V.N. - Andreev,Yu.V. (eds) SSSR-Zapadnaya Evropa: problemy torgovo-ekonomicheskikh otnosheniy Moscow, 1986.

Slavinskaya, L.A. Mechanizm ekonomicheskikh otosheniy Vostok-Zapad Moscow, 1987.

Smirnov, P. Sovmestnye predpriyatiya na territorii SSSR Vnesnyaya Torgovlya SSSR, 1:47-49, 1988.

Sobell, V. The Red market Aldershot, Gower, 1984.

Sovershenstvovanie vneshneekonomicheskoy deyatel'nosti Vneshnyaya Torgovlya, 2, 1987. [b]

Sovershenstvovanie vneshneekonomicheskoy deyatel'nosti - Interview with V.M. Kamentsev Ekonomicheskaya Gazeta, 3, January, 1987, pp.6-7.[a]

SSSR i mezhdunarodnye ekonomicheskie otnosheniya. Sbornik dokumentov i materialov Moscow, 1985.

Stent, A.E. East-West trade and technology transfer: the West's search for consensus The World Today, 40(11):452-62, 1984.

Stern, J. Specters and pipe dreams Foreign Policy, 48:21-36, 1982.

Stern, R. - et al. Price elasticities in international trade: an annoted bibliography London, McMillan, 1976.

Szakolczai, G. - et al. The dependence of the Hungarian economy on the world economy: facts and consequences Soviet and East European Foreign Trade, XXIII(1):54-88, 1987.

Tasky, K. Soviet technological gap and dependence on the West: the case of computers US Congress - JEC The Soviet economy in a time of change Washington, USGPO, 1979, pp.510-523.

Taylor, K. Import protection and East-West trade US Congress - JEC East European economies post-Helsinki Washington, USGPO, 1977, pp.1132-74.

Tiraspolsky, A. L'enigme du prix des echanges a l'interior du CAEM Le Courrier des Pays de l'Est 271:3-26, 1983.

Tiraspolski, A. An evaluation of gains and losses in intra-CMEA trade: terms of trade from 1970 to 1982 Soviet and East European Foreign Trade, XX(4):32-62,1984/5.

Tolley, G.S. - Wilman,J.D. The foreign dependence question Journal of Political Economy 85(2):323-47, 1977.

Treml, V.G. Foreign trade and the Soviet economy: changing parameters and interrelations Neurberger, E.- Tyson, L. (eds) The impact of international economic disturbances on the Soviet Union and Eastern Europe New York, Pergamon Press, 1980, pp.184-207.

Treml, V. G. The inferior quality of Soviet machinery as reflected in export prices Journal of Comparative Economics, 5:200-221, 1981.

Treml, V.G. Measuring the role of foreign trade in the Soviet economy WEFA CPE Current Analysis, August 6, 1982.

Treml, V.G. A note on calorie value of 1981 Soviet foreign trade in foodstuffs Duke University, June 1983, (mimeo) (a).

Treml, V.G. Soviet dependence on foreign trade NATO External economic relations of CMEA countries Colloqium, Brussels, 1983, pp.35-52 (b).

Treml, V.G. Soviet foreign trade in foodstuffs Soviet Economy, 2(1):95-109, 1986.

Treml, V.G. - Hardt, J.P. (eds) Soviet Economic Statistics Duke, Duke University Press, 1972.

Treml, V.G. - Kostinsky, B.L. Domestic value of Soviet foreign trade: exports and imports in the 1972 input-output table Foreign Economic Reports, n.20, Washington US Department of Commerce, Bureau of Census, 1982.

UN-ECE Trade dependence in European countries, 1953-1967 Economic Bulletin for Europe, 21(1):42-65, 1970.

UN-ECE The determinants of East-West trade Economic Bulletin for Europe, 33:565-602, 1981.

UN-ECE Exports of manufactures from Eastern Europe and the Soviet Union to the Developed Market economies Economic Bulletin for Europe, 35(4):441-534, 1983.

UN-ECE The commodity structure of East European and Soviet trade at constant prices: a statistical note Economic Bulletin for Europe, 37(4):407-435, 1985.

UN-ECE Economic survey of Europe, 1987-88 New York, United Nations, 1988.

US Senate Economic relations with the Soviet Union. Hearings before the Subcommittee on international economic policy and the Committee on foreign policy Washington, USGPO, 1982.

US Arms Control and Disarmament Agency World Military Expenditures and Arms Transfers 1972-1982 Washington, April 1984.

Van Oudenaren, J. The Urengoi pipeline. Prospects for Soviet leverage Rand Report R 3207 RC, December 1984.

Vanous, J. Soviet and Eastern European foreign trade in the 70s: a quantitative assessment US Congress-JEC East European economic assessment - part II Washington, USGPO, 1981, pp.685-715.

Vanous, J. Dependence of the Soviet economy on foreign trade WEFA CPE Current Analysis, July 14, 1982.

Vanous, J. Convertible currency indebtness of the CMEA countries, its implications and overlook for 1983-87 NATO External economic relations of CMEA countries Colloqium, Brussels, 1983, pp. 243-274.

Vogel, H. Political security implications of East-West trade Paper for the Seminar "East-West economic issues - Challange for the West" Woodrow Wilson International Center Washington, October 1984 (mimeo).

Wienert,H - Slater, J. East-West technology transfer. The trade and economic aspects Paris, OECD, 1986.

Wiles, P. Communist international economics Oxford, Blackwell, 1968.

Wipf, L.J.- Brada, J.C. The impact of West European trade strategies on exports to Eastern Europe European Economic Review, 6:155-171, 1975.

Wolf, T.A. The distribution of costs and benefits in the US-Soviet trade US Congress-JEC Soviet economty in time of change - Vol.2 Washington, USGPO, 1979, pp.327-341.

Wolf, T.A. Choosing a US strategy towards the Soviet Union US Congress-JEC The Soviet economy in the 1980s: problems and prospects Washington, USGPO, 1982, pp.400-418 (a).

Wolf, T.A. Soviet market power and pricing behaviour in Western export markets Soviet Studies XXXIV:529-46, 1982 (b).

Wolf, T.A. A note on the conversion of rubles trade flows into dollars IMF Research Dept. - DM/86/23 April 1983 (mimeo) (a).

Wolf, T.A. Changes in the pattern of Soviet trade with CMEA and "non-socialist" countries NATO External economic relations of CMEA countries Colloqium, Brussels, 1983, pp.219-236 (b).

Wolf, T.A. Estimating "foregone gains" in Soviet-East European foreign trade: a methodological note Comparative Economic Studies, 27(3):83-98, 1985.

Wolf, T.A. - Hewett, E.A. A puzzle in Soviet foreign trade statistics and possible implications for estimates of Soviet arms exports to developing countries US Congress-JEC Soviet economy in the 1980s: problems and prospects Washington, USGPO, 1982, pp.575-581.

Woolcock, S. Western policies in East-West trade London, Routledge & Kegan Paul, 1982.

Zimmerman, W. Dependency theory and the Soviet-East European hierarchical regional system: initial tests Slavic Review 37(4), 1978.

Zoeter, J. P. USSR: hard currency trade and payments US Congress - JEC Soviet economy in the 1980s: problems and prospects Washington, USPGO, 1982, pp. 479-507.