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Dependencies and Interdependencies

A Theoretical Comment

by Wolfgang Bärtschi, Berlin *

In the area of foreign trade theory, the theorem of unequal exchange, in the area of social sciences in general and in the sphere of development policy in particular, the "dependencia" approach, and in the politico-economic area, the interdependence approach, have yielded important results and — more important — may yield more results. Those working on world models should try to integrate these results into their future research more effectively.

In recent years, the demand of the developing countries for a "New Economic Order", the oil price "shock" of 1973/74, and the more or less concurrent worldwide economic crisis, have made it a commonplace to speak of an increase in economic interdependence among the world's nations. Regarding the first two subjects, the political dimension of increased economic interdependence stems from the conflict between the North and the South; regarding the third, increased economic interdependence is only partially reflected in the conflict between North and South, because the economic crisis by and large affects the industrial countries of the West, the "rich North" — at least according to the prevailing perception. For every nation it is clear, however, that the tendencies of stagflation are not only "home-made", but also — and possibly more so — internationally and interregionally made. In addition, the quadrupling of the oil prices in 1973 has been explicitly called a "weapon" against Israel by the oil producing countries. This is one indication of the relationship between world politics and world economics and (keeping in mind the different economic consequences for different countries) the relationship between national economies and the international economy at large.

This is just one example of international political-economic interdependencies. Others could easily be added — including such recent ones as the pressure exerted by the Americans on West Germany to fulfill its function as a "locomotive" for the recovery of the western economies. It is surprising that such international interdependencies are seldom central topics of economic and political research. And this deficiency can be traced back to a lack of conceptualization, as can be

demonstrated by examining three basic theoretical approaches.

The traditional theory of international economics is fundamentally based on a two-country model, which provides an explanation for when the establishment of trade relations between two countries is advantageous. Within the framework of the theorem of comparative advantage the criterion of advantage is a calculus of universal efficiency. This entails the specialization of two countries in the production of those goods in which they enjoy a comparative advantage and results in an increased production *altogether* with the same labour and capital input or results in the same output with less factor input. In other words, national product specialization and international exchange of goods increase economic welfare worldwide.

This is the key argument of international economics, and it reveals that the theory of international economics is at its root international trade theory (such important elements of international economic relations as capital transfers, labour migration, and exchange rate changes are not either considered at all or not sufficiently considered). Nevertheless, the theorem of comparative advantage has always provided the cognitive legitimation for the demand for free trade and liberalism in the sphere of international economic relations, even though it is not able to explain the distribution of the gains from trade. Beginning with the classic theorem of comparative advantage, followed by its neoclassical variant, and sustained by the factor proportion theorem, it has always been included in the teaching of accepted economics, with no additional material elucidation. However, by reformulating the classical version and by including the distributional dimen-

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sion, the theorem of unequal exchange provides an explanation for the gains from trade¹. Combined with the theorem of comparative advantage, the positive conclusion is that both countries involved in international trade gain by trading; however, the more productive nation gains more than the less productive one.

The Theorem of Unequal Exchange

The theorem of unequal exchange basically implies nothing more than a return to classic reasoning in economic theory, although with some change of emphasis. The only possibility for operationalization is the neoclassical instrument of the double factorial terms of trade². However, since the theorem has been developed in close association with marxist notions, it has always been relegated to an "outsider" position in economic reasoning, and has sometimes been ignored and other times received with ideological enmity. These reactions may stem in part from the fact that the most vociferous adherents have — strangely enough, or maybe typically enough — not been economists by education and consequently have grossly misunderstood its potential of reasoning and argue for conclusions which cannot be sustained. The climax of this "theoretical" position is the demand for a dissociation of the peripheral countries from the capitalist world market³, because the theorem of unequal exchange is considered incompatible with the theorem of comparative advantage. What they fail to understand is that the theorem of unequal exchange supplements the positive reasoning of the comparative advantage theorem internationally: the universal gains from specialization and trade are internationally unequally distributed. And the normative aspect, the demand for worldwide free trade, is set against contradictory national economic interests. Thus, the positive and the normative aspects of the theorem are confounded.

The Dependencia Approach

In the terms of the history of economic ideas, this may be considered a successful combination of Ricardo and List. It also indicates the theoretical core of the *dependencia* approach, i.e. the economic dependence of the peripheral countries on the metropolises is perceived as biased and disadvantageous. It rests on a misunderstanding or

an over-interpretation, which manifests itself most visibly in the demand for a severance from the world market in order to eliminate the causes of the underdevelopment of the periphery. For it is one thing to justly complain about the traditional monocultivation in agriculture, the impediment of the accumulation, reproduction, and processing potentials, the possibilities of transferring domestic capital abroad and penetration by foreign capital, the outward looking domestic industries which are closely integrated into the world market and do not sufficiently supply the respective domestic markets in the third world countries which are voiced by the *dependencia* approach, and it is quite another thing to have a theoretical key for the legitimation of a trade policy.

There is no doubt that within the periphery and among the metropolises, as well as among periphery and metropolises, there is inequality in economic development, division of labour, and exchange relationships. However, the exchange conditions as analyzed by the theory of international trade constitute only one — the international — cause for the poverty of the third and the wealth of the first world. The analytical instrument, the double factorial terms of trade, indicates empirically how different developments in productivity and export prices manifest themselves over the course of time, i.e., a transfer of real income in specified amounts takes place between the periphery and the metropolises via international trade. But this cannot explain the determinants of development here and underdevelopment there; there must be national determinants in addition. On the other hand, the theorem of unequal exchange only implies that the gains from trade are larger for the first world countries than for the third world countries, without denying that there are regional and national gains from specialization according to comparative advantages for all countries involved. The theorem of unequal exchange in no way contradicts the comparative advantage theorem, i.e. the universal advantage of international trade. As an example, consider the question of how peripheral countries, in which monocultivation in agriculture prevails, can increase their standards of living without the exchange of goods? By increasing their banana, coffee or crude oil productions and the respective consumptions?

This cannot be meant, of course, but since the *dependencia* approach can explain part of the consequences of the international division of labour (namely that part which caused those deformations of the periphery by way of "structural" dependencies), it has rightly and wrongly been described as a "sociological immunization" of the fact of underdevelopment. Wrongly, because only a combination of historical, economic, political,

¹ Cf. W. Bärtschi, H.-D. Jacobsen, Kritische Einführung in die Außenhandels-theorie (Critical Introduction into the Theory of Foreign Trade), Reinbek bei Hamburg 1976.

² Cf. as a first attempt towards an empirical analysis W. Bärtschi, Ausbeutung und Einkommensumverteilung in den internationalen Wirtschaftsbeziehungen (Exploitation and Income Redistribution in International Economic Relations), Berlin 1976.

³ Cf. e.g. D. Senghaas, Weltwirtschaftsordnung und Entwicklungspolitik. Plädoyer für Dissoziation (World Economic Order and Strategies for Development. In Defense of Dissociation), Frankfurt/Main 1977.

and sociological elements will be able to explain development and underdevelopment, although at the descriptive level, the *dependencia* approach has told us more now about the causes and consequences of the integration of national economies into the international economy than has been offered by the various academic disciplines individually so far. Rightly, because these multifarious new creations of sociological terminology do not exonerate the *dependencia* approach from conceptualizing an empirical set of indicators which would make possible an instrumental and quantitative analysis of such phenomena as "structural heterogeneity", the lack of "coherent economic circulation" or the "enclaves" of industrial branches able to compete in world markets. Regarding the theory of international trade, the potential of explanation of the unequal exchange theorem has been overextended, and regarding social sciences in general, the theorem has not been conclusively tested in the empirical realm.

Biased Approach Not Providing Strategies for Action

For if one tries to empirically validate the *dependencia* approach, its monocausal international (-regional) and partial nature will at once become apparent: methodologically it is lacking a counterpart to the developing countries. This is corroborated by a recent attempt at formalizing the *dependencia* approach and measuring dependence⁴. Although there exists now this "desociologized" *dependencia* model (which has not yet been empirically tested, though), its likely results may be anticipated now: The periphery at large is dependent on the capitalist world market to a certain amount, each individual peripheral country is also dependent on the "rest" of the capitalist world, and the dependencies vary in the course of time between certain extremes. And now? Since the dependencies thus derived are considered bad, one argues in favour of a reduction of these dependencies without being able to specify a) the costs and gains of such a severance, b) who constitutes the amorphous "rest" of the world, and c) whether and under which conditions the dominant partner of the international division of labour (the metropolises) will tolerate such a strategy of dissociation by the dependent peripheral countries. In other words, the biased *dependencia* approach, granting its heuristic value in the description of the economies of the periphery which are dependent on the world market, cannot provide

strategies for action because the "other side", i.e. its metropolitan counterparts are not brought into the picture. Viewed from this angle, the lamented dependencies are nothing else but a value judgement.

The Interdependence Approach

At this point lies the methodological relevance of the interdependence approach, which analyzes not only one-sided but also mutual dependence relationships. Regarding the relationship between periphery and center, this means that not only the first is dependent on the second, but also that both are dependent on each other. The "more" or "less" of the one or the other side is covered by the concept of "asymmetry", and the onesided dependence of the periphery on the metropolises evolves into an asymmetric interdependence among them. This is the inter-country component. It is completed by an explicit consideration of national economic policies and objectives for which Bergsten, Keohane and Nye have suggested seven criteria "against which to judge the effectiveness of any international economic system: efficiency, growth, full employment, income distribution, price stability, quality of life, and economic security"⁵ whereby particularly the last one links politics and economics. In general, the interdependence approach methodologically generalizes the *dependencia* approach, while including its multinational and -sectoral aspects and comes closer to the real politico-economic problems.

Herein lies the basically correct focus of the interdependence approach. It should be borne in mind, however, that this branch of research is much younger than the *dependencia* approach and that it has not yet surpassed completely the state of formulating "agenda for research". This is merely a problem of time. It should also be borne in mind that the renaissance of politico-economic interdependence as a topic of research (to the extent it surpassed the measurement of intensities of international interactions) also had an ideological function: the American generated interdependence approach explicitly responded to the Latin American generated *dependencia* approach by rightly trying to generalize it and by wrongly trying to ignore the inequality of mutual interdependence, i.e. the asymmetry of international economic relationships.

Today, this conflict of contending approaches may be relegated to the history of ideas, if one wishes so. On the other hand, it should be maintained, that the research in the area of interdependence has not yet completely surpassed the descriptive level. And if the research is quantitatively oriented it confines itself almost exclusively to the mea-

⁴ Cf. R. Duvall, S. Jackson, B. Russett, D. Snidal, D. Sylvan, A Formal Model of "Dependencia" Theory: Structure and Measurement, mimeo, and D. Snidal, R. Duvall, S. Jackson, B. Russett, D. Sylvan, Testing "Dependencia": An Overview of the Yale Dependence Project, mimeo.

⁵ C. F. Bergsten, R. O. Keohane, J. S. Nye, International economics and international politics: a framework for analysis, in: International Organization, Vol. 29 (1975), No. 1, p. 26.

surement of international interaction and its varying national intensity. To give just one example, the volume of foreign trade of various countries is put in relation to the GNP of these countries in order to establish "more" or "less" dependence of these countries on the world market. To put it in a more general way: the indicators of interdependence, i.e. the instruments for the empirical measurement of mutual dependencies, are relatively underdeveloped as yet. Though there are catalogues of indicators especially on the level of goods and capital transfers which are considered important⁶, there are no comprehensive quantitative measurements on the basis of these interdependence indicators so far. Additionally we lack a more thorough conceptualization and instrumentalization of the concept of "asymmetry of politico-economic interdependencies", for as long as we do not know in which way different foreign trade quotas affect other economic variables (beyond GNP in the above-mentioned example), the concept remains an empty shell.

Consequences of the Deficiencies of Approaches

Having described the deficiencies of the (neo-classical) foreign trade theory, the (sociological) *dependencia* approach, and the (politico-economic) interdependence approach, the latter two *not* qualifying as theories, in spite of the often-voiced assertion to the contrary, we note that these deficiencies have their necessary consequences when one tries to depict and predict "world development". This applies to the global simulation models of the world development from the "limits to growth" (Meadows) to the "limits of poverty" (Bariloche) models⁷. For in these models, the politico-economic sphere remains in a deficient state because of the insufficient analytical connection of national (internal) and international (external) determinants of growth and poverty. In contrast to foreign trade theory, as well as to the interdependence approach, both of which potentially embrace all existing countries, this deficiency stems from a basic fault in the existing global simulation models, namely their insufficiently differentiated regionalisation⁸ and the resulting disregard of the politico-economically determined interaction patterns of the regions (nations) analyzed. In addition, this deficiency is linked

to the de-politicised and de-economised problem areas which may be changed at will — be it foodstuff shortage, resources shortage, population growth, industrial production, environmental pollution, satisfaction of basic needs or others. Depending on the selection and combination of the so-called global topics and depending on the aggregation of national states into geographic "regions", the authors of these world models deduce solutions which are either economically irrelevant or else politically ineffective because they do not specify who has to change what involving which costs in order to attain which objectives.

The Role of Global Models

Within the framework of global modeling, many different variables are connected, but this interdisciplinary attempt has resulted in a weakening of foreign trade theory and of the interdependence approach thus far. This weakening cannot be compensated for by asserted statistical significance⁹. For it seems evident that the global perspective and computer simulation allow an analysis of international imbalances as well as their determinants and consequences by way of a worldwide summation of national aggregates: these are the analytical value of the global perspective and the instrumental relevance of computer simulation. But for the adequate incorporation of international imbalances, as well as their causes and consequences, into world models, we need a theoretical concept of national and international politics and economics which as yet cannot be detected in the existing quantitative world models.

Referring to the Meadows model this means e.g. that, due to the "physicalization" of goods, the world is treated not only as priceless but also generally lacking an economy. This is one extreme. The global one-good models like MOIRA, which focuses on foodstuff production and distribution, may be viewed as an example of the other extreme¹⁰. For the worldwide foodstuff shortage as presented here does — strictly speaking — not exist at all. What exist, though, are interregional welfare differences which express themselves in the inability of a large part of mankind to pay for

⁶ Cf. e.g. A. Pinto, *Notas sobre desarrollo, subdesarrollo y dependencia* (Notes on Development, Underdevelopment, and Dependence), in: *El Trimestre económica*, Vol. 39, No. 154, April-June 1972; D. Nohlen, F. Nuscheler, *Handbuch der Dritten Welt* (Third World Handbook), Vol. 1, Hamburg 1974, p. 358; R. R. Kaufmann, D. S. Geller, H. I. Chernotsky, *A Preliminary Test of the Theory of Dependency*, in: *Comparative Politics*, Vol. 7 (1975), No. 3.

⁷ Cf. e.g. D. Meadows et al., *Die Grenzen des Wachstums* (The Limits to Growth), Reinbek bei Hamburg 1973; M. Mesarovic, E. Pestel, *Menschheit am Wendepunkt* (Mankind at the Turning Point), Stuttgart 1974; A. O. Herrera, H. D. Scolnik et al., *Grenzen des Elends, Das BARILOCHE-Modell: So kann die Menschheit überleben* (Catastrophe or New Society, A Latin American World Model), Frankfurt am Main 1977.

⁸ As exceptions the Leontief model and the RIO project may qualify. The first (cf. *The Future of the World Economy. A United Nations Study*, Oxford University Press 1977) is based on input/output matrixes, thus constituting a technic of analysis void of politics and referring only to the level of production, while the second (cf. *RIO, Reshaping the International Order*, J. Tinbergen, coordinator, New York 1976) lacks all quantitative analysis, thus remaining on the descriptive level.

⁹ Cf. e.g. the early critique of G. Myrdal against the limits to growth model, in: W. L. Oltmans, *Die Grenzen des Wachstums, Pro und Contra* (Limits to Growth. Pros and Cons), Reinbek bei Hamburg 1974, p. 33.

¹⁰ Cf. e.g. MOIRA: *A Model of International Relations in Agriculture*, Papers for the Third IIASA Symposium on Global Modeling (Food and Agriculture), Laxenburg, 22.-25. September 1975.

the necessary foodstuffs. Malnutrition and death from starvation in third world countries may at first sight be linked to bad harvests, insufficient crop yields, fertilizer shortages and other indicators which may seem helpful, but their asserted global dimension is in reality a problem of international (interregional) income distribution and its determinants. For this very reason, the traditional key topics of the discussion on foodstuff shortage – e.g. whether or not the world price for wheat should be high in order to generate production incentives for potential peripheral producers although potential peripheral consumers will unlikely be able to pay for the foodstuff thus produced, or whether a world price artificially kept low will force US farmers to reduce their production which will decrease the amount of wheat available for international distribution – reveal repeatedly the deficiencies of the conceptualization of the global one-good models, as well as the deficiencies of the neoclassical maximization approach in general.

All economic submodels of existing world models are of neoclassical descendance, and the neoclassical theory degenerates at its root into a "Modellplatonismus" (Albert)¹¹ and "mathematical scholasticism" (Riese)¹². There are general reasons for this. First, neoclassical reasoning is merely a theory of the allocation of resources controlled by market prices, lacking any basis in production theory and exchange theory. Second, the law of diminishing returns to scale implies that saturation, prestige purchasing, and the consumption of inferior goods are not taken into consideration as behaviour parameters. Third, the calculus of welfare maximisation at best is able to describe a short-term phenomenon and is completely devoid of content if used as a long-term strategy of development. The stabilization policies practised by governments in the industrial countries of the West for decades and the concurrent increase material welfare of the population of these countries reveals that the neoclassical line of reasoning is less and less able to explain and analyze the phenomena of the empirical world. With regard to the determinants

and consequences of international exchange this has always been the case and supports our conclusion that the neoclassical paradigm is unsuitable for an economic long-range model and, therefore, for the computer simulations of world models based thereon.

A similar consideration applies to the way politics is dealt with in these world models. Not only because the geographic "regions" do not have decision making bodies in actual politics (which as yet have been the exclusive domain of sovereign states), but also because the decisions are not really political decisions. These decisions are reduced to mere technical selections of alternative strategies of action. This concept of politics – especially evident in the Club of Rome models – implies a determinism which renders these models theoretically inferior in comparison to the interdependence approach. Nations, their interests and policies are rarely, if ever, considered sufficiently in these models.

For the study of international relations these considerations suggest that, in the area of foreign trade theory, the theorem of unequal exchange, in the area of social sciences in general and in the sphere of development policy in particular, the *dependencia* approach, and in the politico-economic area, the interdependence approach, have certainly yielded important results and – more important – may yield more results. It might be helpful, though, if those working on world models try to integrate these results into their future research more effectively; otherwise the global constraints and the impact of nationally dependent and internationally asymmetrically interdependent economies and nation states will be unduly neglected. Regarding the theory of international relations this has been the case for too long.

¹¹ H. Albert, Modellplatonismus. Der neoklassische Stil des ökonomischen Denkens in kritischer Betrachtung (A Critical Analysis of the Neoclassical Style in Economic Reasoning), in: H. Albert, F. Karrenberg (Hrsg.), Sozialwissenschaft und Gesellschaftsgestaltung, Berlin 1963, p. 45.

¹² H. Riese, Politische Ökonomie oder mathematische Scholastik? Genesis, Bedeutung und Grenzen neoklassischen Denkens (Political Economy or Mathematical Scholasticism? Genesis, Significance, and Limits of Neoclassical Reasoning), in: Zeitschrift für Wirtschafts- und Sozialwissenschaften, Vol. 3 (1975), p. 193

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