

A Brief Overview of the Theory of Unequal Exchange and its Critiques

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Abstract

*The idea that trade may benefit parties unevenly has been a recurrent theme in international trade theory. One of the most influential formulations of the idea is the theory of unequal exchange developed by Arghiri Emmanuel in his 1969 book *L'échange inégal: Essais sur les antagonismes dans les rapports économiques internationaux*. Since its initial exposition, the theory of unequal exchange has stirred a lot of criticism and discussion. This study aims to provide an overview of the evolution of the idea of unequal exchange, Emmanuel's presentation of it and its subsequent critiques. A close look at the discussions around unequal exchange reveals that despite its limitations as a general theory of uneven development or a theory of international prices, the theoretical and empirical discussions it has stimulated are still relevant as evidenced by the recent reincarnation of the concept in relation to ecological economics.*

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1. Does Trade Benefit All?

The idea that trade may benefit parties unevenly is an old one, with premises in the mercantilist thought. Since late 16th century the possibility of uneven distribution of gains from trade has been a recurrent theme in international trade theory. However, since the neoclassical reformulation of the works of D. Ricardo and J. S. Mill on international trade, the predominant conception has been that trade based on comparative costs is beneficial to all parties. The explicit reference to how trade can benefit one national economy to the detriment of the other in the works of classical writers, A. Smith, K. Marx and even D. Ricardo has been simply overlooked. Until late 1960s and 1970s, major criticisms of the orthodox Heckscher-Ohlin-Samuelson framework have been based solely on the empirical relevance of its assumptions and failure of its basic predictions.

The idea that free trade based on comparative costs in a world of factor mobility intrinsically involves transfers of value between national economies, on the other hand, has been on the agenda of Marxist discussions since the turn of the 20th century. Marx himself was highly critical of the vulgar economist who failed to see this evident phenomenon. In spite of his frequent remarks and passages on the issue, Marx did not devote an exclusive chapter or manuscript to a comprehensive theory of international trade involving transfers of value among countries. Most of the Marxist arguments on the issue fell on his followers to be worked out in relation to theories of imperialism¹.

R. Hilferding, in his 1910 book *Finance Capital*, introduced the idea of the latest phase of capitalism, which is characterized by monopolies, the emergence and domination of finance capital as well as expansionist imperialistic policies. This argument, which itself was heavily influenced by J.A. Hobson's 1902 book *Imperialism, a Study*, provided the inspiration for consequent formulations of theories of imperialism.

R. Luxemburg's analysis in her 1913 book *The Accumulation of Capital* rests on a vent-for-surplus theory of trade, where central capital needs to expand geographically to realize its surplus value. As such, the inclusion of peripheral regions to the world capitalist economy is necessary for the realization of surplus value.

¹ For a comprehensive account of Marxist theories of imperialism, which is beyond the scope of this introductory section, see J. Milios and D. Sotiropoulos (2009), M.C. Howard and J.E. King (1989) and A. Brewer (1980).

The realization of surplus in the periphery brings about the destruction of the economic and social organizations of the periphery mostly through direct military coercion. While her analysis reveals how the advanced capitalist countries could dictate the direction and content of trade through direct coercion it does not overtly refer to the inequalities of exchange.

O. Bauer, on the other hand, in his 1913 article *Die Akkumulation von Kapital*, writing in review of Luxemburg's *The Accumulation of Capital*, develops a model to demonstrate the possibility of continued accumulation in a closed economy, thus denying the necessity of imperialism for the realization of surplus value. The model itself does not hold much water mathematically but his consequent discussion on cyclical nature of accumulation turns out to be quite influential. He thinks periods of over accumulation and under accumulation occur as the pace of capital accumulation adjusts to the growth of the available workforce. Imperialism in this context is a search for labor power, raw materials and mass markets in remedy of over accumulation crises.

K. Kautsky's 1914 article *Ultra-Imperialism* brings up the controversial idea that the next phase of capitalism may be a peaceful collaboration of great imperialists of the time in world exploitation. He observes that imperialism replaced free trade as a means of capitalist expansion but at the same time created sharp contradictions between the industrialized capitalist states. Pursuing these contradictions towards war is not in the best interest of the capitalists, thus the translation of cartelization into foreign policy: a phase of ultra-imperialism is plausible. Not only had this optimistic outlook on the eve of the First World War proved incorrect it also stirred severe refutation, especially from Lenin and Bukharin.

N. Bukharin's 1915 work *Imperialism and World Economy* builds upon both Hilferding and Luxemburg. He focuses on the simultaneous nationalization and internationalization of capital as the central contradiction of modern capitalism. He defines world economy as a system of production relations and, correspondingly, of exchange relations on a world scale. He believes these production relations were established not only in the process of commodity exchange but also in movements of money capital as well as other forms of economic relations like the migration of labor power, the establishment of enterprises abroad, the movement of the surplus value obtained, workers' remittances, etc. For him imperialism is the policy of conquest of finance capital. However he does not dwell on how imperialism brings about an uneven development of different regions, instead he refers to different natural conditions and levels of development of production forces in different areas in a matter of fact manner.

Lenin's basic argument in his 1916 book *Imperialism, the Highest Stage of Capitalism*, is that after a certain level of finance capital is accumulated in the most advanced countries, a process which is brought about by the transformation of competition into monopoly, these countries turn to colonial policies of appropriating the rest of the world (Dussel & Yanez, 1990). The result is direct colonies as well as many other dependent countries, which are economically organized in accordance with the interests of the concentrated capitals of the advanced countries. This is the global imperialist chain, which leads to uneven development. In fact, according to Lenin, the even development of different undertakings, trusts, branches of industry, or countries is impossible under capitalism.

One of the earliest attempts at tracing out and formulating value transfers due to unequal exchange was by H. Grossmann in his 1929 book *The Law of Accumulation and Breakdown of the Capitalist System*. Grossmann believed everything necessary to formulate a coherent Marxist international trade theory was already present in Marx's own work (Raffer, 1987). He used Marx's example of the European and the Asian country in *Capital* vol.3, assuming different rates of exploitation, different organic compositions of capital and a uniform rate of profit in the world market. His result shows that, as the uniform world rate of profit is obtained by means of capital exports towards high profitability countries, products of the country with a higher organic composition of capital are sold at production prices that are always above their values and products of the country with lower organic composition of capital always sell at prices of production lower than their values. Thus surplus is distributed according to the capitals invested, from the Asian country to the European country where capitalism is more advanced. The idea of an international rate of profit is the crucial element that reveals the transfer of surplus value in this scheme (Raffer, 1987).

The existence of a tendency of the rate of profit to equalize on the world scale has been a controversial issue since this initial introduction of the idea, more so in relation to A. Emmanuel's theory of unequal exchange.

Even a decade before the widespread discussion of unequal exchange following Emmanuel's theory, Eastern German economist G.Kohlmeier was denying the existence of an international rate of profit, the reasons being twofold (Raffer, 1987). Firstly, low wages, low prices of land and low organic composition of capital as well as high rates of exploitation imply that profit rates in the periphery will usually be high. Secondly, capital is not mobile enough internationally to ensure a global profit rate. There are a lot of counter tendencies against such global equalization. In his argument unequal exchange results from national differences in the productivity and intensity of labor processes, which create absolute and relative disadvantages from international trade. Inequality of labor spent in this context refers to deviations from the international weighted averages. These averages are the underbelly of his argument, since they involve the calculation of an internationally homogenous labor unit, which is not so straightforward.

Writing in 1960s, Baran and Sweezy discuss the consumption bottlenecks created by monopoly capital and differentiate between capitalism in the advanced countries and in underdeveloped countries. They focus on monopoly capital as a source of stagnation both in advanced and underdeveloped countries as well as the dominance of foreign capital in underdeveloped countries as a deterrent for development. These ideas are followed up by the dependency school of thought in the 1970s and 1980s.

Dependency theory as represented by the works of A.G. Frank, S. Amin and I. Wallerstein is characterized by a formulation of the world economy in terms of the center and the periphery. Center refers to the advanced capitalist economies of Europe while periphery refers to the underdeveloped rest of the world where, in most instances, non-capitalist institutions prevail. This capitalist world system is characterized by monopolies and the exploitation of the periphery by the center. Surplus is extracted in the periphery and accumulated in the center. International organization of production, subcontracting, dependent state structures and international trade are all instrumental in the transfer of the surplus to the center. In this context one of the mechanisms that lead to the development and persistence of underdevelopment is unequal exchange in international trade.

The concept of unequal exchange evolved against such a backdrop of Marxist discussions and its most influential and controversial presentation was by Arghiri Emmanuel, which we now turn to.

2. Who is Emmanuel's Audience?

A. Emmanuel's 1969 book *L'échange inégal: Essais sur les antagonismes dans les rapports économiques internationaux*, which was published in English in 1972 as *Unequal Exchange: A Study of the Imperialism of Trade* provoked extensive international discussion in both Marxist and non-Marxist circles. Although his presentation was in Marxist categories, his interest in addressing a more broad and versatile audience was explicit from the start. The audience he wished to keep in touch with particularly involved the Latin American structuralist tradition developed by R. Prebisch.

In 1944 for the first time Prebisch introduced the notion of center and periphery and consequently developed the hypothesis that unequal exchange exists between the two (Love, 1990). His basic argument was that trade cycles affected primary goods exporters and manufactured goods exporters differently, because of the different economic structures in the two groups of countries. The center, characterized by a greater rate of technological innovation, well organized powerful labor unions and oligopolistic markets, experience smaller amounts of decline in her export prices in a cyclical downturn than the periphery, which lacks all these characteristics. Thus the workers of the center are able to absorb real economic gains during the upswing and keep a stable portion of the gains during the downswing, thanks to institutionally downward sticky wages. Workers of the periphery, on the contrary experience most of the system's income contraction. At around the same time H. Singer developed the argument that primary goods and manufactured goods have different income elasticities of demand so that technical progress which brings about higher incomes at the center leads to lower demand and consequently lower prices for primary goods and higher demand and higher prices for manufactured goods. The two arguments came to be known as the Prebisch-Singer thesis, explaining the tendency of the terms of trade for the periphery to deteriorate over time. The focus of the Prebisch argument was differences in the level and flexibility of wages in the center and the periphery, monopoly pricing at the center was also mentioned as a secondary element.

Latin American structuralists following the path of Prebisch were not Marxists per se. Their initial rejection of the theory of comparative advantage was not formulated in Marxist categories. They claimed that the existence of institutional structures that are beyond the postulates of the Heckscher-Ohlin-Samuelson framework made the framework redundant.

Although Emmanuel considers himself a Marxist himself, his theory of unequal exchange is accepted to be influenced by Prebisch for some and to be a continuation of the Prebisch argument in Marxist categories for others. The particular way Emmanuel put his argument allows for a wide range of analytical representations, from simply neo-classical models, neo-ricardian matrix systems to orthodox Marxist schemes, thus the versatile literature that followed.

3. What is Unequal Exchange?

In his *Unequal Exchange: A Study of the Imperialism of Trade*, Emmanuel starts out with price formation in a simple commodity economy with a single factor of production, labor. He envisions a society of independent workers owning their tools as their inalienable property, where the free exchange of the products of the workers is inevitably on the basis of the amount of socially necessary labor expended on them. Reducing individual labors expended to a homogenous labor unit takes place according to Marx's account in *Capital* vol.1. In this framework the labor theory of value and the cost of production theory amount to the same thing. Exchange value can be measured by the amount of labor expended during production in value terms and by the rewards to that labor in money, with equal precision. Equilibrium prices are defined to be the set of prices at which the movements of the factors towards or away from any particular branch of the economy ceases completely. Thus all branches are simultaneously in equilibrium and in the case of a single homogenous mobile factor; it corresponds to a situation where the factor is rewarded equally in every use.

When the framework is extended to take into account several factors, the equivalence between labor theory of value and the cost of production theory ceases to be so straightforward. Emmanuel particularly considers the case for two factors, capital and labor. While labor can be reduced to a homogenous unit as in his simple commodity economy, capital according to Emmanuel is always homogenous by its nature². Its mobility, on the other hand makes sure that equilibrium rate of profit must be the same in all branches of the economy, just like the equilibrium wage rate. Deviations from the equilibrium bring about movements to restore it, thanks to the factors being internally competitive, i.e. mobile.

In his scheme, to have factors expended and factor rewards correspond to the same exchange value, both factors must be homogenous, mobile and must enter the production of all commodities in the same proportion. When the proportionality condition is violated, exchange values can only be calculated on the basis of the rewards to the factors i.e. costs of production. Emmanuel claims it becomes impossible to establish a common ground to sum the amounts of the two factors expended, so cost of production theory of prices becomes the only way to go.

Before moving onto the issue of formation of international prices, he discusses the direction of causality between prices and rewards of the factors, making use of Marx's calculations of the prices of production. His conclusion is that, within the framework he developed so far, causality cannot run from prices to factor rewards. Thus wages will be the independent variable in his subsequent analysis.

So far, only price formation within a national economy has been considered. When it comes to international trade Emmanuel's starting point is Ricardo, who assumes all factors of production are immobile across borders and international trade is the equalizing mechanism for prices. He traces out the transformations undergone by the world capitalist economy and concludes that, capital now is highly mobile and labor to a great extent immobile. The mobility of capital ensures a uniform international rate of profit, while disconnected national labor markets ensure significant autonomous wage differentials between developed and underdeveloped countries. Developed countries are characterized by high wages, high organic composition of capital, continuous technical innovation and high labor productivity, while opposite conditions holds for the underdeveloped ones. Thus, in the periphery the rate of exploitation and the rate of profit are much higher³.

Under these conditions, transformation of values to prices involves two types of non-equivalence. One is what Emmanuel calls unequal exchange in the broad sense, which arises from different organic compositions of capital.

² This understanding is not shared by some critics like Harris N. (1991), who claims he should have differentiated between the highly mobile financial capital and the relatively immobile productive capital.

³ That is according to Emmanuel. Whether or not a lower wage immediately translates into a higher rate of exploitation was discussed by Houston and Paus (1987). Their conclusion is that it does only if equal productivity in the center and the periphery is assumed. However, this assumption conflicts with the question addressed in the first place, i.e. uneven development.

This occurs even when both the profit rate and the wage rate equalize internationally. International equilibrium prices are established on the basis of equilibrium rates of profit and wage, which are weighted averages themselves. These prices bring about transfers of surplus value from enterprises and countries with a lower than average organic composition to those with a higher than average composition, as equalization takes place within the countries and between them.

The other is unequal exchange in the strict sense, which occurs due to differences in wage rates in addition to different organic compositions of capital. Emmanuel thinks unequal exchange in the strict sense is the concept that deserves attention because the other form of unequal exchange exists in all capitalist exchanges and is not a new concept to analyze. Strict unequal exchange, on the other hand is unique to international trade.

Prices of production are given by the sum of cost of constant and variable capital and the unique international rate of profit; so lower wage simply implies lower prices of production for the periphery. The socially necessary labor contained in the product, on the other hand is independent of the wage rate. In order to make the exposition more straightforward, Emmanuel sticks to country specific export goods in his illustrative tables. Thus, for each country specific export item, national socially necessary labor represents the international socially necessary labor. With low wages in the periphery and high wages in the center, the resulting set of international prices will lead to the periphery selling her product at less than its social value, while on the other hand center will enjoy prices higher than the value of her product. That is international prices are not proportional to relative amounts of socially necessary labor contained in the items exchanged.

It should also be noted that what is meant by international prices are prices of production, i.e. equilibrium prices as previously defined. Emmanuel assumes market prices equal to the prices of production (De Janvry & Kramer, 1979). This assumption together with his definition of equilibrium prices, which involves a general equilibrium situation that can be represented by supply being equal to demand in all markets, implies mechanisms of unequal exchange can also be put in terms of a supply demand analysis: As the higher rate of profit in the periphery brings capital inflows, the supply increases and the price decreases until profit rate is reduced to the world average, whereby prices fall below the product's labor value (Houston & Paus, 1987).

According to Emmanuel, unequal exchange in the strict sense is the proportion between equilibrium prices that is established through the equalization of profits between regions in which the rate of surplus value is institutionally different. Since the differences in rates of surplus value are the direct result of wage differentials, inequality of wages as such, all other things being equal, is alone the cause of the inequality of exchange.

Emmanuel characterizes this phenomenon as the exploitation of the periphery by the center; more precisely as the working class of the center, who are the basic consumers of peripheral goods, exploiting the fellow workers of the periphery⁴.

Although the basic idea is fairly simple, the above presentation is kept at a certain level of detail to demonstrate the wide range of controversies that constituted the subsequent unequal exchange literature.

4. Critics of Unequal Exchange

The immediate and probably the most comprehensive evaluation of Emmanuel's theory is by C. Battleheim, published as Appendix I to the English edition of the book. While acknowledging the importance of the work and the problem it addresses, Battleheim thinks the theory is debatable and partial for a number of reasons.

Firstly Emmanuel's use of the concept of rewarding of the factors of production to explain the formation of prices of production is inappropriate. Conceptualizing the labor theory of value as working only in a simple commodity mode of production and not in the capitalist mode of production leads to two different laws of value. Emmanuel's definition of a factor of production as an established claim to a primary share in society's economic product challenges the theory of value by creating the impression that incomes received by the producers constitute value. Prices of production in the Marxian sense cannot be conceived as the sum of rewards for the factors.

Emmanuel divorces the formation of value from the social and material conditions of production. Emmanuel's use of Marxist concepts gives them a status similar to that of the categories of vulgar political economy.

⁴ In fact, once the transfer of surplus occurs, how it is distributed in the center is not a straightforward consequence of the theory presented here. Gibson, B. (1980) points this out as evidence that this static theory cannot pass as a general theory of underdevelopment.

Moreover his substitution of the factors of production for the Marxist categories of forces and means of production leads to a separation of the monetary phenomenon from the production relations and productive forces. Phenomena belonging to the sphere of circulation like income of labor and income of capital cannot be grounded in the material and social conditions of production thus are not characteristic of a particular mode of production⁵. Battleheim finds Emmanuel's focus on the relations and conditions of exchange unjustified. His analysis does not tie back to the sphere of production. His definition of equilibrium and equilibrium prices, his disregard of less than competitive conditions prevents the analysis of the real consequences of wage and price movements. His method of comparing two distinct equilibrium states, with and without wage differentials, without the time dimension limits the scope of the analysis.

Secondly, Emmanuel differentiates between unequal exchange due to differences in organic composition and unequal exchange due to differences in wages, ruling out the former as unimportant. In fact, organic composition reflects technical composition in the context of a particular level of development of production relations and productive forces. Low wages and low organic composition are manifestations of that particular level. Thus, rejecting unequal exchange in the broad sense overlooks the connections between the two proposed forms of unequal exchange as well as reducing the phenomenon of uneven development of production relations and forces to wage differentials. Assuming wages to be independent in this context curtails the explanatory power of the theory. Uneven development is assumed without being derived from the model. In Emmanuel's system economic inequality is prior to exchange and stems from historical, institutional factors like imperialism that establish the initial wage differential. What the theory can explain is only the perpetuation of the inequality.

Thirdly, in relation to the question of whether the law of value operates on the capitalist world market in the same way it does within a single capitalist country, Emmanuel's answer is unsatisfactory. Emmanuel thinks the law operates the same in both cases but produces different results due to the unequal rewards of labor resulting from labor immobility. Apart from the question of the validity of assuming labor immobility, this position overlooks the complex and dialectical structure of the workings of the capitalist mode of production on the world scale. Battleheim identifies two contradictory tendencies that characterize these workings: (i) dissolution of non-capitalist modes of production within countries where capitalist mode is not predominant, as capitalism expands; and (ii) conservation of some non-capitalist forms in countries where capitalism is predominant.

These two bring about the heterogeneity necessary in the material and social conditions of production for the expanded reproduction of the capitalist mode on the world scale. Non-mobility of workers alone is far from representing the complex reality that leads to the law of value undergo complex transformations on the world capitalist market.

Fourthly, Emmanuel's conclusion that unequal exchange leads to the center countries exploiting peripheral countries is conceptually problematic. The term exploitation, in Marxist terminology expresses a production relation between capital and labor. The relation between two countries cannot be the same as a relation between classes; transfer of surplus value from the capitalists of the periphery to the capitalists of the center is not an instance of exploitation. As for the idea that workers of the center exploiting the workers of the periphery, it is even more problematic. This formulation contradicts with the international solidarity of classes, concealing the relations of exploitation that are experienced by workers everywhere.

Another immediate critique was due to D. Evans (1976) who considered Emmanuel's unequal exchange model as a generalization of both the Lewis surplus labor model and the Prebisch-Singer terms of trade model. He pointed out three weaknesses of the model. First, Emmanuel's assumption regarding the exogeneity of wages was a misreading of Marx, a point already brought up by Battleheim and shared by S. Amin (1977). Moreover since wages were independently determined, theoretically, it was possible for the periphery countries to raise the real wage and remove the inequality of exchange. His last point was that the fixed technical coefficients production and consumption assumption underlying the model did not guarantee full employment in the two trading countries.

⁵ This point ties to the argument that the theory of unequal exchange does not require the capitalist mode of production in the periphery to be valid.

In addition to these points, the country specific export goods assumption is an important axis of discussion. A. De Janvry and F. Kramer (1979) specifically attack this assumption and suggest that transfers of surplus value from the periphery to the center cannot occur when the traded goods are not country specific.

In fact this is the exact point Amin addresses by his attempt to extend Emmanuel's work to non-specific commodities. Such an extension is really crucial given the relatively exceptional status of specific items in the total volume of trade. The basic complication introduced by trade in non-specific commodities is the difficulty or even impossibility of establishing a measure of international socially necessary labor, which would be the function of international average conditions of production. In order to confine the definition of inequality to divergences between relative social values and relative prices of production, as Emmanuel does, Amin defines unequal exchange as the exchange of products whose production involves wage differentials greater than those of productivity (De Janvry & Kramer, 1979). Thus he is able to rule out transfers of value due to productivity differences. According to him, although much of the periphery is not characterized by the capitalist mode of production, international social value for an item of trade can be established on the basis of the average world conditions of production.

According to De Janvry and Kramer (1979), Amin's criticism that unequal exchange in the Emmanuel sense cannot be established with non-specific commodities is correct. They also claim that the assumption of specific goods rules out the possibility of competition between the center and the periphery in the world market, since they are producing distinctly different products.

Another point they bring up, concerns the wage differentials. Emmanuel postulates that once the initial wage differentials are established through historical, social and biological factors, they persist and they are reinforced by transfers of value, because labor immobility prevents equalization. However, lack of labor migration alone does not ensure the persistence of wage inequalities. Capital mobility in search for lower costs can compensate for labor immobility. Implicit in Emmanuel's argument is the notion of a surplus labor army in the periphery. Capital inflows, however, can exhaust this surplus by accelerating accumulation and increasing employment, thereby increasing wages. Emmanuel offers no mechanism to reverse this tendency of wages to equalize through capital movements in the long run. In fact, this effect of capital inflows to stimulate economic development in the periphery is the Marxist conventional wisdom. Some of the mechanisms that can be offered to explain the persistence of wage differentials among countries are relative sizes of reserve armies, as above, disarticulated accumulation and legislative restrictions, yet none of these are compatible with Emmanuel's assumptions of capital mobility and perfect competition. Thus within the given framework, unequal exchange is not self-sustaining as Emmanuel argues, it ceases as capital mobility increases.

B. Gibson (1980), on the other hand, claims the De Janvry and Kramer's argument is invalid. He thinks that Emmanuel's use of the labor theory of value in his expositions is a source of confusion for many scholars discussing the issue. In fact unequal exchange has nothing to do with the labor theory of value. What Emmanuel essentially does is to compare prices that prevail with existing wage differentials to prices that would prevail if wages were equal. Defining unequal exchange as a transfer of value alone does not explain in what sense one party is better off. In order for the analysis to be meaningful, the transferred surplus needs to be measured in prices, not in value terms.

Having pointed out these, Gibson goes on in a Sraffian framework, to establish and prove the fundamental theorem of unequal exchange, without the labor theory of value. The fundamental theorem says, in the simple case of two countries and two specific commodities with no trade pattern reversals, an increase in the wage rate in one country will improve its terms of trade (Gibson, 1980). When the theorem is extended to many countries and many commodities, the results become somehow ambiguous. When it is extended to non-specific commodities, a mathematical proof cannot be established.

In refuting the De Janvry and Kramer's argument about capital mobility, Gibson says, lower wages alone do not ensure higher profitability in the periphery; all other costs should also be considered. Thus, lower wages may not be sufficient to induce equalizing capital flows, so the self-exhaustive nature of unequal exchange is not as straightforward as the claim.

Lastly, Gibson raises the question of whether Emmanuel's theory constitutes a basis for a general theory of underdevelopment. He thinks not, because unequal exchange cannot account for the way the surplus is used once it is appropriated.

What actually becomes of the trading parties at the last instance depends on a complex set of over determined social factors including the nature and intensity of class struggle, the political conjuncture, etc.

The same question is taken up by A. Shaikh (1979, 1980) in relation to the broader issues of the law of international value and the Marxist theory of international trade. Shaikh evaluates how effective Emmanuel's theory of unequal exchange is as a refutation of the theory of comparative advantage. His conclusion is that it leaves comparative advantage theory intact. Emmanuel's formulation implies that "the law of comparative costs continues to determine the international patterns of trade and specialization (and hence the international division of labor)" but "the modern mobility of capital gives rise to a set of entirely new and unforeseen consequences arising from this law"(Shaikh, 1979). Moreover the Marxist critics of this theory fail to address the following two central questions: (i) Is the law of comparative costs, the international form of the Marxian law of value? (ii) Does it transform into Emmanuel's law of unequal exchange with capital mobility?

Shaikh's answer to both questions is a big no. The immediate result of the proper analysis of the laws of international exchange is that the law of comparative advantage is impossible precisely on its own grounds. In fact in the context of the labor theory of value, absolute, not comparative advantage rules international trade and an international law of value from the Marxian perspective requires an analysis much more sophisticated than tracing transfers of value. In most cases, it is not even possible to establish the net direction of these transfers. Shaikh's detailed treatment of transfers of value shows that in the real world, negative net transfers of value for underdeveloped countries is not a law as Emmanuel claims, it is only a possibility. What make it possible for Emmanuel to claim it a law are the assumptions of international profit equalization and country specific trade goods.

Shaikh's basic aim is to lay the foundation for a Marxian theory of international trade. Central to this aim is to correct the mistake of accepting the law of comparative costs for the case of competitive capitalism, which is made by most Marxist scholars. As a result of this mistaken approach, the undesirable effects of international trade can only be derived from arguments of monopoly capitalism, while Marx himself derived his arguments of exploitation, crises, concentration and centralization, etc. from a model of free competition. Once however, we acknowledge that Marx's theory of value implies a law of absolute costs, not comparative, it becomes evident that unevenness of development and gains from trade as well as all similar phenomena are the natural consequences of free trade itself. Unequal exchange in this context is only a secondary phenomenon, which cannot constitute the cause of underdevelopment.

5. Whither Unequal Exchange?

The inability of the orthodox trade theory to account for the inequality of gains from trade is empirically quite straightforward. Yet formulating a comprehensive theoretical framework that will account for them turns out to be tricky. Despite the popular use of especially the extended Amin-Saigal version of the unequal exchange theory by the dependency school in 1970s, there seems to be a consensus on its limitedness and inadequacy as a general theory of uneven development.

At the last instance Emmanuel's theory of unequal exchange seems to fall short of being a consistent and coherent refutation of the law of comparative advantage and the Heckscher-Ohlin-Samuelson framework. The theoretical and empirical discussions stimulated by this theory however, go a long way in inspiring alternatives to the conventional wisdom.

In spite of the lack of reference to this literature in most textbooks and policy discussions, the idea remains to be one of the most intriguing ones to expand upon. Recent research on ecologically unequal exchange exemplified by Odum (1988), Odum and Arding (1991), Hornborg (1998), Martinez-Alier (2003) constitutes a recent reincarnation of the idea.

Hornborg (1998) attempts to articulate the world system theory and ecological economics pointing out the parallels between the roles of labor and energy in the theory of value. Emergy refers to embodied energy, which is the amount of energy invested in a product. Odum (1988) and Odum and Arding (1991) represent a serious effort to expose the unequal exchange of emergy in international trade making use of emergy/dollar ratios and emergy exchange ratios. Hornborg himself proposes the concept of exergy, which refers to available energy. His basic claim is that market prices are the specific mechanism by which world centers extract exergy from, and export entropy to, their peripheries.

This multidisciplinary reading of the Marxist literature on unequal exchange provides a new and expanding forum of dialogue for ecologists, economists, sociologists and historians as well as showcasing how Emmanuel's contributions have not lost their relevance in today's increasingly interconnected global capitalism.

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