The 1977 Nobel Prize in Economics

This year's Nobel Prize in Economics was awarded to Bertil Ohlin of the Stockholm School of Economics and James E. Meade of Cambridge University. This is the first recognition of the specialization of international economics since the award was established in 1968. This is gratifying, since international trade used to be the central focus of classical economics in the tradition of David Hume, Adam Smith, David Ricardo, and John Stuart Mill.

Ohlin's award, given for his pioneering *Interregional and International Trade*, published in 1933, was based on his contribution to the theory of comparative advantage, originally propounded by Ricardo on the basis of the labor theory of value. The labor theory of value survives today only in Marxian economics. The mainstream of the profession of economics has long since rejected the notion that output is the work of man alone, and even the Soviet Union has had to modify the theory in order to be able effectively to allocate capital among various uses. Opposed to the labor theory is the law of variable proportions that asserts that factors of production—labor, land, capital, sometimes business enterprise—are combined in the production of given goods in varying mixes depending on the relative prices of such factors. The prices of factors determine their incomes, in the first instance at least. Eli F. Heckscher, the Swedish economic historian of mercantilism, in a pioneering article in 1919, observed that international trade altered factor prices and therefore redistributed income within a country. He failed, however, to break out of the labor theory mold. His student, Ohlin, went much further in his 1924 thesis, *Handelns teori*, which was rewritten as *Interregional and International Trade* while he was visiting the classic school of Frank W. Taussig at Harvard. The labor theory of value had had difficulty explaining why costs of production for given goods were different in different countries. Ohlin stated that different commodities were typically produced with disproportionate inputs of particular factors—wheat especially with land, for example, and machinery especially with labor. A country's comparative advantage lay in the production of those goods produced with the intensive use of factors which that country had in particular abundance. Following Heckscher, he found that trade tended to raise the price of the abundant factor as exports increased the demand for it, and that imports tended to lower the relative price and incomes of the scarce factor. On this showing, he found that trade had a tendency to equalize incomes of factors between countries. The relation between factor endowments explaining trade and trade in turn altering factor incomes gave rise to hundreds of applications, such as, for example, the view that free trade arises not from the understanding by democracies of the wisdom of economics but from the selfish pressure of the abundant factor, the interest of which happened to coincide with the general interest.

Paul Samuelson has developed, made rigorous, and extended the Heckscher-Ohlin theorem on comparative advantage to the point where it is now called the Heckscher-Ohlin-Samuelson (HOS) theorem. Among Samuelson's foremost contributions was detailing the conditions under which international trade can bring about full equalization of factor prices, and thus, if the necessary assumptions are met, eliminate the need for migration from overpopulated to underpopulated countries.

Practical Impact

Does the HOS theory work in the real world? Yes and no. In the European Economic Community (Common Market), trade does go a long way to equalize wages and rates of interest, albeit aided by some migration and capital flows. Between the developed and the developing world, however, the gap has widened. Few of the critical assumptions of the HOS theorem—such as fixed factor proportions instead of differential population and capital growth, a given state of technology available to all countries, perfect competition, and no transport costs—obtain. It is claimed by some radical and radical-leaning economists—for example, Gunnar Myrdal—that international trade tends to widen the gap because of "backwash effects" that draw off the most productive factors from poor countries and condemn them to specialize in lines of production limited in growth potential.

James Meade *Bertil Ohlin*

In addition, Wassily Leontief disturbed the acceptance of HOS in 1953 when he read a paper before the American Philosophical Society in which he "proved" that, contrary to general belief, American exports were labor-intensive and imports were capital-intensive. The measurements were based on capital-labor ratios in export- and import-competing industries that proved to be higher in the latter than in the former. Various explanations have been offered, including the criticism that the pure HOS theorem based on two goods, two countries, and two factors of production could not be expected to apply to the real world. Some found the explanation in the existence of a third factor, land, intensively used abroad in U.S. imports, but for which capital was substituted in U.S. import-competing industries, such as synthetics. Recently, explanations have run in terms of nonhomogeneous labor with exports intensive of skilled labor and imports intensive of unskilled labor.

A further attack on the reality of the HOS theory came from one of Professor Ohlin's students, Staffan Burenstam Linder, at the Stockholm School of Commerce, who like his mentor has lately abandoned economics for politics. Somewhat daringly, Linder claimed that, while the HOS theory may apply to primary production, including foodstuffs and raw materials, it lacked explanatory value for manufactures, which typically are first produced in rich countries, where a demand existed for them, without regard to the efficient factor-input mix. At least this was true in the early stages of a product's entry into world trade. Later when the technology became widely diffused, factor proportions were likely to take over. This insight has led to Vernon's theory of the "product cycle," in which one country initially monopolizes a product, such as Britain's monopoly of cotton textiles in the first half of the 19th century, only to lose its position as technology becomes diffused; it also led to an aspect of the theory of the multinational corporation, suggesting that many pioneering corporations invest abroad in order to hold on to their foreign market just as competing firms there are about to start up.

Ohlin's breakaway from the labor theory of value led him to insist on the parallels between "interregional" and "international" trade and to introduce into both strong doses of "location theory," a branch of economics founded on the responses of different goods and services to the barrier of space. At the Nobel Symposium—supported by the foundation but unconnected with the prize—on international economics held in Stockholm in June 1976, presided over by Bertil Ohlin, papers were read on both international trade and location economics.

Prior to *Interregional and International Trade*, but subsequent to *Handelns teori*, Ohlin debated J. M. Keynes on the subject of German reparations and made a signal contribution that was later taken over and subsumed into Keynes's theory of income. Keynes had argued that Germany could not lower prices enough to expand exports and reduce imports so that they would be able to pay reparations in real terms, that is, through an export surplus, because of the inelasticity of demand for German products abroad and for needed raw materials and foodstuffs at home. Ohlin countered that this view of the problem neglected the shifts in purchasing power, expansion in the receiving country, and contraction in the paying, which could accomplish much of the transfer without the need for price changes. This insight was not followed up until Keynes's *General Theory of Employment, Interest and Money* when it became standard analysis, applied today to the question of how fast the export surplus of the oil producing countries (OPEC) will disappear through increased spending at home of the proceeds of oil exports.

The League of Nations Connection

In September 1931, Ohlin wrote a report for the League of Nations Assembly entitled, "The course and phases of the world economic depression" and 25 years later headed a group of experts writing "Social aspects of European economic co-operation" for the International Labor Office. The League of Nations Economic and Financial Secretariat in the 1930's under Alexander Loveday engaged many of the best economists in the world, including Gottfried Haberler, Folke Hilgerdt, Ragnar Nurkse, Jan Tinbergen, and James E. Meade. For several years Meade edited the League's annual *World Economic Surveys*, which remain today indispensable to understanding the 1930's.

Educated at Oxford, Meade visited Cambridge under Keynes before going to Geneva and the League of Nations. During the war, he worked in the British government, writing, among other things, a pioneer book on British national income with Richard Stone, thereafter going to teach at the London School of Economics. There he wrote the classic two-volume work on *The Theory of International Economic Policy* which won him the Nobel prize. In 1957 he was appointed professor at Cambridge University, from which he has retired but remains a research fellow. As professor and research fellow he has continued his patient exposition of economic principles, writing *The Stationary Economy* (1965), *The Growing Economy* (1968), *The Controlled Economy* (1971), *The Intelligent Radical's Guide to Economic Policy: The Mixed Economy* (1975), and *The Just Economy* (1976); during this time he also published sets of lectures.

Volume 1 of *The Theory of International Economic Policy*, entitled *The Balance of Payments*, appeared in 1951; volume 2 on *Trade and Welfare*, appeared in 1955. A by-product of the overall work was *A Geometry of International Trade*, with 50 diagrams, ingeniously solving a number of problems in the theory of international trade, such as the attack by Frank D. Graham (of Princeton) on John Stuart Mill for leaving production out of international trade theory in formulating the Law of Reciprocal Demand, plus a mathematical supplement to each volume.

Meade's approach was slow to win recognition; in fact, it drew a savage attack from the "enfant terrible" of Cambridge University, Harry G. Johnson, who wrote a 20-page review in the *Economic Journal* for December 1951. Johnson's objection was largely that Meade's work was taxonomic whereas policy had to be attacked by posing particular problems in a particular context. In September 1974, a Money Study Group met at a conference to honor James Meade; Johnson, in introducing (with A. R. Nobay) the proceedings (*The Manchester School*, September 1975) offered a tribute stating that it was appropriate to honor Meade "since many of its members had been inspired by his classic work on *The Balance of Payments*." One of those so inspired, Robert Mundell, had earlier attributed the "tepid reception" not to the "unexciting prose" or to the author's "reticence in drawing attention to the originality of his own work," but rather to "the state of confusion of the science in the early 1950's, and the lack of sensible criteria by which merit could be separated from chaff."* By the time of volume 2, it was already clear that Meade had made an enormous breakthrough. In his review, T. C. Schelling called it a landmark of creative codification, "gathering up most of the content of the best known articles on the gains from trade, the terms of trade and the effects of trade on factor earnings, and gone on to anticipate the next dozen, simultaneously precluding tens of dissertations, notes and minor controversies that would have appeared in the journals."† In a phrase which has lost its ironic tone with the passage of time, Schelling states that the book follows an outline that must have been checked electronically for completeness.

Studies of Policy

Jan Tinbergen had devised the theory of policy. In retrospect, the theory is disarmingly simple. One needs as many instrumental variables—policies—as one has targets, or objectives. In the vernacular, you can't hit two birds with one stone, or mathematically, one needs as many equations as one has unknowns. Meade explored the implications of these statements, but raised in addition the problem of overdetermination. When two countries each try to use fiscal policy to correct their mutual balance of payments, there are two instruments but one target, since the disequilibrium of one country is at the same time the equivalent disequilibrium (with opposite sign) of the other. What is needed is for one country to be passive and let the other do all the correcting, or for the countries to agree together how the work of correction will be shared. The point is general. If all countries try to manage their floating exchange rates, the system is overdetermined. Either one major currency must respond passively—letting other countries choose whatever exchange rate they want and accepting the consequences for its balance of payments which is the reciprocal of that of all other countries, or policy actions must be coordinated. Mundell in particular has extended Meade's work by multiplying the numbers of targets and policies. Meade dealt with cases such as trying to achieve full employment and a stable balance of payments at the same time, with, say, macroeconomic policies of spending internally and adjusting the exchange rate externally. Mundell pushed on into complex cases where monetary policy and fiscal policy might be used in opposite directions gen-

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*R. Mundell, *International Economics* (Macmillan, New York, 1968), p. 113.
†T. C. Schelling, *American Economic Review* (September 1956), pp. 714–718.

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erally—a tighter monetary policy to attract capital and improve the balance of payments, for example, while expansionary fiscal policy improved employment. Tight money worked against the employment target and fiscal expansion worked against balance-of-payments equilibrium, but these untoward effects were dominated by the strength of the money policy on the payments target and fiscal policy on employment.

Utility Measures

In *Trade and Welfare* Meade makes enormous gains by the use of a device of dubious validity—cardinal measures of utility, rather than the normally acceptable ordinal ones. (One is prepared to say in economics that A is better off in situation X than in situation Y, but not, as a rule how much better, nor is one able to say how A's welfare in X or Y compares numerically with B's welfare in situation X or Y.) Comparing marginal values to marginal costs, and giving weights to the welfare of different countries in different circumstances, Meade works through the theory of economic welfare, and thereafter the cases for and against control of trade and of factor movements, in the two-country case and for many countries. He explores at length the "theory of the second best" which states that, if the conditions necessary for an optimum optimorum cannot be realized, movement in the direction of free trade may be dysfunctional. The best in this instance is the enemy of the good. At this level, it sounds trivial, but by exploring cases of marginal and structural adjustments, working through the requirement of efficiency and of equity, he is able to distinguish between utopian and second-best types of policy with a thoroughness that has kept the book alive in the 22 years since its publication.

While Ohlin and Meade share the Nobel award for 1977 and write on the same subject, they are entirely different sorts of persons. Ohlin is a public man, Meade a private man. They barely knew one another. But the economics profession, international economists in particular, and, to the extent that economists solve real problems, the world is in their debt.

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