In memoriam
Anthony P. Thirlwall
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With the passing of Anthony P. Thirlwall - Tony for those who had the privilege of knowing him well - the theory and empirical analysis of economic growth and development has lost a pioneer, an outstanding academic, a generous mentor and an endearing person. Tony Thirlwall, an obligatory point of reference in Keynesian thought, was a faithful believer in Keynes' notion that economic science is not a doctrine, nor a set of recipes or established mathematical formulations from which equilibrium postulates are derived to be fulfilled *urbi et orbi*. On the contrary, his applied theoretical approach and analysis method were strongly influenced by John Maynard Keynes, Roy Harrod and Nicolas Kaldor, whom he considered the most original and relevant economists of the 20th century.

Like Kaldor and Keynes, Thirlwall believed that it was impossible to model the real world accurately and that, consequently, economists should focus on identifying stylized facts. Since the primary purpose of economic science is to help improve the welfare of humanity and human beings, it must, in its method, proceed by observing certain facts and trends and then, on this basis, formulate hypotheses and submit them to analysis for eventual verification. Thus, just like them, for Tony, economic science had to base its conclusions and recommendations on analyzing stylized facts, which are historically, geographically and politically influenced.

Thirlwall's inductive approach, derived in part from his reading of Harrod, led him to prioritize the constraints imposed by demand in his analysis of the growth of productive activity. In line with his Keynesian perspective, he considered these more binding than those emerging from the supply side. His recognition or conviction reinforced this view - early in the development of his economic thought - that supply is endogenous to demand. In this respect, Thirlwall stressed that many of the fallacies, errors or omissions in the analysis of economic growth originated from considering endogenous variables as exogenous, for example, aggregate supply or the so-called natural rate of growth.

These ideas guided his analytical contributions with special relevance in international economics, growth theory and economic development. From these ideas, economic policy recommendations that have been and continue to be considered relevant for developing countries by various official entities and international organizations such as ECLAC and UNCTAD are derived. His most significant contribution to economic theory is analyzing long-term economic growth and its restriction by the balance of payments.

Its most famous and indeed simplest version, the well-known Thirlwall's Law, is based on a conceptual perspective similar in its dynamics to Harrod's foreign trade multiplier. In its essential or more parsimonious formulation, this law points out that there is an upper limit to the long-term growth rate of any economy linked to a dynamic or sustainable position of its balance of payments. A straightforward expression determines this binding constraint: the product of the growth rate of the global economy and the quotient of the income elasticity of demand for exports and the income elasticity of demand for imports of the economy in question.

In an even simpler expression, the long-term growth rate of an economy compatible with a sustainable balance of payments position is determined by the quotient of the growth rate of that economy's exports and the income elasticity of its import demand. Tony concluded from his work along these lines that in most open economies, this dynamic of the balance of payments (or indeed the balance of trade in the simplest expressions) is the primary constraint on the long-term expansion rate of productive activity and employment. He also stated that in this context, one can speak with analytical consistency of the natural growth rate and unemployment.

Incidentally, Thirlwall recognized Raúl Prebisch as a precursor of the growth model with balance of payments restriction. Already at ECLAC and later at UNCTAD, Prebisch argued that the external constraint for the periphery resulted from how technical progress was transmitted from the center to the periphery. Thirlwall's Law finds its first antecedent as a mathematical formulation in a paper by the structuralist economist Octavio Rodriguez.

Thirlwall highlighted the greater analytical power of Harrod's foreign trade multiplier over the Keynesian investment multiplier (and certainly over the neoclassical growth theory). He also recognized its special relevance as a reason, as an empirical and theoretical explanation, for the differences in the growth dynamics of different economies. One of his analytical contributions in this field was identifying the mechanism that balances countries' trade balances -via income effects and relegating substitution effects into second place to maintain consistency with Keynes' principle of effective demand and the coexistence of macro equilibrium positions with involuntary unemployment.

He also extended the use of the foreign trade multiplier to explain the differences and convergence between interregional growth rates. Thus, the analysis of an open economy under the prism of effective demand addressed one of the limitations of the General Theory (GT) pointed out by Kaldor: its omission of the problems related to international and intra-regional trade, which led Keynes to ignore exports as a central component of autonomous demand in the GT.

Thirlwall's Law has resulted in a vast generation of models of increasing sophistication and complexity to incorporate, among other things, the effects of the real exchange rate, terms of trade, services, interest payments, remittances, capital flows, as well as introducing a multi-sectoral or multinational perspective and considerations on the impacts of fixed capital investment on trade elasticities via the transformation of the productive structure. It has been widely subjected to empirical studies and corroborated in different versions for a large number of developed and, above all, developing economies in different contexts and historical circumstances.

The conclusions of this analysis, particularly for developing countries, underscore the need to implement industrial or productive development policies to transform the productive structure, strengthen its backward and forward linkages, its capacity to compete through innovation and the generation of value added, as the only feasible way to increase the long-term growth rate of economic activity and employment. A lesson that is still valid and of enormous importance today.

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