

National Academy, the American philosophical Society, and the British Academy. Samuelson's success has spread well beyond academic boundaries and his gift for translating economic theory into practical policy has also been recognized by the several foreign governments that have sought his advice.

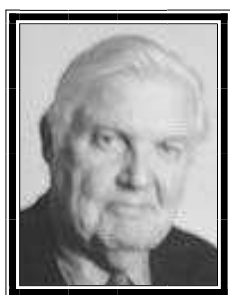
If there is anything that can be identified as Samuelson's unique contribution to economic analysis, it is his **insistence** on mathematical **rigour** in presenting economic theory. His **Foundations of Economic Analysis** showed the mathematical **underpinnings** of a wide area of economic thought, and his subsequent work has continued in that direction. Economists used mathematics long before Samuelson, but he gave the profession several leaps forward in its exploitation of mathematics.

Samuelson once described his career as "marvellous hunt through enchanted forests." They are forests all the more enchanting because of Paul Samuelson's contribution.

### *Task*

1. What is P. Samuelson different from other great economists?
2. How did he describe his first meeting with economics?
3. How did his career develop in the 30s and 40s?
4. He was recognized by many Societies and Academies, wasn't he?
5. What was Samuelson's contribution to economics?

## **3.19. Robert A. Mundell (born 1932)**



Robert A. Mundell was born in Canada in 1932. After completing his undergraduate education at the University of British Columbia and the University of Washington, he began his post-graduate studies at the London School of Economics. Mundell received his Ph.D. from M.I.T. in 1956 with a thesis on international capital movements. After having held several professorships, he has been affiliated with Columbia University in New York since 1974.

Robert Mundell's most important contributions were made in the 1960s. During the latter half of this decade, Mundell was among the intellectual leaders in the creative research environment at the University of Chicago. These were exciting times at Chicago and many of his students from this period have become successful researchers in the same field, building on Mundell's foundational work. Mun-

dell's scientific contributions are original. Yet, they quickly transformed research in international macroeconomics. Characterized by uncommon foresight about the future development of international monetary arrangements, they became increasingly relevant in the policy-oriented discussion of monetary and fiscal policy and exchange rate systems. The impact of Mundell's ideas was enhanced by the simplicity and clarity of his exposition, whether in algebraic or geometric form. A sojourn at the research department of the International Monetary Fund, 1961-1963, apparently stimulated Mundell's choice of research problems; it also gave his research additional leverage among economic policymakers.

This survey begins by describing Robert Mundell's most important contributions: his analysis of stabilization policy in an open economy and his development of the theory of optimum currency areas. After a brief account of some of his work in other fields, it is asked how well Mundell's research – several decades later – stands up to contemporary scrutiny.

#### **Economic policy exchange rates and capital mobility**

Robert Mundell has established the foundation for the theory which dominates practical policy considerations of monetary and fiscal policy in open economies. His work on monetary dynamics and optimum currency areas has inspired generations of researchers. Although dating back several decades, Mundell's contributions remain outstanding and constitute the core of teaching in international macroeconomics.

Mundell's research has had such a far-reaching and lasting impact because it combines formal – but still accessible – analysis, intuitive interpretation and results with immediate policy applications. Above all, Mundell chose his problems with uncommon – almost prophetic – accuracy in terms of predicting the future development of international monetary arrangements and capital markets. Mundell's contributions serve as a superb reminder of the significance of basic research. At a given point in time academic achievements might appear rather esoteric; not long afterwards, however, they may take on great practical importance.

#### **The Effects of Stabilization Policy**

In several papers published in the early 1960s – reprinted in his book *International Economics* (1968) – Robert Mundell developed his analysis of monetary and fiscal policy, so-called stabilization policy, in open economies.

##### *The Mundell-Fleming Model*

A pioneering article (1963) addresses the short-run effects of monetary and fiscal policy in an open economy. The analysis is simple, but the conclusions are numerous, robust and clear. Mundell introduced foreign trade and capital movements into the so-called IS-LM model of a closed economy, initially developed by the 1972 economics laureate Sir John Hicks. This allowed him to show that the

effects of stabilization policy hinge on the degree of international capital mobility. In particular, he demonstrated the far-reaching importance of the exchange rate regime: under a floating exchange rate, monetary policy becomes powerful and fiscal policy powerless, whereas the opposite is true under a fixed exchange rate.

In the interesting special case with high capital mobility, foreign and domestic interest rates coincide (given that the exchange rate is expected to be constant). Under a *fixed exchange rate*, the central bank must intervene on the currency market in order to satisfy the public's demand for foreign currency at this exchange rate. As a result, the central bank loses control of the money supply, which then passively adjusts to the demand for money (domestic liquidity). Attempts to implement independent national monetary policy by means of so-called open market operations are futile because neither the interest rate nor the exchange rate can be affected. However, increased government expenditures, or other fiscal policy measures, can raise national income and the level of domestic activity, thereby escaping the impediments of rising interest rates or a stronger exchange rate.

#### *Monetary Dynamics*

In contrast to his colleagues during this period, Mundell's research did not stop at short-run analysis. Monetary dynamics is a key theme in several significant articles. He emphasized differences in the speed of adjustment on goods and asset markets (called *the principle of effective market classification*). Later on, these differences were highlighted by his own students and others to show how the exchange rate can temporarily "overshoot" in the wake of certain disturbances.

An important problem concerned deficits and surpluses in the balance of payments. In the postwar period, research on these imbalances had been based on *static* models and emphasized *real* economic factors and *flows* in foreign trade. Inspired by David Hume's classic mechanism for international price adjustment which focused on *monetary* factors and *stock* variables, Mundell formulated *dynamic* models to describe how prolonged imbalances could arise and be eliminated. He demonstrated that an economy will adjust gradually over time as the money holdings of the private sector (and thereby its wealth) change in response to surpluses or deficits. Under fixed exchange rates, for example, when capital movements are sluggish, an expansive monetary policy will reduce interest rates and raise domestic demand. The subsequent balance of payments deficit will generate monetary outflows, which in turn lower demand until the balance of payments returns to equilibrium. This approach, which was adopted by a number of researchers, became known as the *monetary approach to the balance of payments*. For a long time it was regarded as a kind of long-run benchmark for analyzing stabilization policy in open economies. Insights from this analysis have frequently been applied in practical economic policymaking – particularly by IMF economists.