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Robert Alexander Mundell: Theorist in Search of Policy Influence

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Robert Mundell, the 1999 Nobel laureate in economics, is one of many eminent Canadian economists but the first to receive the profession's highest distinction.¹ Although he has spent most of his adult life elsewhere, Mundell's Canadian roots are far from incidental to his subsequent professional impact. Coming of age in a country closely integrated with the United States but only one-tenth its economic size may well have inspired Mundell's most enduring contributions to economic theory. Canada provided a real-life model for the "small open economy" that takes its prices and interest rates from international (read here United States) markets. Likewise, Mundell's early analysis of optimum currency areas reflected Canada's choice to allow its dollar to float during the 1950s, a period when the rules of the Bretton Woods system required members to fix their currency values in terms of the U.S. dollar.

I. Young man on the move

Like many of his fellow international economists, Robert Mundell has led a peripatetic existence. Born in Kingston, Ontario in 1932, he received his B.A. from the University of British Columbia in 1953 and his Ph.D. from the Massachusetts Institute of Technology just three years later. Along the way he studied also at the University of Washington and the London School of Economics. The young Mundell thereafter hopped onto a professional fast track that took him first the University of Chicago as a postdoctoral fellow beginning in

*Rosen Family Professor of International Finance, Brandeis University, Waltham MA 02454 (Ph.D. University of Chicago 1973). I am indebted to Russell Boyer, my Chicago classmate, for sharing his recollections and verifying several elusive facts.

¹ William Vickrey, Mundell's Columbia University colleague and also born in Canada, was selected for the Nobel prize in 1996. However, Vickrey grew up in Europe and the United States and held U.S. citizenship.

1956 and then to teaching positions at Stanford University and the Johns Hopkins Bologna Center of Advanced International Studies in Italy. By 1961, he had landed at the International Monetary Fund in Washington, D.C., where he completed much of the theoretical research cited by the Nobel Committee nearly four decades later.

In 1965 Mundell returned to academic life as a member of the faculty at the Graduate Institute of International Studies in Geneva, Switzerland. The next year he began to divide his professional life between Geneva and Chicago, where he became a professor of economics. In Chicago, the Mundells (then including his first wife, Barbara, their three children, and Mundell's own parents) occupied a grand but somewhat dilapidated mansion at the edge of Hyde Park. This home was the scene of frequent student-faculty socializing during the department's "golden age of international economics." Honored guests included such luminaries as Sir Roy Harrod and Frank Knight as well as a steady stream of younger visitors from Canada, Europe, and Australia. In 1969, Mundell's taste for crumbling elegance was confirmed by the purchase of an abandoned Renaissance palazzo near Siena, Italy. Over the years, upgrading and maintaining the palazzo has been a classic "money pit;" Mundell has earmarked a large chunk of the Nobel prize money, nearly a \$1 million before taxes, for further renovations.²

In his classroom, Mundell educated Chicago graduate students on the mysterious ways of the professional world. By that time most of his important theoretical work had appeared in book form (Mundell 1968), so perhaps this was why he felt quite free to talk about other things. He reminded us that each of his influential papers had been rejected at least once before publication, information that I invariably pass along to my own Ph.D. students. Mundell theorized that his early manuscripts had contained too many ideas. To make them more accessible to referees and editors, he decided it was best to include just one innovative idea in each submission. In his subsequent role as editor of the *Journal of Political Economy*, he changed the rule slightly, requiring that each accepted paper contain *at least* one idea.³ Another piece of advice Mundell passed along concerned the

² The structure has variously been described by journalists and former Mundell students as a former monastery, twelfth-century castle, and villa. However, all agree that its upkeep constitutes a continuing drain on the family coffers.

³ This rule may have been bent at times. Chaos reigned in the journal's Chicago office. Rumor held that an occasional submission was lost behind the radiator or file cabinet for long enough that the editors were forced to accept it without regard to intellectual merit.

presentation of theoretical results. Since economic theorizing consists of drawing conclusions from a set of stated assumptions, there is the danger that these conclusions will be too obvious and thus unworthy of publication. Mundell counseled us to enhance the reader's sense of surprise by including only every third step in any mathematical argument. The margins of my copy of Mundell's classic treatise are filled with pencilled notes that restore the omitted steps.

II. The birth of supply-side economics

At Chicago, Mundell usually swam against the intellectual tide, extolling the virtues of fixed exchange rates and a gold-based international financial system at a time when other prominent members of the department, most notably Milton Friedman and Harry Johnson, favored a move to flexible exchange rates and fiat money. Always open to new ideas, he teamed up with the equally flamboyant and controversial Arthur Laffer, then an assistant professor in Chicago's Graduate School of Business (GSB) and, like Mundell himself, an innovative thinker totally unhindered by self-doubt. Together they developed the policy prescription of low marginal tax rates and tight money that came to be known as supply-side economics, and which inspired the Reaganomics of the 1980s. In his Nobel Prize lecture decades later, Mundell still decries the combination of unanticipated inflation and steeply progressive tax rates that produced the "crisis" of stagflation in the United States and around the world in the late 1970s (Mundell 2000).

In Chicago, Mundell was one of many top-ranked economists, quite a few of whom claimed Nobels before his own turn came around. Perhaps desiring to be a bigger fish in a smaller pond, Mundell left Chicago in 1971 to join the faculty of the University of Waterloo in Canada. At Waterloo, which had been established just a few years earlier, he helped to shape his new department by recruiting friends and former students. I was just finishing my graduate work at Chicago when Mundell urged me to join the move to Waterloo, which he described as the future Canadian counterpart of M.I.T. Based on past history, however, I judged he was likely to move again before long. Since I knew it would be much harder for me to do likewise, I instead stayed in Chicago and taught at the GSB for two years. Here I followed in the footsteps of several illustrious classmates and fellow Mundell students, including Jacob Frenkel, Rudi Dornbusch, and Michael Mussa.

I turned out to be right about the Mundell wanderlust. Three years later he had indeed moved again, this time to Columbia University in New York, which has remained his professional base ever since. But despite his return to the world

of established academic departments, Mundell never returned to the academic straight and narrow. If new theoretical models emerged from his fertile brain, he didn't feel the need to publish them in professional journals. Rather, he remained preoccupied with the world of policy, continuing to push for fixed exchange rates and the supply-side policy mix. By the early 1970s, Robert Bartley and Jude Wanniski were already promoting the Mundell-Laffer worldview to readers of *The Wall Street Journal*. However, Mundell's Columbia University colleagues were apparently less than totally enchanted. Despite his celebrated contributions to international economic theory, Mundell remained a plain-vanilla professor of economics for most of his time at Columbia. Only recently was he named to the newly endowed C. Lowell Harriss Professorship.

III. Mundell's intellectual legacy

Why did Robert Mundell win the Nobel prize? According to the award citation, Mundell was recognized "for his analysis of monetary and fiscal policy under different exchange rate regimes and for his analysis of optimum currency areas." The Committee thus emphasized Mundell's pioneering theoretical contributions, mostly completed by the 1960s, that remain landmarks in the field of international economics. But others felt free to offer their own interpretation. *The Wall Street Journal* headlined its approving editorial "A Supply-Side Nobel," notwithstanding the Committee's failure to include any mention of supply-side economics in its citation. In the same issue, the paper reprinted a 1990 article by Mundell on supply-side economics, originally published in the relatively obscure Italian journal, *Rivista di Politica Economica*. Still others celebrated Mundell's role as "father of the Euro," although often confusing Mundell's consistent advocacy of a single European currency with his much earlier work, cited by the Nobel Committee, on optimum currency areas.

A. International trade and factor mobility

Although Mundell is best known for his contributions to macroeconomics, his M.I.T. dissertation and earliest published work was in the area of "real" trade theory. This literature emphasizes resource allocation, usually with the assumption of full employment. Trade is portrayed as barter, thus obviating monetary issues entirely. One such paper, Mundell (1957), stands out as a model

of deep insight from stark simplicity, as effective in its own way as the better known Mundell-Fleming model discussed below.⁴

As in much of his later work, Mundell inquires about the implications of capital mobility, in this case for the effects of a tariff (tax) applied to a small economy's capital-intensive imports. Mundell's analysis turns on the logic of the factor-price equalization theorem of international trade theory. Its stunning conclusion is that any such tariff applied in the presence of mobile capital is ultimately prohibitive. Because its application raises capital's return, capital flows into the economy, thus shifting the composition of output in favor of the capital-intensive good and accordingly reducing the country's imports of that good. The process must continue until the return to capital drops to the world level, a condition that can only be met after the country's imports of the capital-intensive good have ceased as import-competing domestic production expands.

Mundell's result has immediate implications for policy. In the presence of internationally mobile productive factors, restrictions on trade give rise to pressure for factor movements. The United States has experienced striking real-life examples of this effect. In the highly protected apparel industry, the United States imports Chinese labor rather than (more) Chinese garments. And increased protection of the U.S. auto industry quickly stimulated foreign direct investment by the same Japanese producers who had previously supplied the U.S. market from factories in Japan.

B. The Mundell-Fleming model

Of Mundell's several significant marks on mainstream economics, the best known and most widely used is the Mundell-Fleming model. Basically an open-economy version of the standard IS-LM macroeconomic framework, its central focus is the degree of international capital mobility and the associated implications for the effectiveness of monetary and fiscal policy. In separate papers, Mundell (1960, 1963) and his International Monetary Fund colleague, J. Marcus Fleming (1962), showed that international capital mobility can either reinforce or undercut the effectiveness of macroeconomic stabilization policies, depending on whether the exchange rate is fixed or floating and whether monetary

⁴ The Nobel Committee acknowledged this and other "real" work as a kind of afterthought in a short omnibus section labeled "other contributions." As a teacher and researcher in the field of international trade theory, I accord it higher ranking.

or fiscal policy is employed. The classic papers by Mundell and Fleming were likely inspired by the experience of the 1950s, when many countries gradually reduced their use of capital controls and international capital flows began to grow in importance relative to trade flows. Canada, the obvious real-world counterpart of the "small open economy" of theory, allowed its exchange rate to float from 1950 until 1961 and experienced a high degree of capital mobility, particularly to and from the United States.

The key insight in the Mundell-Fleming analysis is that when domestic macroeconomic policy raises aggregate spending, it affects the balance of payments through two distinct channels. With a fiscal stimulus (higher government spending and/or lower taxes), higher aggregate expenditure is associated with higher imports, thus pushing the current account toward deficit. In the absence of monetary accommodation, higher aggregate expenditure also tends to raise the domestic interest rate, thus pushing the capital account toward surplus. The relative size of these opposing effects depends on the marginal propensity to import and the degree of capital mobility. The net impact on the overall balance of payments or the exchange rate is therefore ambiguous. With sufficient capital mobility, however, the capital-account effect necessarily dominates. Under these conditions, a market-determined floating rate must appreciate in order to restore equilibrium. But the higher currency value shifts demand toward foreign goods, thereby undercutting the effect of the fiscal stimulus. To maintain a fixed exchange rate rather than allowing the rate to float, the central bank must buy foreign exchange. Unless intervention is "sterilized" through domestic open-market bond sales, the domestic money supply will rise, thereby reinforcing the fiscal stimulus. By this reasoning, fiscal policy is ineffective when rates are floating but effective when rates are fixed, given that capital is highly mobile internationally.

In a related earlier analysis, Mundell (1960) explored what has subsequently been called the assignment problem: the best uses of monetary and fiscal policy to achieve simultaneous "internal balance" (full employment) and "external balance" (a desired balance-of-payments position with a given fixed exchange rate). Noting that fiscal policy has an ambiguous effect on the overall balance of payments, depending on the extent of capital mobility, while monetary policy affects both components in the same direction, Mundell argued that fiscal policy should be assigned the task of achieving internal balance and monetary policy to the task of achieving external balance.⁵

⁵ The Mundell-Laffer policy package reflected similar logic.

A large subsequent literature, much of it produced by Mundell's Chicago students and their own students, has elaborated on Mundell's early work on the macroeconomics of open economies. However, the Mundell-Fleming model in its unembellished form remains a textbook staple as well as a favorite professional tool for back-of-the-envelope policy analysis. In the 1980s, the model provided a simple yet persuasive explanation of the spectacular rise in the international value of the U.S. dollar when the Reagan administration cut taxes while the U.S. Federal Reserve maintained tight money.

C. Exchange rates, optimum currency areas, and the Euro

The choice between fixed and flexible exchange rates has a long history in international economics. Mundell's widely adopted concept of an optimum currency area (Mundell 1961) focuses on the potential value of a parity change as a second-best response to a macroeconomic shock affecting only one of two regions. Much subsequent confusion results from Mundell's original terminology. As used by Mundell and subsequent writers, the term "optimum currency area" refers interchangeably to two very different regimes: fixed exchange rates between two or more national currencies (say Canada and the United States) and a single currency used in two or more regions within one country (Eastern and Western Canada). Yet "fixed" rates often come unfixed, and speculators are well aware of this possibility. Thus, the traditional discussion omits one very significant advantage of a single-currency arrangement over *any* exchange-rate arrangement linking two or more currencies. In fact, neither Mundell (1961) nor later writers in the optimum currency area literature give much space to the merits of a shared currency, perhaps because they seemed to be so obvious.

As with the Mundell-Fleming model, the context is a Keynesian world in which prices are sticky. Region-specific shocks would then cause unemployment that could be eliminated by devaluation, effectively a reduction in the region's real wage relative to its trading partners. However, this conclusion depends critically on both the inflexibility of nominal wages and the immobility of factors across regions. If factors were mobile, then a less costly way (in terms of affecting relative prices) of handling a shock would be for factors to move across borders. The more flexible labor markets are in terms of wage setting, and the more mobile labor and other factors are, the more one should lean toward a common currency. The United States, clearly a collection of regions experiencing asymmetric shocks, is often used as an example of a possible optimum currency area because of relatively flexible wages and mobile factors.

Mundell's (1961) optimum currency area analysis ignores possible costs of maintaining a fixed rate and focuses on the use of exchange-rate adjustments in active macroeconomic management. The first-best response, improving factor-market efficiency, is implicitly ruled out. Moreover, a central assumption of the analysis is that a flexible rate will move so as to restore balanced trade. Yet recent experience underscores that capital rather than trade flows are the principal driver of flexible rates. The key role of mobile capital implies that, rather than assuring full employment in the face of asymmetric shocks, flexible rates may themselves be a significant *source* of such shocks.

Advocates of a single European currency, which have long included Mundell himself (Mundell 1973a, 1973b), freely acknowledge that the European Union does not satisfy the standard Mundellian criteria for an optimum currency area. Backers of the Euro instead emphasize the efficiency advantages of a single currency over many national currencies in terms of reduced transaction and information costs, and especially potential scale economies in the financial services sector. These efficiency benefits are seen to outweigh the gains from retaining the option of national exchange-rate realignment as an element of macroeconomic management. In recent years European Union nations have in any case largely ruled out parity changes to achieve employment targets. The classic optimum currency area issue thus seems largely irrelevant to the Euro debate.

IV. Why Mundell received the Nobel prize in 1999

Unlike the other Nobels, the prize in economics has been awarded only since 1969. In the early years, it was inevitable that many prizes would be based on intellectual contributions made decades earlier. Lately, however, the trend has been to selection of younger men⁶ and relatively recent cited contributions. Each fall professional economists and graduate students entertain themselves by trying to anticipate the Nobel Committee's decision. In 1999, the smart money was not on Robert Mundell. Mundell, aged 67 in 1999, was younger than many earlier winners but older than most of the favorites in the unofficial polling for 1999. However, the work for which he is best known--the work cited by the Nobel Committee--was completed before even the first Nobel prize in economics had been awarded. This early theoretical research has indeed become the backbone of the field of international macroeconomics. Some of Mundell's ideas are now so

⁶ As of 1999, all economics winners have been men. Joan Robinson, a renowned economic theorist who might well have been chosen eventually, died in 1983.

well accepted that they no longer require citation. Yet the *timing* of the award, made in the same year that the long-debated Euro became reality, suggests that the Nobel went at least in part to Mundell the man of policy.

Two quite different but overlapping considerations may have contributed to Mundell's choice in 1999. The first is the successful launch of the Euro, of which Mundell has described himself as the godfather, or perhaps one of several godfathers. Certainly he was one of the earliest and most consistent advocates of a single European currency. Through his role in the Euro debate, Mundell regained in the late 1990s some of the professional visibility he had last enjoyed in the 1960s. At the same time, Mundell had experienced a conspicuous turnaround his personal life. Sidelined for a number of years by a variety of problems, Mundell had lately reemerged with improved health, a second marriage to poet Valerie Natsios, and an infant son. Further evidence of Mundell's personal renaissance has been supplied by his energetic response to the vast opportunities that inevitably accompany the Nobel itself. In the succeeding months, Mundell has been tireless in promoting his preferred policies. The most important topic remains the Euro, but he also continues to speak out in favor fixed exchange rates, low inflation, and low marginal tax rates.⁷ There is no doubt that Mundell won the prize for his enduring contributions to theory. Yet the greatest benefit to this laureate may be the unparalleled amplification of a policy message that only the Nobel megaphone can provide.

⁷ According to one press account, Mundell was horrified to learn that the Nobel prize itself was subject to income tax.

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