

Published by

AMERICAN INSTITUTE for ECONOMIC RESEARCH

Great Barrington, Massachusetts

01230

RESEARCH REPORTS

Vol. LXVI No. 24 December 27, 1999

The 1999 Nobel Prize in Economics*

The recent award of the Nobel Prize to Robert Mundell was a surprise to those familiar with his publications in the 1960s and subsequent developments in macroeconomics that relegated the simple fixed-price/static-expectations models of Mundell and other Keynesian activists to the policy dust-bin.

To understand Robert Mundell's prize-winning work we must be familiar with economic conditions and the state of macroeconomic theory at the time he wrote. A new administration that was determined "to get the country moving again" had come to office in 1961 with a profusion of goals. It planned to reduce poverty and unemployment by means of expansionary monetary and fiscal policies while securing price stability along with a strong dollar and a reversal of the gold outflow by ending balance of payments deficits. Unfortunately, the means to these laudable ends were lacking. There were too many goals and not enough policy instruments.

The problem was serious. In the Keynesian models that dominated the textbooks and the minds of the New Economists coming to power in the 1960s—or should we say impotence?—there was effectively one instrument: government deficits monetized by the central bank. Unwilling to accept the tradeoffs that previous generations had recognized, they tinkered with their model to increase its versatility—primarily by assuming away market responses to Government policies.

A striking example of this approach was "operation twist," which the administration tried to force on the Federal Reserve in 1961. The plan to twist the yield curve was supposed to work as follows: Many investors in Government securities prefer specific maturity ranges. Life insurance companies match their long-term liabilities with long-term assets, and corporate money managers invest in short terms in anticipation of taxes and accounts payable. If the preferences of these demanders of long-term and short-term se-

curities are reasonably constant, the Federal Reserve and Treasury might determine the term structure of yields by manipulating supplies.

Specifically, the intention was to reduce the supply of long-terms—to raise their price and reduce their yield, which would encourage investment and therefore aggregate demand, employment, and output—and increase the supply of short-terms to raise their yield, which would attract interest-sensitive short-term foreign capital and thereby improve the balance of payments and reverse the gold outflow. This strategy would not be inflationary because the Fed's purchases of long-terms would be offset by its sales of short-terms.

In any event, operation twist failed, and could not possibly have succeeded. In a world of profit-seeking investors, differential yields on substitutable securities cannot be fixed. A Federal Reserve guarantee of different returns brings forth arbitrageurs that inevitably cancel the Fed's efforts—unless, as during the World War II peg, it was willing to hold virtually all the lower-yielding assets in its own account and leave the higher-yields to private investors.¹

Federal Reserve Chairman William McChesney Martin Jr., had warned that the Fed's influence over interest rates was constrained by "alert arbitrage."² But his statements that "the money and credit of this country" are determined "at the grass roots" and implemented through the

money markets, the efficiency of which it was the Fed's primary task to support, were dismissed by economists.

Rather, it was believed that policymakers could accomplish anything if only they applied the mathematical models of the New Economists. If we forget that economics is first and foremost a science of human behavior and view abstract reasoning alone as proxy for human transactions, we can write as many technical relations between policy instruments and goals as we like, and solve the resulting system of simultaneous equations as if it

STOCKHOLM, Oct. 13 — The Royal Swedish Academy of Sciences has awarded the *Bank of Sweden Prize in Economic Sciences in Memory of Alfred Nobel*, 1999, to Professor Robert A. Mundell, Columbia University, New York, USA, for his analysis of monetary and fiscal policy under different exchange rate regimes and his analysis of optimum currency areas.

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....

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 [and] 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....

The question Mundell posed in his article on "optimum currency areas" [was]: when is it advantageous for a number of regions to relinquish their monetary sovereignty in favor of a common currency? ... Researchers who have examined the economic advantages and disadvantages of EMU have adopted the idea of an optimum currency area as an obvious starting point.

¹ Between 1942 and 1947 the Fed pegged the Treasury bill yield at 0.375% and long-term Treasuries at 2%, and ended up holding over 90% of the bills.

² His views were expressed in speeches (most published in the *Federal Reserve Bulletin*) and laid out most extensively in the 1952 *Report of the Ad Hoc Subcommittee* (of the Federal Open Market Committee) on the *Government Securities Market*.

* This article is by AIER Faculty Associate John H. Wood. Dr. Wood is Reynolds Professor of Economics at Wake Forest University.

meant something.

Mundell's Models

Professor Mundell fit right into this Keynesian orthodoxy. His own solution in 1962 to the twin problems of unemployment and balance of payments deficits was to expand aggregate demand through Government deficits while addressing the second problem by high short-term interest rates that would bring a flow of interest-sensitive short-term capital from abroad—on the assumption that somnolent foreigners would not defend their reserves by bidding up their own interest rates.

Mundell's assumptions of rigid wages, prices, and expectations were carried over in an article the following year. The relative effectiveness of monetary and fiscal policies depended on whether exchange rates were fixed or flexible.³ But in both cases policy effectiveness depended on the old Keynesian fixed-price assumptions—acceptable perhaps in the depths of the Great Depression but certainly not during the record inflation that by the time Mundell's article appeared was three decades old.

Mundell expanded Keynesian analysis by formally recognizing open economies, international capital flows, and differences in exchange-rate regimes—but without discarding the debilitating rigidities of the underlying model. The model that the 1960s showed to be inapplicable to the domestic economy also failed in international analysis. Aspirations to several goals managed—through rising unemployment and inflation, a run on the dollar, and finally the suspension of convertibility in 1971—to injure all of them.

These events produced a reaction in macroeconomic theory. The Keynesian model was rejected, including its popular variant, the Phillips curve, according to which inflation raised employment by cutting the real costs of labor and credit. Milton Friedman and Robert Lucas led its replacement by an approach called Rational

³ Under fixed exchange rates, according to this model, a central bank open-market purchase induces a fall in interest rates and a capital outflow; to prevent the exchange rate from falling the central bank sells foreign exchange, thereby nullifying the bank reserves created by the original open-market purchase and rendering monetary policy ineffective. Fiscal policy has the usual Keynesian multiplier effect.

Under flexible exchange rates, an increase in Government spending boosts interest rates, and the resulting capital inflow leads to an appreciation of the exchange rate and a depression of aggregate demand that offsets the effect of the increase in Government spending. Fiscal policy is ineffective. Expansionary monetary policy, on the other hand, stimulates aggregate demand by depressing the exchange rate.

Nobel Prizes in Economic Sciences to Macroeconomists

1969. Jan Tinbergen for having developed and applied dynamic models for the analysis of economic processes. (jointly with Ragnar Frisch)

1976. Milton Friedman for his achievements in the fields of consumption analysis, monetary history and theory and for his demonstration of the complexity of stabilization policy.

1980. Lawrence Klein for the creation of econometric models and the application to the analysis of economic fluctuation and economic policies.

1981. James Tobin for his analysis of financial markets and their relations to expenditure decisions, employment, production and prices.

1985. Franco Modigliani for his pioneering analysis of saving and of financial markets.

1995. Robert Lucas for having developed and applied the hypothesis of rational expectations, and thereby having transformed macroeconomic analysis and deepened our understanding of economic policy.

1999. Robert Mundell for his analysis of monetary and fiscal policy under different exchange rate regimes and his analysis of optimum currency areas.

The press has been most enthusiastic about this “prophetic” aspect of Mundell's work—the *Wall Street Journal* called him “an intellectual father” of the euro. These reactions have no basis in fact. The European Monetary Union must be seen primarily as an implication of political union. As early as 1950 the Schuman Plan referred to the ultimate objective of a federal Europe, and the association of political sovereignty with a country's own, single currency (economically optimal or not) has been accepted as completely in Europe as in the United States Constitution (Article 1, Section 8).

The EMU is an exception to Mundell's analysis in another respect. It rejects the Keynesian pursuit of full employment through inflationary monetary and fiscal policies. Admission to the Union requires fiscal rectitude, and the overriding objective of its monetary authority, the European Central Bank, is price stability.

Is There a Method to the Prize?

Nobel awards to macroeconomists have been a mixed bag. The first, in 1969, was shared by the Dutch econometrician Jan Tinbergen, who was the seminal counter of equations and unknowns in the application of monetary and fiscal policies and wage controls.

Milton Friedman received the award in 1976 for, among other contributions, “his demonstration of the complexity of stabilization policy.” Specifically he showed that Tinbergen's policies would be attenuated by private agents. Nevertheless, four years later, the prize was awarded to the econometrician Lawrence Klein, who had written that “the Keynesian economic system is essentially a machine which grinds out results according to where the several dials controlling the system are set.”⁵

It is ironic that Keynes himself had objected to this approach. In a damning review of what he called Tinbergen's “method of multiple correlation,” with its assumption of fixed coefficients, he asked:

Is it claimed that there is a likelihood that the equations will work approximately *next time*? With a free hand to choose coefficients and time lag, one can, with enough industry,

and Flexible Exchange Rates,” *Canadian Jour. Econ. and Pol. Sci.*, 1963; and “A Theory of Optimum Currency Areas,” *Am. Econ. Rev.*, 1961. See also Robert Lucas, “Expectations and the Neutrality of Money,” *Jour. Econ. Theory*, 1972.

⁵ See, for example, Jan Tinbergen. *Statistical Testing of Business Cycle Theories*, 1939, and *On the Theory of Economic Policy*, 1952; Milton Friedman, “The Role of Monetary Policy,” *Am. Econ. Rev.*, 1968; and Lawrence Klein, *The Keynesian Revolution*, 1947.

always cook a formula to fit moderately well a limited range of past facts. But what does it prove?... Is it assumed that the future is a determinate function of *past statistics*? What place is left for expectation and the state of confidence relating to the future?

But Keynes was overwhelmed by the wave that he had played such a large part in starting. The Nobel prize for economists was instituted for contributions to economic science, and the initial award was shared by Tinbergen and his fellow econometrician, Ragnar Frisch.

Klein's award was followed by James Tobin for his rationalization of Keynes's (1936) static, deep-depression liquidity-preference theory of interest.⁷ But the age of formula Keynesianism and burgeoning econometric models had passed, and no one in these categories was awarded the Nobel prize again—until 1999. Given Lucas's "transformation" of macroeconomic analysis and Friedman's "demonstration of the complexity of stabilization policy," the Academy's most recent economics award is hardly an encouragement to the cause of steady improvement in economic analysis.

The New Mundell

Although never explicitly recanting, Mundell long ago turned his back on the

⁶ Letter to R. Tyler, League of Nations, 1938. *Collected Writings*, xiv, p. 287.

⁷ See Tobin, "Liquidity Preference as Behaviour Towards Risk," *Rev. Econ. Studies*, 1958.

work for which he was awarded the Nobel prize. He was among the first to repudiate their Keynesian prescriptions of the 1960s. Before the decade had ended he predicted that the inflationary policies that he and others had recommended would lead to the breakdown of the Bretton-Woods system of fixed exchange rates linked to gold.

The violent fluctuations in prices and exchange rates following the realization of his prediction in 1971 brought a new admiration of the old monetary order that produced less inflation "in all preceding millennia put together" than in the 20th century. Mundell noted in his Nobel Lecture, "A Reconsideration of the 20th Century":

The main thing we miss today is a universal money, a standard of value, the link between the past and the future and the cement of civilization linking remote parts of the human race.

For thousands of years this role was filled by gold. The western world was a single currency area in which "currencies were just names for particular weights of gold."

...the absence of gold as an intrinsic part of our monetary system today makes our century, the one that has just passed, unique in several thousand years.

Among the advantages of the gold standard, said the former policy activist, was its performance as a "self-regulating rudder that guided policy makers toward equilibrium"—which might enable us to dispense with their interventionist advisors and their omnipotent models. □

BUSINESS-CYCLE CONDITIONS

Little has changed since our last appraisal of business-cycle conditions. According to the latest round of data, the economy should continue to grow for the next several months.

Three of the 12 primary leading indicators—*M2 money supply, contracts and orders for plant and equipment, and initial claims for state unemployment insurance* (inverted)—reached new cyclical highs in our latest appraisal of business-cycle conditions. (M2 and all other dollar-denominated series are reported in constant dollars.) The contracts and orders series warranted upgrading from probably expanding to clearly expanding based on its new high. M2 rose 0.2 percent and jobless claims dropped slightly, to 286,500. Both series remain appraised as clearly expanding.

Although not at highs for the cycle, four other leading indicators are also appraised as clearly expanding. They are: the *3-month change in sensitive materials prices, new orders for consumer goods,*

the ratio of manufacturing and trade sales to inventories, and vendor performance. The base data for each series fell, but, in each instance, the decrease was too little to change the indicator's cyclical status.

Following three straight months of decline, the base data for the *index of common stock prices* rebounded this month, rising 6.7 percent. Stock prices have bounced back near their July peak; nonetheless, the series remains appraised as probably expanding. *New housing permits* climbed for a second month in a row. Permits increased 1.3 percent to an annual rate of 1,614,000 in November after jumping 5.8 percent in October. Despite recent strength in its base data, the series' trend continues to weaken and remains appraised as probably contracting.

Three of our leaders have not yet es-

tablished discernable trends. The base data for *M1 money supply*, the narrowest measure of money, increased this month. M1 is seven months off its most recent peak, but no cyclical trend is apparent. The *average workweek in manufacturing* dipped 0.1 hours to 41.7 hours. Since June, the moving average for this series has fluctuated in a very narrow range around 41.8 hours and its direction is indeterminate. The *3-month percent change in consumer installment debt* dropped for the third consecutive month. Given that the series is smoothed using a 4-month moving average, several months may pass before a clear trend is identified.

Overall, 89 percent (8 out of 9) of the primary leading indicators with apparent cyclical trends are expanding. The cyclical score, our purely mathematical assessment of the twelve leading indicators, jumped 5 points to 85. Both measures of the leading indicators are well above the threshold of 50, the statistical threshold below which a business contraction becomes more probable than continued contraction.

Five of our six primary roughly coincident indicators reached new highs and remain appraised as clearly expanding: *nonagricultural employment, the index of industrial employment, personal income in manufacturing, manufacturing and trade sales, and gross domestic product (GDP)*. Nonfarm employment rose by 234,000 to 129.5 million, matching the average monthly gain for the prior 12 months. The service-producing sector added 181,000 jobs, with the construction industry accounting for the balance of the increase. Manufacturing employment was mainly unchanged. According to preliminary estimates released by the Commerce Department's Bureau of Economic Analysis, GDP increased at an annual rate of 5.5 percent in the third quarter, 0.7 percent higher than last month's advance estimate (which is based on less complete source data).

Civilian employment as a percent of the working-age population edged up 0.1 percent to 64.3 percent. After reaching a record high in January of this year, the series declined slightly and then leveled off. At this time, its cyclical status is indeterminate. Thus, 100 percent (five out of five) of the primary roughly coincident indicators with apparent cyclical trends are expanding.

Two of our primary lagging indicators, *manufacturing and trade inventories* and *commercial and industrial loans*, reached new highs and continue to be appraised as clearly expanding. Although not at new highs, the *average duration of unemployment* (inverted) and the *composite of short-*

term interest rates are also appraised as clearly expanding. The labor market remains tight: the number of unemployed persons was little changed at 5.7 million; the unemployment rate was steady at 4.1 percent; and the average duration of unemployment fell to 12.9 weeks. Short-term interest rates held at 5.66 percent.

The decrease in the base data for the *ratio of consumer debt to personal income* was sufficient to downgrade the series from clearly expanding to probably expanding. Although the *percent change from a year earlier in manufacturing labor cost per unit of output* has been rising since August, the series still has not developed a clear trend. Overall, 100 percent (five out of five) of the primary lagging indicators with apparent cyclical trends are expanding.

Y2K and Inventory Management

Modern inventory control techniques, which some analysts credit with mitigating the inventory cycle, rely heavily on information-processing technology—both hardware and software. “Point of sale” terminals (which can provide managers information virtually instantaneously instead of days or weeks after the fact) as well as “just in time” inventory systems at the production level limit the buildup of unsold goods and provide for more timely inventory increases when warranted by demand.

However, potential software problems associated with the century date change, or so-called Y2K problem, may temporarily affect inventory management in two ways. First, as the end of the year approaches, firms may choose to build up inventories as a buffer against supply disruptions. Second, after the new year, unanticipated software glitches may force firms to revert to less sophisticated methods of inventory management until repairs are made. Some have likened the former—inventory accumulation—to the effect of an approaching snowstorm or hurricane, and the latter—inventory control problems—to disruptions in activity during and immediately after a storm.

Although manufacturing and trade inventories have steadily increased throughout the second half of 1999, we have not detected any unusual pick-up in the series. Furthermore, the manufacturing sector—owing to even stronger sales—remains in balance. Of course, any disruptions owing to unforeseen inventory software problems related to the century date change cannot be known until after January 1. Barring such developments, indications are that the current outlook is highly favorable as the economy begins the New Year. □

Order Your Bound 1999 Research Reports

We are pleased to offer Volume LXVI (1999) of *Research Reports* in a paper-bound edition to all Annual Sustaining Members at the special pre-publication price of just \$5 per copy (\$10 after January 31, 2000). This volume includes all issues of *Research Reports* for 1999, plus a convenient index. To place your order, complete the form below (if you prefer, you may photocopy this page or simply write your request on a sheet of paper) and return with your check payable to “AIER,” P.O. Box 1000, Great Barrington MA 01230-1000.

Enclosed is \$ _____ for _____ bound copies of 1999 *Research Reports* (\$5 each).

Please mail my order to:

Name _____
Street Address _____
State _____ ZIP Code _____

We accept the cards shown or your personal check made out to “AIER”.

--	--	--	--	--	--	--	--	--

CREDIT CARD NUMBER

--	--

American Express Master Card
Discover Visa

Month Year
EXPIRATION DATE

Signature _____

Statistical Indicators of Business-Cycle Changes

<i>Change in Base Data</i>				<i>Primary Leading Indicators</i>			<i>Cyclical Status</i>		
Aug.	Sep.	Oct.	Nov.				Oct.	Nov.	Dec.
+	-	+		M1 money supply			?	?	?
+	+	+		M2 money supply			+	+	+
-	+	-		Change in sensitive materials prices			+	+	+
+	-	-		New orders for consumer goods			+	+	+
+	- ^r	-		Contracts and orders for plant and equipment			+?	+?	+
-	-	+	+	New housing permits			?	-?	-?
+	-			Ratio of manufacturing and trade sales to inventories			+	+	+
-	+	+		Vendor performance			+?	+	+
-	-	-	+	Index of common stock prices (constant purchasing power)			+	+?	+?
-	nc	nc ^r	-	Average workweek in manufacturing			?	?	?
+	-	+	+	Initial claims for unemployment insurance (inverted)			+	+	+
-	- ^r	-		Change in consumer debt			?	?	?
Percentage expanding cyclically							100	89	89

Primary Roughly Coincident Indicators

+	+	+	+	Nonagricultural employment			+	+	+
+	+ ^r	+	+	Index of industrial production			+	+	+
-	+ ^r	+		Personal income in manufacturing			+	+	+
+	-			Manufacturing and trade sales			+	+	+
-	nc	+	+	Civilian employment to population ratio			?	?	?
+	+			Gross domestic product (quarterly)			+	+	+
Percentage expanding cyclically							100	100	100

Primary Lagging Indicators

+	+	-	+	Average duration of unemployment (inverted)			+	+	+
+	+			Manufacturing and trade inventories			+	+	+
+	+	+		Commercial and industrial loans			+	+	+
+	+	-		Ratio of consumer debt to personal income			+	+	+?
+	+ ^r	+		Change in labor cost per unit of output, manufacturing			?	?	?
+	+	+	nc	Composite of short-term interest rates			+?	+	+
Percentage expanding cyclically							100	100	100

nc No change. ^rRevised. Under “Change in Base Data,” plus and minus signs indicate increases and decreases from the previous month or quarter and blank spaces indicate data not yet available. Under “Cyclical Status,” plus and minus signs indicate expansions or contractions of each series as currently appraised; question marks indicate doubtful status when shown with another sign and indeterminate status when standing alone.

PRICE OF GOLD

	1997	1998	— 1999 —	
	Dec. 23	Dec. 22	Dec. 14	Dec. 21
Final fixing in London	\$292.50	\$287.25	\$279.25	\$282.75

Research Reports (ISSN 0034-5407) (USPS 311-190) is published twice a month at Great Barrington, Massachusetts 01230 by American Institute for Economic Research, a nonprofit, scientific, educational, and charitable organization. Periodical postage paid at Great Barrington, Massachusetts 01230. Sustaining memberships: \$16 per quarter or \$59 per year. POSTMASTER: Send address changes to *Research Reports*, American Institute for Economic Research, Great Barrington, Massachusetts 01230.