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ROBERT A MUNDELL : NOBLE LAUREATE AND HIS CONTRIBUTION

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INTRODUCTION

Any undergraduate student will' get a flavor of Robert A. Mundell's contribution to international economics while pursuing their academic career in economics. You open a book on international economics and search for the author or subject index, you discover the name of Mundell. Mundell's contribution is basically in the field of international monetary economics, more specifically, on the idea of optimum currency area in the context of exchange rate regime and policy assignment paradigm for internal and external balance in the economy. A policy maker in the formulation and implementation of macroeconomic policy needs to address two issues, one in the domestic front and the other in the external. The correct assignment of these policy instruments is the cornerstone of Mundell's contribution for which he won the 1999 Nobel Prize for Economics. This paper addresses the contribution of Robert A. Mundell in these two areas and is designed for lay-men or non-technical readers.

Internal and External Balance-The Correct Assignment

The internal balance of the economy addresses the requirement of equilibrium in the domestic front, i.e., the equalization of revenue earnings and revenue expenditures whereas the external balance addresses the requirement of equilibrium in the external fronti i.e., the balance between export earnings and the import payments. This indicates that balance of payments is neither deficit nor surplus. The

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internal balance tries to attain a full employment situation in the economy with a tolerable level of inflation. The government thus owns two arrows in the quiver, fiscal policy and monetary policy to target these two goals. Fiscal policy deals with the complex mechanism of revenue earnings and revenue expenditure whereas the monetary policy deals with the supply of money and determination of the interest rates.

Mundell's approach aims at securing both internal and external balances by assignment of correct policy tools to target variables. The policy tools are the interest rates in the case of monetary policy and full employment budget deficit or surplus in the case of fiscal policy. Assume a country is experiencing both a recession and a balance of payments deficit position. We assume a fixed exchange rate regime where the currency alignment can be accommodated only in a narrow band in the case of fundamental disequilibria. When we assign monetary policy to correct the recession, we must lower the interest rate, i.e., an expansionary monetary policy leads to fall in the interest rates, worsening balance of payments position. Lower interest rate invigorates the investment climate but drain reserves and helps in the attainment of internal balance at the cost of the balance of payments problem. Now if we use fiscal policy to correct the balance of payments, government must cut expenditure or raise full employment budget to reduce import. This accentuates recession and the economy moves away from the equilibrium point.

On the other hand, if we use fiscal policy to correct recession i.e., increase expenditure or reduce the full employment budget, the economy attains internal balance and then if we use the monetary policy to raise the interest rate, the economy attains external balance. Expansionary fiscal policy induces a rise in interest rates, thereby improving the balance of payments. Thus, proper assignment of policies may cure both the internal and the external balance simultaneously and help to attain the equilibrium position. So, Mundell's assignment policy dictates that we use monetary policy to correct external balance and the fiscal policy for internal balance. This

assignment principle was referred elsewhere as the principle of effective market classification by Mundell: policies should be paired with the objectives on which they have the most influence and is consistent with Jan Tinbergen's (The first Nobel Laureate in Economics, surprisingly he did his Ph.D. in Physics) basic rule which asserts that to attain a given number of independent number of policy goals, there must be at least an equal number of instruments. [A full treatment of the assignment principles requires incorporation of IS, LM and BP schedule and an illustration by Swan diagram].

Historically, many advanced countries faced this dilemma. The USA economy experienced both unemployment (recession) and balance of payments deficit situation in the early 1960s while Germany, Japan and Switzerland regularly experienced rapid inflation and balance of payments surpluses. Lars Svensson, a member of the Swedish academy recalled the pain of the Swedish economy when the government failed to apply Mundell's theories in 1980 resulting in an overheated economy. Mundell's assignment rule was framed under the assumption of futed exchange rate and in the context of the current floating exchange rate there must be an arrangement to take care of the variations of exchange rate which may destablize the balance. The successive work of Mundell points to that direction.

Brief History of International Financial Structure

International financial structure has observed two broad exchange rate regimes; the fixed exchange rate regime (its derivative gold exchange standard) and the flexible exchange rate. The fixed exchange rate is synonymous with the Gold Standard (1860-1914) mainly because gold was considered as the major reserve currency. We all know that International Monetary Fund, one of the twin institutions of the Bretton Woods System shaped the world financial architecture in the Post World War II era. The exchange rate regime was Gold Exchange Standard and the dollar emerged as the only

intervention currency. The world made an attempt to switch to the fixed exchange rate after violent ups and downs in the exchange rate during the interwar period (1914-1944), when monetary cooperation among the world trading nations reached its nadir. The Article IV of the International Monetary Fund (IMF) empowered the institute to monitor the exchange rates of the member countries and the member countries were allowed to devalue their currencies within a narrow band only in the cases of the fundamental disequilibria in the balance of payments.

The gold exchange standard, a proxy of the fixed exchange rate began to experience a tenuous situation in the late sixties when America was experiencing persistent balance of payments deficits and the Western Countries accumulated huge reserves of dollar. America was not in a position to honour the exchange commitment of gold for dollar, so the system broke-down in August 15, 1971. The world monetary system then turned to floating exchange rate, the system which is now in vogue. The transition from a fixed to a floating or flexible exchange rate system exposes the world to an uncertain situation. The par value fluctuations of the currencies cloud the future transaction since individual countries may gain or lose depending on the movement of the exchange rate. **A** jittery foreign exchange market may jeopordize the trading relations among the nations in the world.

Fixed Vs Fiexible Exchange Rate

The efficiency of the fixed exchange rate system manifested in the augmentation of the interstate trade, interregional trade, investment and mobility of factors of production. The proponents of the fixed exchange rate system underscores the point that when currencies are traded at a previously established exchange rate, there are less risks in international trade. However, the current payments system evolves around the flexible exchange rate system. An alternative to the flexible exchange rate regime with a few pre-conditions may be unearthed by the idea of a currency union. Mundell pioneered such an idea through his paper, "**A** Theory of Optimum Currency Area" published first in the ***American Economic Review*** (Volume 51, 509-

517, Nov.1961) and subsequently in the book *International Economics* (Chapter 12) published by the MacMillan Company, New York in 1968. The very first sentence of the paper states.

> *It is patently obvious that periodic balance of payments crises will remain an integral feature of the international economic system as long as fixed exchange rates and rigid wage and price levels prevent the international price system from fulfilling a natural role in the adjustment process. A systenz of flexible exchange rates is usually presented by its proponents, as a device whereby depreciation can take the place of unemployment when the external balance is in deficit, and appreciation can replace inflation when it is in surplus. But the question then arises whether all existing national currencies should be flexible.*

When all the national currencies are flexible, stabilization is reasonably easier either by depreciation or by appreciation but involves a huge cost because each transaction involves convertibility. Thus, there is both a cost as well as benefits. The cost may be minimized and the benefits may be enhanced through formation of a currency area. The formation of a currency area obviates the convertibility requirement and if a single currency is the norm, say, for example Euro, then individual country must peg their currencies with the single currency. This is akin to the concept of the fixed exchange rate. However, formation of a currency area requires fulfilment of certain desiderata, among which interregional factor mobility is the most important. The interregional factor mobility helps in the equalization of prices in the different regions.

Optimum Currency – Beauty and the Delicacy

The beauty of an optimum currency area may be delineated through a simple example. Consider two countries, 'A' and 'B' and assume they enjoy full employment, price stability and balance of payments equilibrium. This situation may be disturbed in many ways

and there are ways to address the equilibrium position. Consider a shift in demand from the goods of country 'A' to those of country 'B'. The balance of payments position in the country 'B' improves and deteriorates in country 'A'.

When money wages and prices cannot be reduced in the short run and the monetary authority act to prevent inflation, the decline in demand for the goods of country 'A' causes unemployment in 'A'. On the other hand, the balance of payments equilibrium may be restored by changes in relative prices. Price in the country 'A' falls and rise in country 'B'. The terms of trade improves for country 'B' and deteriorate for country 'A'. The final outcome depends on the response of the monetary authorities in the respective countries.

Two options are available here. If each of the countries pursue separate monetary policies and fixed exchange rate is the norm; B's monetary authority is very likely attempt to prevent inflation which **worsens unemployment in country 'A'. Again, 'A'smonetary authority** cannot cure the unemployment situation without worsening the deficit. This drains the reserve asset of country 'A'. On the other hand, if country 'A' and country 'B' share a common currency and thus a common monetary policy is directed towards full employment, unemployment in 'A' leads to an expansionary monetary policy that accentuates inflation in Country 'B'. These two options make the case of flexible exchange rate a forerunner since inflation and unemployment can be tolerated when the exchanges rate are allowed to vary. Depreciation of A's currency (and apprecison of B's) indicates that trade between the regions can remain balanced, that B's monetary authority can act to prevent inflation and that A's monetary authority can act to combat unemployment. The terms of trade move in favor of B in exactly the same way as they would have moved had internal prices been flexible.

These examples illustrate the pros and cons of fixed exchange rate and flexible exchange rate. The fixed exchange rate ensures greater

efficiency through certainty in the exchange rate arrangements and the flexible exchange rate creates a congenial environment in attainment of full employment. An endeavor to get these two objectives fulfilled may be possible through the "Optimum Currency Area" as enunciated by two economists, Robert Mundell and Ronald I. Mckinon. The idea encapsulates a common currency for a set of countries, or regions with a fixed exchange rates linked to the common currency. The European Monetary Union (EMU) represents such an area. Countries inside the EMU peg their currencies to each other, and the currencies then float in unison with respect to the currencies outside the EMU. Intervention by the monetary authorities of the countries inside the currency area is selective. The central bank buys and sells the currencies inside the union at a fixed price.

There are certain requirements those need to be fulfilled by the set of countries constituting the optimum currency area. Optimum currency area must be fairly large and should be economically self-sufficient as possible and may not necessary encompass within a single border area. The currency area must also ensure a substantial mobility of the factors of production. Mundell in his articles, "**A** Theory of Optimum Currency Area" underscores the point of factor mobility through this excerpts:

> *If the world can be divided into regions within each of whiclz there is factor mobility and between which there is factor immobility, then each of these regions should have a separate currency which fluctuates relative to all other currencies. This carries the argument for flexible exchange rates to its logical conclusion. But a region is an economic unit, whereas a currency domain is partially an expression of national sovereignty. Except in areas where national sovereignty is being given up, it is not feasible to suggest that currencies should be reorganized; the validity*

> *of the argument for flexible exchange rates therefore hinges on the closeness with which nations correspond to regions. The argument works best if each nation (and currency) has internal factor mobility and external factor immobility. But if labour and capital are insufficiently mobile within a country, then flexibility of the external price of the national currency cannot be expected to perform tlze stabilization function attributed to it, and one could expect varying rates of unemployment or inflation in the different regions. Similarly, if factors are mobile across national boundaries, then a flexible exchange system becomes unnecessary, and may even be positively harmful.*

Mundell outlined the experience of Canada in the implementation of flexible exchange rate, where inherent inertia in factor mobility within different regions were observed. This failure of the stabilization policy because of factor immobility ' cast doubt only on the effectiveness of a flexible exchange system in a multiregional country, not on a flexible exchange system in a unitary country. This idea may be corroborated by the example of the United States. In the United States, the Houston, Texas area enjoyed a boom in the oil price increase of the 1970s. Higher energy costs pulled down the economic activity in other parts of the country and workers swarmed to Houston's booming economy, thereby balancing labour surpluses in the depressed areas and labour shortages in the Southwest. Again during the 1980s, as world oil prices fell sharply, it was the Houston economy that suffered depression. The balancing in the labour supply would require the absorption of surplus labour force in the Houston area to other parts of the country.

The countries that organize themselves into a currency area must be prepared to pursue a common monetary policy. **A** common monetary policy is possible only when substantial intracurrency-area

factor mobility is present. Most of the classical economist favoured a world currency. There is a transaction costs as well as inconveniences in the convertibility with the multiplicity of currencies and the costs tend to increase with the number of currencies. Money as a medium of exchange is less useful if there are many currencies. Mundell holds the view that if the number of currencies equalled the number of commodities, the usefulness of money in its roles of unit of account and medium of exchange would disappear, and trade might just as well be conducted in terms of barter.

There were lot of scepticism during the 1960s in the contest of the formation of Optimum Currency Area. James Meade argued that the conditions for a common currency in Western Europe do not esist, and that because of the lack of labor mobility, a system of flexible eschange rate would be more effective in promoting balance of payments equilibrium and internal stability. On the other hand, Scitovsky favoured a common currency area because he believed that it would induce a greater degree of capital mobility but cautioned that steps must be taken to make labour more mobile and to facilitate supernational employment policies. The introduction of Euro as an **accounting device** in **1098 is a steps towards that direction.**

Conclusion

The ultimate outcome depends on several factors. Most important are the sacrifice of an independent monetary policy to a common monetary policy and the ultimate political unification of Europe in the trail of wholesale economic unification. Only time can tell us about the effects of the sequence of events. If the world replicate the euro model and form separate monetary union with single currency, Mundell's contribution would be considered a revolutionary event and hopefully a visa free world when factor mobility would constitute a binding requirement for the currency area to work with the elegance of the fixed exchange rate.

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