Chapter 18 The Third World Debt Crisis & the International Financial System

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Introduction: The phenomenon of Third World debt

To even the most uninformed observer the Third World debt crisis represents nothing short of a global economic crisis. This crisis, which was recognized as such only six years ago, originated merely fifteen years ago. The accumulation of a large external debt is a common phenomenon among Less Developed Countries (LDCs) which are at the stage of economic development where the supply of domestic savings is low, the current account deficit on the balance of payments tends to be large and imports of capital are vitally needed to augment the rather scarce domestic resources.

Despite the contemporary populist belief that foreign borrowing is a disease rather than a cure,theoretically such borrowing can be beneficial. It can provide much needed resources to promote economic growth and development. But the debts incurred in Latin America and sub-Saharan Africa were often used to finance status projects which brought few benefits in terms of economic growth. Moreover, the costs of borrowing are very considerable. The servicing costs represent a contractually fixed charge on domestic real income and savings. Such servicing charges can only be made with foreign exchange and can therefore only be made through export earnings, curtailing imports and further external borrowing. Under normal circumstances most of a country's debt service obligations are met by export earnings. However, if the composition of a country's imports or exports change, or rate of interest rises, realistic prospects in the dynamic world economy of the 1980's, a corresponding increase in debt service payments will result. The vicious circle of Third World debt is already apparent.

Origins: The global debt crisis in perspective

The global debt crisis represents a very recent phenomenon, originating a mere fifteen years ago. Before the 1970's the external debt of LDCs was relatively small and the majority of creditors were foreign governments and international financial institutions such as the International Monetary Fund, The World Bank, and other regional development banks. Most loans were made on concessional rather than commercial terms and were extended primarily for the purpose of implementing development projects and expanding the importation of capital goods. However, since then the size, form and composition of Third World debt has been transformed. From 1971 to 1983 the total external debt of LDCs has risen from $90bn to $817bn, a rise of over 900%. Debt service payments have accelerated at an even faster rate of over 1000%, jumping from $11bn in 1971 to $131.3bn by the end of 1982. The seeds of this debt crisis were sown during the 1974-79 period, a period in which there was a virtual explosion in international lending precipitated by the first O.P.E.C. oil price increase in 1973. The spiralling of debt stems directly from the simultaneous need for funds to sustain growth and the extreme eagerness of the international financial system to provide such funds from the bank deposits of their O.P.E.C. clients.

In the years 1967 to 1973 developing countries experienced high growth rates. To some it seems that they were indeed at last 'catching up' with the industrialized world. In particular, newly-industrialized countries such as Brazil, Mexico and Argentina experienced very high growth rates. So they began to import heavily, particularly capital goods, oil and food. The outward looking development

strategies that such countries adopted led them to promote their exports aggressively; this occurred, however, on the eve of the first oil price shock, a world recession and, hence, a fall in growth rates in industrialized countries. As a result many developing countries sought to sustain their high growth rates by increased borrowing. Lending from unofficial sources increased considerably, particularly non-concessional lending; official agencies lacked the funds to meet the growth needs of many middle-income and newly-industrialized countries. Additionally, many countries facing balance of payments problems involving an excess of import payments over lagged export revenue were reluctant to approach official sources who might have forced painful policy adjustments upon them. As a result of these factors, numerous developing countries turned increasingly to commercial banks and other private lenders to provide the funds needed for balance of payments support.

This outward shift in the demand curve for international funds was simultaneously matched by a corresponding outward shift in the supply curve for such funds held by commercial banks who during the 1970's held the bulk of the O.P.E.C. oil revenue surplus, a surplus which grew from $7bn in 1973 to $68bn in 1974 and peaked at $115bn in 1980. The commercial banks, flush with such funds and facing low demand for capital from the slower growing industrialized countries, aggressively competed against each other in lending to LDCs.

Herein lies the explanation for the meteoric rise in the total external debt of such countries. However, more significant perhaps than the rise in the absolute size of the debt was the change in the form and composition of the debt. An increasing portion of the debt was made on non-concessional terms - 77% of total debt in 1979, compared to 40% in 1971 - such terms being less benevolent, involving shorter maturities and charging market rates of interest which were often variable. It is not surprising therefore that due to the large rise in the size of the debt and the larger proportion of the debt scheduled on harsher terms, the debt servicing payments of all LDCs trebled from 1975 to 1979, from $25bn to $75bn.

However, despite this large increase in debt servicing obligations the ability of most developing countries to meet their debt service payments remained largely unquestioned due to the international economic climate prevailing in the late 1970's. The combination of a fall in real oil prices due to high inflation, low or negative real interest rates and a rise in export earnings which narrowed the current account deficits of many developing countries allowed such countries sustain relatively high growth rates, averaging 5.2% from 1973 to 1979, through massive borrowing.

Therefore on the evidence presented so far, the surge in international lending following the first oil price shock could be largely termed a success because in an economic atmosphere that could be described as congenial to developing counties, such borrowing allowed these countries to maintain high growth rates with few servicing difficulties by facilitating the recycling of huge surpluses from oil exporters to oil importers through the lending activities of private international banks. This cheerful picture is completed by the fact that such massive lending/borrowing helped dampen the recession in industrialized countries post 1973 by boosting export demand from LDCs seeking Western goods and services.

However if the surge in international lending in the period 1974 to 1979 was to sow the seed, the harvest that was reaped post 1979 was a very bitter one indeed. The second oil price shock in 1979 was to lead to a complete reversal of

economic conditions that had been so conducive to the success of international lending in the previous decade. LDCs suddenly faced an abrupt increase in oil prices which added considerably to their oil import bills and affected the prices of industrial imports on which they so vitally depended. The second oil crisis coincided with, or perhaps was the cause of, the emergence of deflationary economic policies in the Western World. Such policies affected LDCs in two critical way. Firstly, the stabilization policies of the Western powers led to a hike in interest rates which led to a similar increase in debt service obligations, obligations which were made harder to meet by the bunching of short maturities arranged during the 1970's. Secondly,a deflationary policies in the West led to a collapse in the major markets for goods exported by LDCs resulting in a decline of over 20% in primary commodity export prices during the period. Therefore the present-day crisis is due to these two vital factors: a sharp rise in the cost of debt servicing and a sharp fall in export revenues to pay such servicing charges.

Faced by this critical situation, Less Developed Countries faced two rather unsavoury policy options: the imposition of fiscal and monetary measures that would curtail imports but restrict growth and development objectives, or finance the widening current account deficits through more external borrowing. Being either unable or unwilling to accept the first option, many LDCs continued to borrow heavily, sinking further and further into a massive debt trap. Alarm bells began to ring in the financial capitals of the world as the impending crisis increasingly came to light. By 1983 the two largest borrowers, Brazil and Mexico, had a total external debt of $93.5bn and $86.6bn respectively. When one considers the export earning of the two countries stood at $17.5bn and $22.2bn respectively, the crisis becomes all the more stark. In August 1982 Mexico informed its creditors that it could no longer keep up its interest payments. Other major debtors followed their stance. The debt crisis had begun in earnest.

The present dilemma: crisis or consolidation?

It was Mexico's shock announcement in 1982 that confirmed the debt crisis as a global problem. Since then numerous solutions have been proposed and the collapse of the world financial system predicted by many has been averted or deferred. However the debt crisis still continues to act as a constraint on development and on poverty alleviation. By the end of 1987 (the most recent figures available) the total external debt of LDCs stood at $1,217bn, an increase of 43% over the total external debt of 1982. Despite a slowdown in the rate of increase of some indicators such as the ratio of interest service payments to export revenue, the situation still remains critical. Any rise in LDCs' exports has just offset the fall in export prices. The real cost to developing countries of their external debt rose from 8.1% of G.D.P. in 1986 to 10% in 1987, while the average growth rate of real G.D.P. in all LDCs fell from 4.2% in 1986 to 3.4% in the following year.

The 'Financial Times' recently predicted that the third phase of the debt crisis was at hand. The first phase, lasting from August 1982 until 1985, was one of crisis management, the main concern being the stability of the world financial system. James Baker, the recently appointed U.S. Secretary of State and then U.S. Treasury Secretary proposed a plan in 1985 that ended the first phase of the debt crisis. Baker argued that debtor countries would never be able to meet their commitments unless they were able to export more and grow economically. The Baker plan set the agenda for the second phase of the crisis. It involved a large increase in loans to LDCs, a greater application of I.M.F. conditionality, and more

case by case rescheduling of loan commitments. However, by the end of the second phase the net outflow of funds from LDCs continued. The third phase of the debt crisis, which we are currently experiencing, aims at limiting the net cash outflow from developing countries and encouraging development in such countries by allowing debtor countries greater access to financial markets and by the enunciation of long-term development strategies for these countries. The success of this current phase of the crisis will ultimately depend on stemming the cash outflow.

Recent initiatives to solve the stalemate have experienced varying degrees of success. A five year recovery programme launched by the U.N. in 1986 has had little success in sub-Saharan Africa where debt service payments are projected to reach $45bn per annum by 1995. At the Washington meeting of the I.M.F. and World Bank in September 1987, Nigel Lawson proposed that Western governments write off some past loans to African debtors, a significant shift in emphasis. James Baker echoed Mr Lawson's views in a speech to the African Development Bank in June 1988. In the same month the Toronto Summit of the seven leading industrial nations agreed to a package of rescheduling and the partial writing off of debt to sub-Saharan African countries. In September 1988, UNCTAD (United Nations Conference on Trade and Development) proposed that the debt relief way was the only means of reviving growth and alleviating the debt crisis and called for a once and for all cut of 30% in commercial bank debt which they predict will lead to a 100% fall in the debt to export ratio of developing countries within five years.

Therefore debt cancellation is firmly on the agenda as a means of solving the global debt crisis. This policy is justified on four counts: historical experience of past debt crises; fairness; efficiency and, lastly, considerations of political stability. It is in the interests of all LDCs that this policy is adhered to.

The international financial system: a wolf in sheep's clothing?

To many observers the burden of guilt for the present debt crisis lies not with the economic policies of the borrowers but with the profit motives of the lenders, i.e. the international financial system. By the 'international financial system' we are referring to the institutional arrangements ensuring the world's surplus funds flow to countries in deficit, the rule governing the international exchange rate regime and the mechanisms for creating and distributing liquidity. The arrangements for channelling funds to LDCs involve a wide range of participating entities including international financial institutions, governments, commercial banks and industrial companies.

As already discussed, the range of maturities, currencies and financial instruments offered to LDCs has changed. In general the 1970's was an era of financial liberalization. Deregulation and increased competition led to the increasing globalization of banking. The O.P.E.C. surplus added to the above factors and resulted in the increased involvement of the international financial system in the financial and economic affairs of LDCs. Indeed in the 1970's the desire of the international financial system to lend to them became a stampede. With the benefit of hindsight we can see that the creditors did not question their ability to pay sufficiently.

The second oil crisis led many debtor countries to renegotiate their loan commitments with private international banks in the hope of either stretching out the payment period for the principal and interest and/or obtaining additional finance or more favourable terms. However, most debtor countries have typically been obliged to deal with the I.M.F. as an indication of the debtors' willingness to

impose policies to tackle the crisis before a consortium of international banks would agree to refinance or reschedule a loan.

Such stabilization policies tend to be politically very unpopular because they strike at the heart of development efforts by disproportionately hurting the lower- and middle-income groups and because such policies are imposed by an international agency and are therefore perceived by many, particularly those in the Dependency School of Development Economics, as measures primarily designed to maintain the poverty and dependency of LDCs while preserving the global market structure for industrial countries. Cheryl Payer, an economist of the Dependency School, viewed the I.M.F. functions as "the chosen instrument for imposing imperialist financial discipline on poorer nations" (quoted in Todaro, 1986, p557), a system which creates a form of "international peerage" or debt slavery whereby the I.M.F. offers additional funds which will ultimately perpetuate rather than solve the debtors' balance of payment problems. As the debt burden increases the debtor countries are 'blackmailed' into anti-development stabilization policies thus creating a vicious circle of debt in which LDCs must run faster simply to stand still.

The alternative view sees the I.M.F. not as a development or anti-development agency but simply as one fulfilling its original mandate of holding the global capital market together by the pursuit of short-term orthodox counter-cyclical stabilization policies. However such a mandate may perhaps be outdated in the dynamic, international, increasingly global economy of the 1980's. Also the balance of payments problems of many LDCs may be structural and long-term in nature and therefore the adoption of short-term stabilization policies may lead to long-term debt crises. There is no doubt that the I.M.F.'s policies of severe financial regression of debtor countries, whether just or unjust, do impose a harsh and perhaps unnecessary economic burden on countries that can ill afford it.

Therefore the greater flexibility and willingness to modify its prescribed medicine to fit the varied illnesses of its patient is perhaps the most logical and humane course of action for the I.M.F. to take to help it shed its 'wolf in sheep's clothing' image that many people hold of it.

Conclusion: A Third World problem; a global crisis

The Third World debt problems has thus truly become a worldwide problem. The debt crisis of the 1980's has called into question the very existence, stability and validity of the international financial system. Ironically, fears that the imminent collapse of this system in the early 1980's led currency speculators to purchase large quantities of the dollar which inflated its value and added further to the dollar-denominated debt burdens of LDCs.

The debt crisis has underlined the tremendous interdependence of the international financial and economic systems, an economic domino effect with frightening consequences.

Although many LDCs are at least partly responsible for the massive accumulation of debt, the adverse economic conditions they face, in part precipitated by the industrialized countries own stabilization policies, are often beyond their control. Cline has estimated that 85% ($401bn) of the total increase of $480bn in external debt of the non-oil producing LDCs from 1973 to 1982 can be attributed to four factors beyond their control:

1. O.P.E.C. oil price increases;
2. rises in dollar interest rates;
3. a decline in developing countries exports due to the worldwide recession;

4. the dramatic decline in commodity prices and the consequent worsening in the LDCs terms of trade.

Therefore the burden of the global debt crisis must be shared by all. While many debtor countries must undergo a period of painful adjustment, industrial countries must relax their restrictive monetary policies and encourage imports. International organizations such as the I.M.F. must provide sufficient financial liquidity until the economic climate changes and LDCs can make the necessary adjustments. A global crisis requires a global solution.

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Chapter 17 Economic Growth in the Closed Economy

Ciaran John ONeill

Despite the fact that growth theory has not been the economic mode for almost a decade, the current worldwide trend towards stabilisation of the macroeconomy will bring theories of the growth process back into the forefront of economic thinking. This prospect prompts a review of the fundamentals of growth theory and their application to particular economies.

Much of modern growth theory rests on the idea of equilibrium; not an equilibrium in the static sense of Keynesian analysis, but a long run perpetual equilibrium known as a steady state equilibrium. Such an equilibrium is characterized by a fully employed economy with a fixed capital-labour ratio and where output is growing at the same rate as the labour force. Economics is thus concerned with the determination of Y (equilibrium output) and the process via which an economy can reach this point.

The Harrod-Domar (H-D) model, developed in the 1930's and 1940's, dominated growth theories until the 1960's. The basic assumptions of the model are that (a) savings (= investment) are a constant fraction, a, of output i.e. $S/Y = a$, (b) the labour force grown at a constant rate, β, (c) the capital-labour ration (K/L) is constant. Thus, the growth equation for the H-D steady state is $a/v = \beta$, where $v = K/L$. The implication of this is that the growth rate of the capital stock must equal the growth rate of the labour force i.e. $\beta_K = \beta_L$ which comes from assumption (c). However, this effectively implies zero substitutibility between labour and capital, i.e. more labour intensive or capital intensive methods of production are ruled out, and is clearly at variance with the facts of growth.

This prompted Sargant, Meade and, in particular, Solow to develop a new theory which would allow for a degree of capital-labour substitutibility. This 'neoclassical' growth synthesis provides the basis for modern growth theories and appears to be more consistent with Kaldor's "stylized facts" of growth. The assumptions underlying this model are essentially as follows:

(a) savings are identically equal to investment (i.e. $S \equiv I$). This follows from the fact that in perfect financial capital markets, the rate of interest, r, will represent society's preference for present, as opposed to future, consumption i.e. the marginal rate of transformation (MRT) will be equal to the marginal rate of substitution. If private savings exceed private investment then the government will have to run a budget deficit to maintain the equality between savings and investment.

(b) savings are a constant fraction of output i.e. $S/Y = a$.

(c) for simplicity, the capital stock does not depreciate.

(d) the labour force grows at a constant rate, g, which can be treated as exogenous.

(e) the technical relationship between inputs and outputs takes the form of a continuous aggregate production function which exhibits constant returns to scale i.e. if $f(K,L) = Q$ then $f(cK, cL) = cQ$ where c is any positive number.

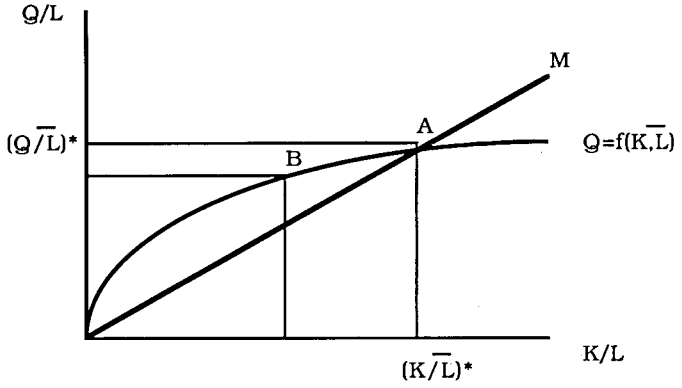

Figure 1

If labour is held constant, it is possible to represent the change in output per worker (Q/L) as a function of capital per worker (K/L) where the marginal product of capital (MP_K) is always positive but decreasing i.e. capital experiences diminishing marginal returns. This implies that there is some substitutibility between the two factors.

The line M shown in fig. (i) embodies two pieces of information: (a) the savings rate at any particular level of output and (b) the growth of the labour force. It shows the output per worker that is required to maintain the capital-labour ratio constant, which is a necessary condition for steady state growth. Since a given fraction, a, of output, is saved, it follows that the rate of savings must equal the growth rate of the labour force in order to hold the capital-labour ratio constant. If the savings rate was higher, the capital-labour ratio would be growing and this would push up the output-labour ratio, at a slower pace, until a steady state was attained. So, if the economy was initially at point B in fig. (i), the savings rate, a, exceeds the rate of growth of the labour force, g. The economy will thus move towards point A, a steady state. Conversely, any point to the right of the line M will correspond to a savings rate being less than the rate of growth of the labour force and so the capital-labour ratio will fall until point A is reached.

This analysis has implications for policy makers as there appears to be at least two ways whereby growth can be increased. It must be remembered that such increases can only be temporary as the economy will move back to its long run equilibrium.

The first is to do with 'increases in technology'. Although the neoclassical model does allow for technical progress, it is perhaps the greatest criticism of the model that this technology is 'disembodied'. The model treats increases in technology as increases in universal labour productivity and hence can be regarded as a reduction in the labour input at every level of output. Consequently, the long run rate of growth of output becomes the rate of growth of the labour force plus the rate of growth of productivity. This implies that 'labour-augmented disembodied technical progress' will only lead to a temporary acceleration in output growth until the economy returns to its equilibrium steady state level

where the growth rate will be higher than before. However, the increase in technology will not allow for a permanent increase in the rate of growth over and above its steady state rate over time. Because of this, an incorporation of 'capital-embodied' progress, where the quality of inputs can be increased, into the model would allow even greater consistency with the facts of growth.

The second method of bringing about a rate of growth higher than the steady state rate is through a higher savings rate (but only up to a point). If the savings rate is increased, the ratio of capital to labour will eventually rise and this will lead to a higher ratio of output to labour. The consequence of this is that the line M will pivot to the right implying a higher capital-labour ratio at each level of output per worker.

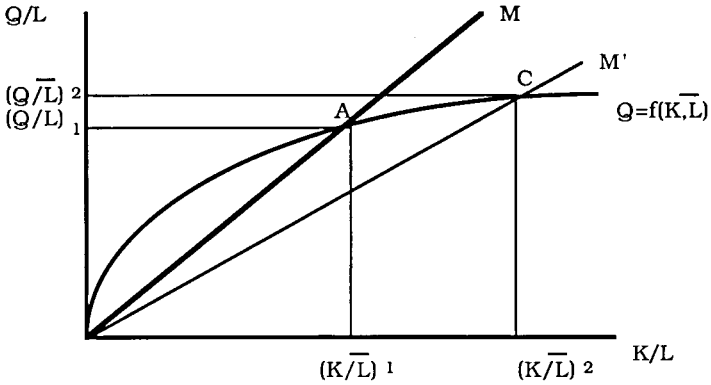

FIGURE 2

The economy will move from A to C and once it reaches C, it will grow at its steady state level again.

Thus, economic policy should be directed towards achieving that rate of savings which will achieve the highest level of output per worker while at the same time maximizing the present value of consumption. As both savings and consumption constitute output, it can be seen that maximum growth could imply a savings rate of 100% which is obviously not a desirable outcome. In an effort to overcome this, economists have developed the 'golden rule of accumulation'.

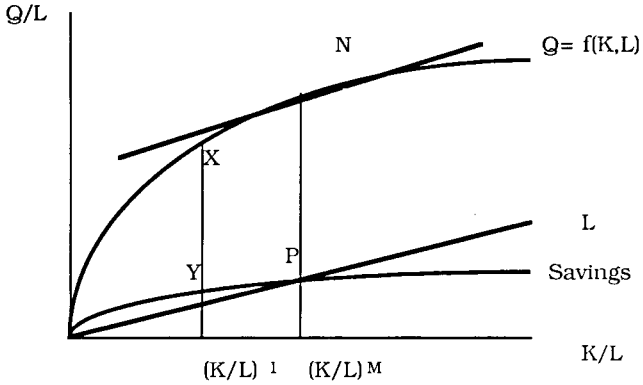

FIGURE 3

The line L in fig. (iii) represents the growth of the labour force, assumed to be exogenous and constant. In equilibrium, the growth rate of the labour force is equal to the rate of savings. The government should then try to ensure that the savings function (where savings are a constant fraction of output) intersects the line L, where potential consumption, the distance between L and the production function, is maximized over all future years. This occurs where the marginal product of capital equals the rate of growth of the labour force which is at the point P. The distance NP represents consumption while $P(K/L)^{m}$ represents the savings rate. Given the above, it remains only to examine what policy makers should understand about growth in a closed economy.

Since this is a discussion concerning an equilibrium where there is full employment, it is effectively dealing with the growth of potential output. This will not be unrealistic if policy makers have sufficient tools to maintain equilibrium in the goods and financial markets while output increases.

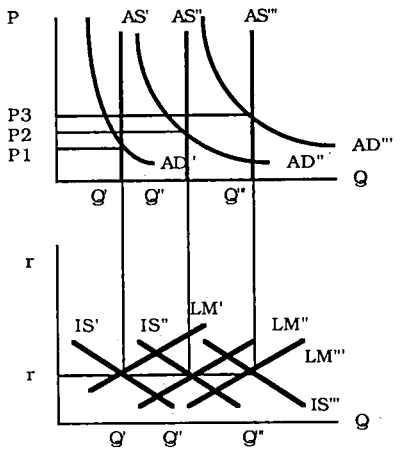

FIGURE 4

The role of the government is to ensure that the aggregate demand curve does intersect a shifting aggregate supply curve at a particular set of prices and it can attempt to do this by using short run stabilisation policy instruments. If the interest rate is changing then investment would not be stable and so the economy would not be in a steady state equilibrium. The government must ensure that the money supply expounds at a rate equal to the growth rate of aggregate demand plus the rate of inflation. The type of monetary expansion that this entails necessitates an examination of the demand for money relationship.

Prices will be rising only if the growth of wages (wage inflation at full employment) is greater than the growth of labour productivity (the determinant of the wage level in neoclassical microeconomics). Hence, in long run steady state equilibrium, output must be rising at a rate equal to the growth of the labour force plus the growth in labour productivity. Prices must be rising at a rate of wage inflation (a Phillips curve relation) less the growth of labour productivity, and the money supply must be expanding at a rate equal to the growth of aggregate demand plus price inflation.

This analysis shows how the economy moves when steady state equilibrium has been achieved. However, two methods have been outlined in which growth may be increased temporarily: increasing technology and a rise in the savings rate. In neoclassical analysis, the two are closely linked so that one may stimulate the other.

As regards investment, three important components are (a) investment in physical capital, (b) investment in human capital and (c) investment in research and development. The effect of each of these is basically the same. They can be analysed in terms of their impact on labour productivity which is essentially a reduction in labour input. The level of investment in each of these is dependent upon the rate of return viz-à-viz the cost of the investment (the rate of interest). Therefore, the role of policy makers should be to ensure that the interest rate is sufficiently low to encourage such investment while still maximizing the present value of consumption (the golden rule). In particular, policy makers should be concerned with types (b) and (c) due to the level of risk and uncertainty that surrounds them. For example, an increase in the availability of funds to finance greater investment in human capital through education, together with a patent system to ensure high rates of return on successful R and D projects, would be acceptable to the vast majority.

Lastly, it is important to remember that the analysis has been based on the neoclassical idea of perfect markets and hence is an ideal. Even one of the world's most closed economies (the United Stated) can diverge from the theory. The present budget deficit ($169 billion for federal government) would imply that there is a private sector surplus of savings over investment. However, as can be seen from the calls for still greater savings, the level of economic growth implies that investment is sufficient while savings are too low. Notwithstanding this, the neo-synthesis does, in general, fit the facts of growth. The rates of growth of output and the labour force have been fairly steady although the former has tended to exceed the latter (take the U.S. for example). The capital stock is growing at a fairly steady rate and is close to the rate of growth of output suggesting an approximately constant capital-output ratio. However, Solow did point out that "this is a temporary excuse and not a permanent licence". The analysis of economic growth is not over!

SECTION 5
GROWTH & DEVELOPMENT

Chapter 16 Economic Growth as a Policy Objective

Orla McKeon

To the general public and policy makers, the desirability of economic growth, as a policy objective, is axiomatic. In general, however, the justification for it is based on some intuitative reasoning rather than on any specific principles. The purpose of this essay is, therefore, to try to present some of the relevant issues which have arisen in the debate concerning the desirability of economic growth, both in terms of the objectives itself and in relation to other proximate policy objectives of government. Finally, some problems regarding the current method of measuring growth, and the subsequent proposed alternatives, will be discussed.

The conventional definition of economic growth is the rate of change of real G.N.P per capita. The primary argument used to justify it as a policy objective relates this basic definition to one of the assumptions underlying liberal welfare economics, i.e. that the welfare of an individual is a positive function of the goods and services he/she consumes. But this argument lacks a dynamic component. Economic growth involves a trade-off between consumption now and consumption at some future date. On the above assumption, therefore, the pursuit of economic growth implies a reduction of welfare to the individual due to a decrease in current consumption.

The optimum level of growth hence depends on how fast one discounts the future; the faster one discounts it, the less of a policy objective economic growth should be.

Individuals tend to discount the future rapidly because of myopia, because holding assets entails risks, or, most critically, because providing for future generations is a public good. As individuals, they are powerless to provide for them, but as a society they are not.

It is argued that the optimal discount rate, and hence the optimal level of economic growth, can be attained through the market system and through government intervention to correct the market discount rate. But the power of government to fulfill this role is constrained by the many ways in which the electoral system fails to adequately reflect social preferences.

Galbraith has questioned the ability of the market system to fulfill this role, even ignoring conventional instances of market failure by claiming that wants are created by producers through advertisement and by consumption which acts as a suggestion to create more wants. Thus, for Galbraith, it cannot be assumed that welfare is greater at a higher level of consumption because the market system distorts peoples' preferences and reflects only the manipulation of consumers by producers. This argument does, however, appear to be a highly condescending one, as it makes a dangerous supposition concerning free will and the control of one's mind. If the individual is incapable of determining what is in his/her own interests, who is to make these choices for him/her, and what constraints are to be placed on his/her power?

Besides, it could surely be argued that advertising could not act as an enticement unless some underlying demand or want was present. There are several advertising "failures", such as Guinness Light and Cherry Coca-Cola, to

support this argument.

Economic growth implies greater output and consumption at some future date, as has been outlined. However, there are certain costs involved in the actual process, and pursuit, of growth itself. One of the most influential arguments against it concerns the depletion of the earth's limited resources, a post-industrial argument. According to this theory, the period of relative peace and affluence, following the Second World War, has led to a satisfying of our physiological needs of sustenance and safety and, consequently, we take these for granted in the Western world. These needs are then replaced by post-material values concerning self-esteem and the quality of life. Economic growth is seen as entailing negative externalities (e.g. pollution or depletion of finite resources), and is hence rejected.

The lynchpin of this argument would seem to be the concept of 'quality of life'. Those who favour economic growth see a better quality of life in a society where output and income is higher and greater consumer demands can be satisfied. Critics see a better quality of life in a society where the environment has improved, or at least remained intact. It is this argument which has gained particular prominence in West Germany.

This conservation argument seems strong and is becoming popular. Could it not be argued, however, that it is not economic growth as such which has damaged the environment, but rather previous failure to guide and control growth in the optimal directions? Surely the implementation of direct environmental controls on industrial activity would reduce the social costs of economic growth, and hence some of the validity of the post-material argument.

Hirsch put forward an alternative contrasting idea. He argued that once a given level of affluence has been attained, all that people want are positional goods which entail a certain social status (e.g. property or valuable paintings). Hirsch seems to view the satisfying of such demands through the market system, and the pursuit of economic growth, with some disdain. This argument could also be expressed in terms of the basic assumptions of liberal welfare economics. The welfare of individuals could be looked upon as a positive function, not of their consumption in absolute terms, but of their consumption relative to the norms of the society in which they live. At an individual level, boosting consumption may hence be desirable, but growth (for society as a whole) is simply a positional game. Thus, although the post-industrial argument, and that of Hirsch, evolve from very polar viewpoints of the impact of affluence on society, for post-industrialists, it lessens material urges, while for Hirsch, it rechannels them into demands for social status.

Alternatively, one may question the benefits of economic growth from a theoretical welfare economics perspective. Even if welfare is a positive function of consumption, it may also be a positive function of one's expectations in relation to consumption. Economic growth boosts both consumption and one's expectations. It seems likely (especially in a prosperous society) that these two effects would roughly cancel each other out. So, economic growth could sometimes be thought of as a zero-sum game.

To discuss the desirability of economic growth further, it is necessary to examine it on a wider scale, in particular, with respect to its relationships with other policy objectives. Trade-offs will always exist between pursuing the goals of economic growth, full employment and equality.

In the short-run, any change in growth or employment must lead to a change in the other variable in the same direction, unless a change in productivity occurs

to neutralize it. But Keynesian demand stimuli, although they boost employment in the short-run, will, if financed by borrowing, ultimately reduce employment. Such a scenario occurred in Ireland in the early 1980's.

Economic growth may likewise conflict with, or complement, equality. The argument that redistribution reduces work incentives, and hence growth, is a key feature of the dominant political school of thought of the 1980's and one which is becoming increasingly prevalent in Ireland. Opposition parties have criticized the 1989 budget for reducing the work incentive by potentially making it financially more attractive for some people to remain on long-term unemployment assistance rather than working. Equality, therefore, can reduce economic growth. But, in a growing economy, redistribution becomes easier in the sense that the relative distribution of economic rewards can be altered without making anyone worse off in absolute terms. Economic growth can hence facilitate the pursuit of equality. The nature of the relationship, at least in terms of the two arguments given here, can be considered either as one of conflict or complementarity, depending upon which direction of causation one chooses to look at.

It seems appropriate, finally, to consider some of the issues arising out of the measurement of economic growth itself. Economic growth is measured, conventionally, by the rate of change of real G.N.P. per capita. Due to the aforementioned assumption, that an individual's welfare is a positive function of his/her consumption, it is widely held that this is a good measure of economic growth because it is a good proxy for welfare. This is obviously not entirely true. Firstly, G.N.P. excludes many activities which contribute to well-being, most notably unwaged labour (e.g. housewives). This, therefore, gives rise to the much quoted anomaly that G.N.P. will actually decline if a man marries his paid housekeeper! G.N.P. also fails to take account of many negative features of economic growth, e.g. pollution or loss of leisure. Finally, it ignores the question of distribution; it would be widely agreed that a more equal distribution of economic rewards would increase society's welfare.

These problems with G.N.P have led to several proposals for alternative measures of economic growth. Net Economic Welfare (N.E.W.) is, perhaps, foremost among these. It is obtained by deducting the cost of negative externalities from G.N.P. and adding the values of non-market activities and leisure. But economics treats concepts of costs and value in the framework of the market and evaluates them from the market. Markets do not exist for the components of N.E.W. not in G.N.P., so it is difficult, subjective and expensive to evaluate N.E.W.

A more explicit attempt to incorporate the idea of social welfare into a measurement of economic growth has also been developed by the Overseas Development Council. It has presented what it calls a "Physical Quality of Life Index" whereby life expectancy, infant mortality and the rate of literacy are taken into account. This alternative was designed specifically for less developed countries in an attempt to show the inadequacy of G.N.P. as a measure of economic welfare. For example, many African countries, although poor, have a primary school programme, whereas in some Middle Eastern countries no such programmes exist despite having higher national incomes. Many of those who have attempted to use alternative measures of social welfare have cogently argued that the growth of the past twenty-five years has been offset by negative externalities and is illusory, not real.

Thus, the complexity of the whole issue can be seen. The desirability of economic growth as a policy objective cannot simply be assumed. It must be the subject for active debate, not dogma and assumption.

Chapter 9 Controlling Inflation; How Successful Can Lawson's Policies Be ?

Raymond Doody & Colm Ryan

Introduction

The U.K.'s current Chancellor of the Exchequer, Mr Nigel Lawson, has, if nothing else, learnt one very important lesson during the last six months. Success, just like failure, can bring a multitude of problems and a tide of criticisms upon those responsible for it. Ten years of Conservative government, which promised to 'roll back the frontiers of socialism', has seen a transformation of the British economy. Unemployment is falling, real growth and income levels have been consistently rising, many firms and industries are operating at, or close to, their productive capacities, taxes on income have been reduced and, in next month's budget, Mr Lawson has a budget surplus in the region of £14bn, partially due to the successful privatization of many public utilities over the last four years.

However, despite being at the helm of such a flourishing economy, Mr Lawson is unlikely to have many fond memories of this past summer nor, indeed, is he likely to relish the months to come. The last eight months have seen the re-emergence of every monetarist's worst nightmare, inflation, and current monetary policy in Britain has concentrated almost entirely on reducing both it and the sizeable current account deficit on the balance of payments that has developed over the last year in the U.K.

Inflation is like a small helium balloon; once your grip on it is lost, it tends to rise very quickly and becomes very difficult to retrieve. While the British economy is at present only feeling minor inflationary tremors, Mr Lawson has been intent on ensuring a halt in the upward trend of the retail price index (R.P.I.), the main statistical measure of inflation in the U.K.

This paper has been written at a time when Mr Lawson has come under quite heavy criticism, firstly for allowing the economy to overheat to the extent that inflation has once again become a threat to its well being, and secondly, for his reliance on the raising of short-term market interest rates to dampen consumer demand in order to reduce the overheating in the economy and, hence, bring down inflation and eliminate the trade deficit that Britain is currently running. This paper has two main purposes. Firstly, to illustrate why inflation has re-appeared in the U.K. economy and how it has manifested itself, and secondly, to discuss and comment on the methods which can be used to combat and control such an inflationary surge.

We will analyse the mechanism by which interest rates work to alleviate inflationary pressures in the economy and the advantages of such a policy viz-a-viz its main alternative, namely a policy of fiscal rectitude in the form of an increase in taxes.

Why the surge in inflation?

The first possible cause of the present inflationary surge is rooted in the stock market crash of October 1987. The unprecedented fall in stock prices eroded peoples wealth. The authorities, believing wealth was a vital component of demand, feared a depression on the scale of the 1930's. Thus, in an effort to avoid a 'second great depression', they flooded the market with liquidity in order to keep consumer demand buoyant. However, we believe the monetary authorities

overestimated the effect of real wealth on expenditure patterns. The 'crash' must be viewed in the context of the previously inexorable upsurge in share prices and the relatively small proportion of wealth held in equities viz-a-viz a booming real estate market. In fact, post-crash share prices were only marginally lower than those at the start of 1987. Secondly, 75% of stock exchange investment is institutional. Thus, the effect of the crash on the consumer was not direct.

Nevertheless, the monetary authorities, fearing recession, flooded the market with high powered money. In hindsight, this turned out to be an over-reaction. The increase in liquidity more than compensated for the minor erosion in people's wealth during 1987. This was a mistaken monetary stimulus to the economy. In the Chancellor's own words, "the loosening of monetary policy in the wake of the stockmarket crash, with the benefit of hindsight lead to subsequent difficulties" (1).

A subsequent inflationary stimulus to the economy came from the Chancellor's own March budget of 1988. Buoyed by a massive budget surplus, he decided to implement widespread tax cuts. Indeed, he went so far as to reduce the highest British marginal tax rate from 60% to 40% and the standard rate to 25%. One of the few areas of agreement between Keynesians and monetarists is that consumption is inextricably linked to income, be it current or permanent. Thus, the effect of the Chancellor's budget was to increase the consumer's disposable income, thereby providing a dramatic fiscal stimulus to the economy.

Although it seems almost paradoxical, the current British budget surplus is also providing an inflationary stimulus to the economy. The current surplus for fiscal '88 is in the region of £14bn. Thus, instead of the now notorious P.S.B.R. that we run in Ireland, Britain has the opposite, a public service debt repayment (P.S.D.R.). Thus the Bank of England is able to redeem much of the government debt at the short end of the gilt market, financed by the budget surplus instead of the usual method which is the issue of gilts at the long end of the market. The net effect of these redemptions is similar to an 'open market operation' purchase of gilts, i.e. it increases the stock of high powered money in the economy.

A fourth and fundamental reason for the present inflationary pressures is rooted in a change in consumers' tastes and preferences. The savings ratio in Britain has fallen substantially over the last decade. This savings ratio is a net concept composed of two components.

Firstly, there is gross savings, i.e. money lodged in deposit accounts and building societies. The tendency to save has fallen recently. This means that more income is being spent currently, rather than being saved and used for consumption in the future. The effect of such a fall in gross savings is increased current consumption demand.

The second component of this 'net savings' concept is borrowing. Lending by the banks in July of 1988 reached an all time high of £9bn. Thus, the public are obviously willing to bear the risk of adapting a more leveraged position. As Alan Budd put it, "the mistake was the failure to recognize the extent to which people were prepared to borrow to finance their spending" (2). This tendency to borrow was further fuelled by the deregulation of financial services. This resulted in increased competition among financial institutions which were almost "tripping over one another" to lend the consumer money. Hence, if a consumer wanted to borrow, he had no difficulty in finding a willing lender. Thus, the fall in gross saving, accompanied by the rise in borrowing, led to more money being available for current spending, resulting in increased demand and rising prices.

The fifth, and final, reason for the current inflationary tendency would come under the umbrella of what would be termed 'wage inflation'. For reasons stated previously, demand was booming. Firms were pushing on their production capacities. Skilled labour was becoming more difficult to find. These were ideal conditions for employees to seek wage increases. Profits were high and so increased labour costs would not hurt. Also, management were reluctant to risk industrial action when demand was high. In the year to June 1988, average manufacturing wages rose by 9%. Thereafter, inflation meant that employees sought pay increases to meet projected future inflation rates. Such a situation was rather like putting the 'cart before the horse'. However, whatever the reasoning, the effect was indisputable. Increased disposable wages led to increased demand which pushed prices up. This led to claims for wage increases to keep pace with inflation and so a vicious circle was created.

It soon became apparent that the monetary conditions had now been laid for an inflationary spiral to occur. Money supply statistics reinforce the viewpoint that monetary conditions were now out of control. M_0 grew by 12% in the year to July 1988. Although this was curtailed later in the year, to a growth rate of 7.7% for the year to December 1988, such figures are still outside the target growth rate of 1% to 5%. Broader monetary measures , M_1 and M_3, grew by 17.6% and 22.0% respectively. These monetary stimuli meant the consumer now held more cash balances than he desired. The monetarist framework of the economy holds that consumers will tend to rid themselves of their excess cash balances by increasing expenditure. This leads to an increase in demand for a wide spectrum of goods and services. Figures show that real consumer demand was far outstripping real G.D.P. growth. Some have put the divergence between the two as high as 3%. Clearly, consumers' increase in demand relative to supply must lead to inflation.

The most obvious manifestation of this rapidly expanding demand lies in the Balance of Trade figures. Department of Trade and Industry (3) figures for 1988 show a trade deficit of £14.3bn or approximately 3.5% of G.D.P. This represented a fivefold increase in the deficit for 1987. The reasons for this are clear. Firstly, there was an increase in the level of imports to meet the excess demand that domestic industry could not meet. Secondly, domestic producers switched production, intended for export, to the domestic market, as higher prices could be obtained on the home market due to the unprecedented demand. Thus, rising imports and falling exports meant a rapidly widening trade deficit traceable to the original monetary stimuli given to the economy.

Interest rate curbs and their logic

Margaret Thatcher had swept to power in 1979 promising to fight inflation. Nine years later, that same Conservative government could not, either from an ideological or political viewpoint, stand idly by and watch inflation spiral towards double digits. In April 1988, the Chancellor, realizing that the inflationary pressures would not magically disappear, decided to do something. The chosen method of control (for reasons that will be explained later) was interest rates.

We see interest rates controlling inflation through three main channels. The first and most immediate way that higher interest rates help to lower inflation is through borrowing and lending. Increasing base rates mean that the opportunity cost of spending money now, rather than later, has increased. This fact does not merely apply to money put on deposit in the bank but to a broader range of

financial assets. Thus, raising interest rates creates a greater incentive to save or invest in certain types of financial assets, thus meaning that less money is spent currently and hence reducing upward pressure on demand/prices.

Higher interest rates also reduce the attractiveness of borrowing to finance expenditure. In their choices, consumers weigh up the utility/return they will derive from the consumption of goods or services. If they are borrowing to finance any purchases, then it is the net return that is all important; higher interest rates reduce this net return.

Interest rates also work through 'squeezing' those who have mortgage interest payments to make. Higher base rates mean higher mortgage rates. Thus, the home owner who has financed his house purchase by mortgage finds himself having less discretionary income to spend on goods and services. Early on in the summer of 1988, mortgage rates stood at 9.5%. They now are in excess of 13%. What better way to curb spending, and hence inflation, than by reducing funds available for consumption?

Higher interest rates also have an effect on the business sector. Those companies that are highly leveraged (i.e. have a high debt/capital ratio) are now faced with making higher interest rate payments on their flexible interest debt capital. This leads to profits being 'squeezed'.

Business profits are also squeezed from another direction. Higher interest rates mean that internationally mobile funds are attracted to London because of the higher returns available there. These investments have to be made in sterling. This creates a high demand for sterling, pushing its price upwards viz-a-viz other currencies. Higher exchange rates adversely affect businesses. Those producers involved in the export trade find their produce less competitively priced abroad. Also, foreign substitutes for domestically produced goods are now cheaper on the home market. The combined effect of uncompetitive exports and incresingly competitive imports squeezes the profits of many British companies.

But how does this squeeze on profits through higher interest rates and a stronger exchange rate help curb inflation? Management has to make a 'satisfactory' profit on capital invested to the owners of the company. In booming times, when demand is high, this is no problem. However, if demand is squeezed a little, management seeks ways of reducing costs. Thus, they will show a greater resolve to resist employee wage claims. This breaks the vicious wage-created inflation circle, where higher wage settlements lead to inflationary pressures which lead to claims for even higher wages.

Having discussed the re-emergence of an inflationary threat in the U.K., and the mechanism by which interest rate rises work to curb this phenomenon, we now wish to examine the rationale behind this choice of policy. The claim that raising interest rates reduces inflationary pressures has been so often repeated by members of the British government that it is difficult not to consider it a self-evident truth. However, there are other policy options open to the Chancellor which many economic commentators feel would halt rising inflation in a faster and less painful manner, and it is to these alternative combative measures that we now wish to turn our attention.

With inflation currently running at 7.5% in Britain the Chancellor currently has three main priorities. Firstly, he must reduce consumer expenditure by a significant amount in the next six months. The root of the U.K.'s current inflationary problem lies on the demand side of the economy. To achieve a simultaneous reduction in the rate of inflation and an improvement in the trade

deficit, domestic demand has to grow by less than the economy's productive potential. While long-term sustainable growth for the U.K. is estimated to be about 3% per annum, domestic demand has been growing at a rate in excess of 7% per annum (4), and it is excess consumer demand that is responsible for the upward pressure on prices. The Chancellor's second priority is to induce a reduction in the growth of the Treasury's targeted money supply, M_0, since it has been growing at an excessive rate and adds to inflationary pressures in the economy. Thirdly, Mr Lawson will want to halt any upward trend in wages since it will stop the vicious circle of rising prices and wages which leads to an upward spiralling of the inflation rate.

In choosing to raise interest rates as a policy measure to counteract rising inflation, Mr Lawson has made it clear that the re-imposition of credit control in the U.K. economy is not a policy under consideration for solving its problems. Controls to limit excessive credit expansion normally take the form of credit ceilings on loans, or taxation of debt, or interest, repayments. However, credit controls are extremely difficult to maintain and are rarely leak-proof. Aggressive financial institutions almost always find ways of working around controls which limit the amount of credit they can issue and this has the effect of distorting many of the economy's most important statistical figures. Another factor working against the introduction of credit controls on financial institutions in the U.K. is the fact that, as E.C. countries approach 1992, Mr Lawson is anxious to avoid adversely affecting the competitiveness of British banks and financial houses viz-a-viz their main European counterparts.

Where criticism of Mr Lawson should be directed is at his failure to get to grips with the overheating of the U.K. economy early on. Signs of credit-financed overheating in the U.K. economy should have been recognized and dealt with at much earlier stage than was the case. 1988 has been a torrid year for Mr Lawson's economic forecasters. Between March and October of last, year the Treasury's yearly estimate for the current account deficit on the Balance of Payments was more than trebled, and monthly forecasts for the trade deficit since then have continued to be over-optimistic.

It is only recently that the Treasury seems to have realized the significance of the problem it is now facing. The appetite of the British consumer is proving extremely difficult to quell and, while Mr Lawson warned the public that a tightening of monetary policy in the form of interest rate rises would take time to dampen demand, he now seems slightly mystified as to the appropriate tightness of policy in the light of a continued worsening of inflation figures. His most recent increase (to 13%) of short-term interest rates would seem to indicate that he does not believe that seven successive rises during the summer months have had an adequate deflationary effect on the economy.

This paper will now examine the question of future economic policy in Britain. In the light of recent economic developments and the forthcoming budget in March, should Mr Lawson review the question of fiscal policy in the form of tax increases as a means of curbing consumer expenditure and rising inflation? This is the principal policy alternative to interest rate increases and seems to be gathering support among many economic commentators in Britain.

The National Institute, in a recent review of economic policy in the U.K., took the view that deflation through higher tax takes would be better than deflation through higher interest rates since it would be less damaging to investment in the

long-run (5). A recent test of this proposition was carried out by Professor Alan Budd on the London Business School model of the U.K. economy (6). His results proved quite interesting. He found that while high interest rates bear more heavily on consumption rather than investment in the short-run (though not in the long-run), and while income taxes increases bear more heavily on consumption rather than investment in both the long- and the short-run, the latter measure takes far longer to achieve a deflationary result. To achieve the same slow down in the economy that a 1.5% point rise in base rates causes after six months would require a 5p rise in the basic tax rate. However, while interest rate impacts tend to flatten off after a short period, higher taxes continue to depress growth for years afterwards. There is also much evidence to suggest that British firms and industries are largely insensitive to interest rate levels when considering how much to borrow or invest, especially if interest rates are expected to fall in the medium-term once the threat of inflation has receded. Such results would seem to justify Mr Lawson's reliance on interest rate increases to curb consumer expenditure.

A second justification for an interest rate policy can be made on the following grounds. The only tax increases certain of having a short-term effect on the economy are increases in excise duties and V.A.T. Those who criticize interest rate rises for feeding directly into the R.P.I., thereby increasing the very phenomenon the policy is designed to reduce, are typically taking a short-term view of the interest rate mechanism and forget that excise and V.A.T. increases suffer from exactly the same problem. Furthermore, they do not tackle the real inflationary problem in the U.K. at present which is the credit boom and the apparent reluctance of the British consumer to save. Interest rate rises reduce the amount of currently in circulation by making it more attractive to save and less attractive to borrow. Income tax or national insurance increases, which do not have the effect of 'swinging' the R.P.I., are difficult to impose quickly and are equally difficult to reverse in a speedy manner.

A frequent criticism of interest rate rises is that, by inducing a flow of capital funds into the country, it strengthens the exchange rate and diminishes the competitiveness of British export industries, thereby worsening the trade deficit. However, there is little evidence to suggest that British firms are suffering through uncompetitiveness on export markets. The trade deficit is a manifestation of excess domestic demand and will remain until this excess demand is choked off. Interest rates work to dampen consumer expenditure while keeping the value of the domestic currency at a firm and strong level which keeps import costs low. High interest rates and a firm pound should also ensure modest, if any, rises in wages as companies begin to feel a squeeze on their profits.

It should be remembered that interest rates are still below the levels to which they were raised in 1985 when the U.K. economy last encountered an inflationary surge. Indeed, the real beauty of interest rates is their flexibility. When better figures loom out of the murky future, the base rates can be reduced quickly and efficiently. The indication is that, during 1989, the trade figures should begin to improve steadily and we believe inflation will peak at below 9.5%. The main reason for this is that the finances of many households should feel the effects of the build-up of mortgage payments around this time. Considering that there has been a near doubling of rates since May, it can be expected that household budget constraints will shift quite markedly inwards. Already, retail sales figures for January are markedly down on last January while holiday companies have

reported very large decreases in their sales volumes. It seem that Mr Lawson's 'application of the brakes' to the U.K. economy has indeed begun to slow it down.

Footnotes

1. Chancellor Nigel Lawson in a 'Financial Times' interview, January 1989.
2. Professor Alan Budd in an article published in the 'Financial Times', January 1989.
3. British Department of Trade and Industry figures (provisional) released 27 January 1989.
4. Bank of England Quarterly Bulletin, August 1988, Economics Division.
5. National Institute of Economic and Social Research Quarterly Review, August 1988. (The Institute has been one of the more outspoken critics of Mr Lawson's interest rate policy).
6. Professor Alan Budd now works with Barclay's Bank and was one of the developers of this particular model.

Chapter 8 Monetarism & the British Monetarist Experiment

Paul Devereux

I intend to outline, in this article, the most crucial tenets of monetarism and to discuss the main issues which have arisen when monetarist ideas have been put into practice, particularly with regard to the U.K. monetarist experiment of 1979-85.

The central tenet of monetarism is quite simple - it is that changes in the nominal stock of money are the dominant cause of changes in money income. Monetarists believe that the largest effect of money supply changes is on inflation rather than real macro variables. As Friedman put it: "The central fact is that inflation is always and everywhere a monetary phenomenon. Historically, substantial changes in prices have always occurred together with substantial changes in the quantity of money relative to output. I know of no exception to this generalization". Monetarists believe that macroeconomic policy can have little effect on real variables such as output and employment, that its main effect is on the inflation rate.

The cornerstone of monetarist theory is the quantity theory of money as restated by Friedman. The traditional quantity theory was encapsulated into the identity $mv = py$ where m is the money supply, v is the velocity of circulation, p is the price level, and y is the real national income. It was assumed that the velocity of circulation was affected by institutional factors which, by their nature, were very slow to change. Therefore the velocity of circulation was assumed to be relatively constant and the money supply to be directly related to the nominal national income. Keynes practically destroyed the quantity theory when he introduced the idea of an interest-elastic speculative demand for money. If the demand for money was to vary with something as volatile as the interest rate then it, and by implication the velocity of circulation, could not be assumed to be constant. Friedman set out to rehabilitate the quantity theory by showing that the demand for money was interest inelastic. He succeeded by treating money as an asset which could be regarded as on a par with bonds, equities and consumer durables. The individual could have a choice between money and bonds but the choice could also be between money and a whole range of consumer durables. Thus the rate of interest becomes comparatively insignificant. The revived quantity theory yields a transmissions mechanism which stresses a broad and direct impact of expenditure. Individuals will seek to dispose of excess money balances by paying out a larger sum for the purchase of securities, goods and services than they are receiving. This attempt raises the price level right across the entire menu of assets in the revised Quantity Theory. The process continues until desired real cash balances and actual real cash balances are equalized. This results in a higher level of nominal national income. Friedman even suggests that there may be some overshooting in this process leading to a cyclical adjustment of real cash balances about their desired level. This transmission mechanism takes a far wider range of assets into account than does its counterpart in Keynesian liquidity preference analysis, although for many this extension only

adds to the complexity of the mechanism without providing us with any further theoretical insight into it.

Friedman has placed great reliance on econometric research. His greatest work, co-written with Anna Schwarz, "A Monetary History of the United States" aimed to test the relationship between the money supply and other economic variables for the period 1867-1960. Three main conclusions were reached:

(i) Changes in the money stock were associated with changes in money income and prices over a long period.

(ii) There was a stable relationship between monetary changes and economic changes.

(iii) Changes in the money stock often occurred independently and were not the result of changes in economic activity.

Furthermore the velocity of circulation was found to be relatively constant and there was a steady fall in the velocity of circulation over the period studied. These results enabled a monetarist policy prescription to be put forward. The money supply should be controlled and allowed to increase in line with proposed national income growth. In this way inflation would be reduced to minimal proportions. However both the results of Friedman's research and the monetary policy prescriptions were to come under increasing attack once attempts were made to implement monetarism.

Margaret Thatcher and the British Conservative party gained power in June 1979 on an obviously monetarist ticket. Inflation was over 10% in 1979 and was to reach 22% the following year. Sterling M3 was chosen as the monetary target and in 1980 the medium term financial strategy set target levels of M3 growth through to 1983-84. The targets were overshot, the economy plunged into recession as sterling proved to be crisis-prone. Strict monetarist policy was replaced by a more discretionary policy in March 1982, more attention was paid to exchange rates and monetary targets were loosened. This more pragmatic form of monetarism survived until October 1985 when monetary targets were suspended. This period served however to show that monetarist assumptions about the transmission mechanism, the controllability of money supply and of monetary aggregates, the velocity of circulation and the role of exchange rates were flawed and naively optimistic. It is these issues which I shall now address.

Firstly, consider the transmission mechanism between money stock and nominal income. Friedman postulated that changes in the money supply caused changes in money income. Critics have argued that the causal link runs in the opposite direction, i.e. from nominal income to money supply. Friedman found in his "Monetary History" that on average peaks in the growth rate of the money stock were found to precede peaks in economic activity by sixteen months. Troughs in monetary growth preceded cyclical low points for the economy by an average of twelve months. In both cases the lag was found to vary considerably, from about four months to twenty nine months. Therefore he accepted that money stock growth was a poor predictor of inflation in the short term. It can also be accepted that when one considers the existence of cycles in economic activity, the peak monetary growth now recorded could as well be the response to the last high point in activity as the forerunner to the next one. Various studies have been carried out in order to determine the direction of causality but these have proved largely inconclusive. Sims used U.S. data for a twenty year period and concluded that the money supply is exogenous (i.e. it is independently determined) and that it determines nominal income. Williams, Goodhart and Gowland found, using

U.K. data, the money supply to be endogenous. Tobin reworked the results obtained by Friedman in the "Monetary History" assuming that the money supply was endogenously determined. He found an almost perfect statistical fit to explain the evidence that money changes always preceded changes elsewhere in the economy. The lags which Friedman had discovered emerged just as well when the money supply was assumed to be endogenous. Friedman later accepted that there would be feedback effects on monetary growth from changes in economic activity, but claimed that far stronger effects ran in the other direction.

Kaldor, in contrast to Friedman, argued that in a credit money economy the supply of money can never be in excess of the amount individuals wish to hold. He contended that the level of expenditure or goods and services cannot be said to rise in consequence of an increase in the amount of bank money held by the public. Rather it is a rise in the level of expenditure which calls forth an increase in the amount of bank money. It is on these lines that the transmission mechanism during the U.K. experiment shall be outlined, and the plausibility of the argument discussed.

There is little doubt that the tight monetary policies implemented in the U.K. in the early 1980's exerted some downward pressure on inflation. However the real effect of monetary policy could be linked to a shrinkage of effective demand brought about by high interest rates, a strong pound, and tight fiscal policies. Interest rates are the main tool of the Bank of England to control monetary variables. The raising of interest rates for this purpose leads to an overvalued exchange rate and this combination undermines the competitiveness of British industry. The result is factory closures and jumps in unemployment. The existence of high unemployment reduces the bargaining strength of labour, depresses wage settlements and thus exerts downward pressure on inflation. In this way the transmission mechanism is unambiguously from income to money. The U.K. experience would appear to support this view, Britain's real GDP fell by 2.2% in 1980 and 1.6% in 1981 but even these figures conceal the severity of the recession. North Sea Oil was booming in this period and giving the economy a badly-needed boost. However manufacturing output fell by 17.5% between the second quarter of 1979 and the first quarter of 1981. Unemployment rose by 1.8 million in the space of two years. Parts of the North of England were devastated. During the period both interest rates and the value of sterling were at extremely high levels. However Alan Walters has argued that high exchange rates had little effect on the exporting sector, that manufacturing exports were higher in 1981-83 than 1974-76 and that huge productivity increases occurred when they were required to protect the exporting sector. A counter-argument is that productivity increases merely reflect an increase in the capital labour ratio brought about by huge unemployment. Furthermore one wonders if productivity increases would always save industry from dangerously high exchange rates. Walters further argued that the British recession was only slightly more severe than that suffered by its main trading partners. However one must remember that the 1979 oil shock meant a huge balance of payments problems for most Western governments in the early 'eighties. The U.K., with its booming oil production, had no such worries. In short it appears that monetarist policies ensured that pain of inflation reduction was far greater in the U.K. than elsewhere because monetarism could only succeed through a transmission mechanism of falling output. It seems to echo Keynes's statement about monetary policy in the U.K. in the 1930's. It was "simply a campaign against the standard of living of the working classes" operating

through the "deliberate intensification of unemployment".

One assumption implicit in monetarist theory is that the money supply is exogenous and that it can be controlled by the monetary authorities. There are several measures of the amount of money existing in the economy at any one time. In the U.K. they range from very narrow definitions such as the monetary base (MO) to very wide definitions such as sterling M3 and PSl2. The basic monetarist position was that any of these magnitudes could be targeted successfully. The important point was that one magnitude be chosen and that monetary policy would concentrate on keeping it within its target range. Implicit here were two assumptions:

(i) The monetary aggregate chosen could be maintained within its target range.

(ii) All monetary measures would experience similar movements.

Both these assumptions were to break down.

Monetarists believed that achieving a steady rate of growth in the money stock was in the power of the Bank of England. The money supply measure chosen and targeted by the Conservatives in 1979 was sterling M3. The initial experience was that major hikes in interest rates were required to keep sterling M3 within its target range. During the second half of 1979 the government succeeded in targeting sterling M3 but this achievement was at considerable cost. The minimum lending rate had been pushed to 17% in November 1979, a level at which it was to remain for eight months. Even so success was temporary. "The Medium Term Financial Strategy", published in 1980, outlined targets for sterling M3 through to 1983/84. In spite of record interest rate levels every single target was overshot. Professor Charles Goodhart, the Bank of England's specialist advisor on monetary economics from 1968 to 1985, has explained why sterling M3 was so difficult to control. The two main components of sterling M3 are bank lending and the PSBR. The Bank of England exerted tight control over the PSBR part by ensuring that it was fully funded, i.e. enough government stock had been sold to cover it. The problems arose in controlling bank lending. In the absence of direct controls, interest rates are the only tools of policy here. However interest rates can be crude tools with unpredictable effects. Higher interest rates, even real rates of seven percent, failed to restrain borrowing during the 1980's. In fact during the 1979-81 recession higher interest rates actually boosted bank lending by increasing the amount of distress borrowing by troubled firms already burdened with debt. Higher interest rates merely squeezed them even further and the money supply proved impossible to control.

Monetarists further believed that all monetary magnitudes would move in similar ways. As David Laidler expounded, "The consensus belief was that, if the growth of one aggregate was pinned down by policy, then that of the others would be brought into line by the stable portfolio behaviour of the private sector and all would be well". It was not to be. In 1981 M1, a narrow money measure, marked time while sterling M3 grew at 18%. The discrepancy in growth rates was in someway due to record interest rates which encouraged people to reduce their cash holdings in favour of interest-bearing deposits. The government followed its monetary rule and ignored the performance of M1 with the result that what appeared to be a loose monetary policy was, in fact, dangerously tight. The economy was suffering the consequences in terms of output and employment. Almost a decade before this, the Heath government had been lulled by low M1 growth into believing that monetary policy was tight when it was not. The point is the difficulty governments face in assessing which indicator, if any, can tell the

'true story'. If none can, monetarist rules cause havoc.

Another essential element of monetarist theory is the claim by Friedman that the velocity of circulation is relatively constant and predictable. David Hendry and Neil Ericsson subjected Friedman's research conclusions to test in 1983. Hendry was not impressed. He commented "A wide range of claims concerning the behaviour of monetary economies was made by Friedman and Schwarz and they asserted that these claims were consistent with the long-run historical evidence. A remarkable feature of the book is that none of the claims was actually subjected to test. Rather, equations were reported which did not manifestly contradict their theories and this non-contradiction was taken for corroboration". Hendry used their data to show that there was no evidence of a stable demand for money. Even more interesting is Hendry's 1985 study of the velocity of circulation in the U.K. since 1979. He found that there had been sharp shifts in the velocity of circulation and that these had been mainly due to financial innovation. He commented that money demand models would only remain useful if it is known that financial innovation will not occur or if innovations do occur that their quantitative effects can be anticipated. The sharpest movements in velocity have occurred in those measures of the money stock most actively targeted. For example the velocity of circulation of sterling M3 rose on average by 1% a year throughout the sixties and seventies but has fallen on average by 2.5% a year since 1980. This type of scenario is in keeping with Goodhart's law: "any observed statistical regularity will tend to collapse once pressure is placed on it for control purposes". The difficulty with shifts in velocity is that they only become apparent long after remedial action can be taken. Therefore it is difficult to judge whether any figure for the money supply growth implies tight or loose monetary policy.

Monetarist models have largely ignored exchange rates. In those models where exchange rates have featured prominently, it has been assumed that currencies would follow a smooth adjustment path in line with relative rates of monetary growth. However since the breakdown of the Bretton Woods system in 1973, large movements of short-term capital between countries have ensured that the currency market has not been a stable market tending towards equilibrium. In practice exchange rates have tended to move in line with interest rates. Therefore monetary targeting in effect demotes the exchange rate to being a residual variable of economic policy. The monetarist experiment in the U.K. showed this polity to be impractical as adjustment of interest rates often proved necessary to protect sterling irrespective of the growth in the money supply. Twice the government was forced to raise interest rates to prevent a sterling freefall which would have had large inflationary consequences. This policy made sense but it was not monetarism in that money targets were considered to be less important than the value of the pound. If sterling falls threatened inflation, sterling rises were responsible for making British industry less competitive. It all underlines the importance of maintaining some degree of control over exchange rates in a very volatile market. It should be noted that not only the U.K. but also Canada and Switzerland have been forced to effectively abandon monetarist policies in order to maintain reasonable control over their currencies.

One other monetarist tenet is the advocacy of monetary rules and their denial of any positive role for discretionary monetary policy. Friedman advocated that if necessary governments should be required by law to publish and abide by a monetary rule. Even if a non-discretionary monetary policy did make economic sense, which it doesn't, this proposal shows a level of political naivity that is

disquieting. On an economic level monetary policy must continuously take into account such factors as exchange rates and velocity shifts. Politically, it is absurd to suggest that politicians would transfer power to some other authority, e.g. the Central Bank. Elections will always cause shifts in economic policy and monetary policy will feel the effects. Rules will never replace the discretion of politicians.

Was monetary policy responsible for the decline in inflation in the U.K. until the mid-1980's? David Laidler wrote in 1985 "Monetarism's most basic claim was that, in order to slow down inflation, money growth needed to be curbed. Over the last five years, on average, money growth has been more restrictive than it was in the 1970's and inflation has fallen markedly". Two factors would indicate that this monetarist claim is overstated. Firstly inflation rates fell significantly throughout the OECD during the same period. Britain was no exception to the trend. Secondly several non-money explanations were relevant to explaining the fall. Oil prices fell quickly after reaching a peak in 1981. Fiscal policies had also been very tight in the early eighties. A true statement of the budget position can be arrived at by adjusting the public sector's financial balance for inflation and cyclical factors. The result is either a structural deficit or surplus. From 1973-79 the government ran structural deficits every year except 1977. From 1980-84 there were structural surpluses every year. Although it would be unreasonable not to ascribe some of the fall in inflation to monetary policy, monetary policy only achieved this through throwing the economy into deep recession. It is not coincidental that the big rise in unemployment occurred from 1979-81 when monetary policy was very tight. It was this huge rise in unemployment which restrained inflation.

The final point I would like to address is whether the U.K. experiment has been a fair trial of monetarist theory. Monetarists claim that it has not, they have many criticisms of the actions of the U.K. government in implementing monetarist policies. These criticisms are twofold. Firstly they argue that sterling M3 was an inappropriate monetary target and that instead the monetary base (MO) should have been targeted. Recent evidence does indicate that the response of MO to interest rates is reasonably stable and significant. Johnson suggests that a one percentage point rise in interest rates reduces MO by 1.7% (with an average response lag of 11 months). This would indicate that MO could be controlled by interest rates. However previous seemingly stable relationships between monetary aggregates and macro variables have proved to be very fragile and it is likely that Goodhart's law will again apply if MO is ever targeted. The second claim is that the Bank of England did not display the level of competence that was expected of them in their attempts to control the money supply. This argument is someway devalued in that Friedman made the same claim about the Federal Reserve Board in the U.S.. As Kaldor points out "It was nowhere stated in the writings of Friedman or any of his followers that the quantity theory of money only holds in countries where the monetary authorities are sufficiently 'competent' to regulate the money supply". Although there is, perhaps, some truth in the claims that errors of policy were made, laboratory experiments in economics can never take place in the real world. We must consider the experiences we have.

My conclusion is that monetarism has proved to be a failure when implemented in practice. It is based on untenable assumptions and can cause unnecessary pain to society and the economy as a whole.

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Chapter 7 The Rational Expectations Hypothesis

Mark Munroe

As economists have increasingly recognized the importance of expectations in determining economic behaviour, they have attempted to incorporate within their behavioural models some representation of the mechanisms by which economic agents form their expectations. The psychological literature on expectations tends to suggest that peoples' expectations are intimately connected to their particular situations and no general theory seems to hold. Economists on the other hand argue that expectation schemes must have consistent properties across economic models as with other assumptions in economics such as the profit maximization assumption in areas relating to financial transactions. Various proposals have been put forward to explain expectation formation, such as that expected price is equal to the latest known price, or that expectations are formed adaptively, the forecast being determined by recently observed forecast error. This gives the price expectation as a geometrically weighted moving average. These models assume that individuals only learn from past experiences and mistakes. However it was suggested that given that a lot of theory in economics is based upon utility maximization, where it is assumed that economic agents do the best they can with what they have, that expectations should be assumed to be formed in a similar manner, that is in a rational manner. Rational expectations is such a theory which by Muth's definition yields predictions of future events which differ from the corresponding eventual outcome only be errors which are themselves independent of the variables used to generate the predictions. So rational expectations is a concept concerned with the interaction between expectations and reality. If one considers economic agents to be rational then its consistent to consider information gathering and expectation formation as determined by the same procedures for all agents.

In order to explain simply how rational expectations are formed Muth advances the hypothesis that they are essentially the same as the predictions of the relevant economic theory, that is the hypothesis suggests that the economy does not generally waste information and that expectations depend specifically upon the structure of the entire system. Muth claimed then that what kind of information was used and how it was put together to frame an estimation of future conditions is very relevant because the character of the dynamic process is typically very sensitive to the way expectations are influenced by the actual cause of events. He also claimed that it was very important to make predictions about the way expectations would change when either the amount of available information changes and/or the structure of the system changes. He claimed that dynamic models do not make adequate allowance for rationality; i.e. that the subjective probability distribution of outcomes tends to be distributed for the same information set about the prediction of theory of the objective probability distribution of outcomes.

Rational expectations then asserts:

(1) that information is scarce and that the economic system does not generally waste it,

(2) the way expectations are formed depends specifically on the structure of the

relevant system describing the economy,

(3) a public prediction will have no substantial effect on the operation of the system unless it is based on inside information.

Assertion (1) implies that all the available and relevant information must be examined and analysed, indeed many theorists have criticized rational expectations in that it seems to suggest that the marginal cost of gathering and using information is equated to the marginal benefit and that information is implicitly assumed a free good, if all the available information is to be used by everyone. Since expectations are informed predictions of future events they are essentially the same as the predictions of the relevant economic theory. So the suggestion is that people are able to gather, analyse and form accurate predictions of outcomes from the available information. But according to Muth rational expectations does not assert that the search work of the entrepreneur resembles the system of equations in any way nor does it state that the predictions of entrepreneurs are perfect or that their expectations are all the same. What rational expectations does suggest is that the expected value of formal expectations equals the true value. We do not require that all individuals respond to pace signals in order to maintain a vibrant pace system. Instead we recognize that only a handful of individuals are required to arbitrage the market. Individuals will use the information that they have analysed which in most cases will represent only part of the information available and trade accordingly. If enough arbitrage takes place the equilibrium market pace will behave as if it is rational even though many individuals in the market will remain passive. As Rawls puts it the rationality of a person's choice depends not upon how much he knows but upon how well he reasons from whatever information he has, however incomplete.

When arbitrage activities are costly the amount of information dealt with by each agent will be less as he equates the marginal benefit of information gathering to the marginal cost, so that it will have more adjustments (as each adjustment contains a smaller quantity of information) before the equilibrium price is settled.

Muth did not suggest that people initially formed the correct rational expectations; rather that he said :

(1) what information there is can be rationally used, and

(2) it is not necessary for each individual to analyse it all.

So he outlined the station and left the dynamics on the side line. Claiming that the activity of the entrepreneur need not mirror that of the economy implies recognition of arbitrage and a dynamic learning process. A continuous time model, in which agents know all aspects of the economic system and accept the values of some of the parameters in an equation describing the behaviour of the economy is necessary to make the model plausible and realistic. This is perhaps a forward market approach to rational expectations in which trading on the basis of future events and outcomes takes place in the present with regard to expectation.

We live in a dynamic economy in which economic activity offers agents a succession of ambiguous and unanticipated opportunities which cannot be expected to stay fixed, while more information is collected and one characterized by externalities, information problems and market imperfections which clog the formation of rational expectations. If there is a role for arbitrage we cannot be sure that expectations will converge on the true value. The real economy may never be close to a rational expectations equilibrium.

Rational expectations should not be seen as the finale of the monetarist or

Keynesian theories, but rather as a prologue for a revitalization of the theory of expectations, information and policy, in economics; and perhaps even, of the power of the market, and of consumer sovereignty. If an economy operates with Keynesian rational expectations, the impact of monetary expansion will be immediately understood by economic agents, and output will be increased in anticipation of its effects, without going through the usual channels. On the other hand, if an economy operates with monetarist rational expectations, they will cause output to deviate only randomly from its natural level, whatever policy is introduced. But although a policy ineffectiveness result is derived in this case it is claimed that the variability (but not the mean) of output may be affected by the authorities.

To further understand the implications of Muth's concept one should distinguish between the problems of forecasting variables that are exogenous to the system and those that are endogenous to the system. Expectations about variables that are exogenous to the system do not affect the variables within the system. On the other hand expectations or forecasts of endogenous variables will effect the dynamics of the endogenous variables. It has been suggested that for expectations to be rational in this light and to conform with the theoretical model requires that people must be able to see indefinitely into the future. Rappoport challenges this on the grounds that it is inconsistent with a broader definition of rationality. But hypotheses are maintained until some evidence dictates that the hypothesis be rejected; so only information available at a point in time need be processed rationally until some further information arises which is inconsistent with this.

What I propose to do now is to examine the theoretical insights into various areas of economics that the rational expectations hypothesis has given us.

Friedman proposed an adaptive expectations process and hence a vertical long run Phillips curve while accepting the existence of a short run trade off between inflation and unemployment. For rational expectations theorists deviations in unemployment from its natural rate are purely random, so there is no trade-off between inflation and output, even in the short run. Here rational expectations clash with empirical observation; it does not allow for the persistence of the business cycle.

Lucas analyses variations in the price level by classing them as (a) real or nominal and (b) temporary or permanent. Given that an individual only has partial information he cannot distinguish with certainty between a movement in all prices from a movement in his own. Since the economy is awash with information we rationalize further the assumption that people only use part of it as gathering accurate economy wide relevant information takes time, money and resources; moreover it is difficult to get precise information at short notice. Lucas also argues that profit opportunities depend on being able to react quickly to possible "bargains" in the economy so that by the time an individual produces units for an economy wide measure his profit opportunity may have gone. The realistic need for a quick response mitigates against the advantages of trying to obtain an accurate economy wide information set.

With the possibility of a confusion between aggregate and relative price levels, economy wide business fluctuations can easily develop. Changes in the money supply may then be attributed in part to aggregate price changes and in part to relative price changes. To the extent that the perceived price change is thought to be temporary/relative employment will increase as leisure is now thought more

expensive. Recessions and decreases in employment occur when the aggregate price level is lower than anticipated and workers perceive this to be in part a temporary fall in their relative price level.

It has been shown in countries with a volatile inflation history that output will not respond very much to unanticipated inflation. We can start in an economy with a stable inflation history where policy makers can engineer booms rather easily by causing some unanticipated inflation but this will become increasingly difficult. The invariance model I will now use, proposed by Lucas, stated that the public is assumed to form expectations in period t about the price level that will prevail in t+1. If no actual price level is greater than anticipated representative producers will attribute part of this to an increase in their relative price level, increasing output. What this model then proposes is a downward sloping aggregate demand function reflecting the fact that with a given money stock higher prices must lead to lower output to keep nominal demand constant. The aggregate supply function is assumed upward sloping drawn for a given level of expected price reflecting the fact that at higher prices the gap between actual and expected prices increases leading to a higher level of output. With fixed price expectations an increase in the money supply will through the transmission mechanism raise output and prices. But this result is not consistent with rational expectations; what rational expectations suggests here is that the money supply in time t is a function of the last period level of output plus a random error.

It has been suggested by rational expectation critics that high amounts of money growth even if they are anticipated can lead to real effects. This is because higher money growth causes inflation which leads to a shift out of money into real capital, and a higher steady state capital stock. Thus the rate of monetary expansion is likely to have an effect on real variables quite apart from any expectational error. Environmental features also play an important role in the neutrality of money. Market imperfections such as interest rate ceilings and regulations serve to diminish the likelihood of the neutrality of money. One should therefore not expect to complete neutrality of money but the above arguments are so insignificant in their impact on the economy that we can safely maintain the neutrality assumption.

Critics of rational expectations claim that it fails to explain the business cycle as errors of price expectation. The main source of departure from the rational state are short lived and random. They claim that under rational expectations there could not be persistent unemployment above the rational rate as this would imply a high serial correlation between the successive error of expectations which is inconsistent with rational expectations. What he suggests the model says is that if output is greater than the full employment level (boom) in this period there is nothing in the model to predict that next period's output will be anything but full employment. The error term E_t contains no information about E_{t+1}. Furthermore this interpretation of the model is rejected by the data, that is if an economy is in a boom period, this period it will most likely be in a boom period next period. Rational expectations explains this in a very plausible manner.

(1) Given market imperfections etc. individuals do not become aware of forecast errors until several periods later. That is for x periods the duration of one wave of the cycle individuals have no easy way of knowing their mistakes and have no way of correcting it until it is known fully.

(2) Random shocks occur in successive periods each hitting from a different

angle but are such that a series of them causes output to remain above or below full employment for a number of periods.

(3) There may be unavoidable lasting side effects from a shock. If a firm sees an unanticipated rise in its money stock which causes a rise in the price level, the firm perceiving that part of its price change may be a change in relative price will increase production lowering inventories. Once firms realize that they were fooled they will wish to resume normal production except that its stock of inventories is below normal so it will maintain a high level of production in subsequent periods to build inventories back up.

(4) If agents respond to an unanticipated price movement which causes them to increase output this will cause some firms to make investment in capital stocks and to gear up. When they realize they have been fooled they can either scrap the new equipment or use it. Given now that investment and capital stock is above its desired level they will allow it to depreciate but at the same time the output this capital stock turns out is higher than normal so the boom period continues until it depreciates to its normal value.

What we have now learnt then is that while the theory implies that forecast errors which are the aggregate demand impulses are serially uncorrelated it is certainly logically possible that proportions mechanisms are at work that convert these impulses into serially correlated movements in real variables like output and employment. What we have been discussing is one extreme point of a radically distinct vision or description of prices markets and their functions in the economy. The Keynesian position suggests that markets respond slowly to excess demand and supply which makes the economy susceptible to prolonged periods of unemployment and excess capacity. Investment decisions are often governed by intangible factors such as the state of long term expectations. Even if markets were feasible, price adjustment may in fact be destabilizing given it promotes expectations about future price movements and may cause a postponement of action/investment in search of a time when it will reach a minimum. The alternative is rational expectations. Markets are viewed as sensitive barometers and indicators of current and future developments and are efficient possessors of information in the economy. Too much is at stake for expectations of future events to be irrational. The economy devotes substantial resources to gathering information about future events and forecasting. Rational expectations is also backed up by one simple fact, inflation. If we're in an inflationary environment it becomes more and more difficult to sustain a Keynesian notion of wage and price inflexibility. There is much logical and empirical evidence to show that wage and price setting does invade the formation of rational expectations.

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Chapter 6 The Quantity Theory of Money

Frank Hayes

In this essay I wish to consider the quantity theory analysis and to extend this into a discussion of the major policy approaches to economic stabilization. In doing so I shall briefly outline three strands of quantity theory to emerge from this process and I shall point out their different emphases and focal points. Finally I shall outline the monetarists' revised version of the quantity theory and then discuss the theoretical and policy debate between both versions of the quantity theory and Keynesian liquidity preference analysis.

The traditional quantity theory analysis found its origins in the violent price fluctuations of the fifteenth, sixteenth and seventeenth centuries. This period was characterized by debasement of the currency in the form of official devaluations and fraudulent clipping by individuals combined with a considerable influx of American gold and silver. These developments were compounded by the fact that such extra monetary units were promptly spent on wars which simultaneously interfered with the production process. These factors combined to provide economic observers with the phenomenon of rapidly increasing prices.

Traditional quantity theory

The historical foundations of the quantity theory broadly consisted of a hypothesis that the stock of money equals price times real income to be combined with a concept of velocity. However these components can each be given a number of different meanings which must be made to correspond. Various definitions of the money supply arise involving considerations such as whether or not to include demand deposits. Similarly real income may include all transactions, only the transactions incident to production and distribution, or only transactions consisting of income payments and income expenditure on consumer goods. Friedman outlines three strands of quantity theory to emerge because of such differences of interpretation. We will proceed to a consideration of these.

The Transactions Form of the Quantity Equation

This version of the quantity theory followed directly from the analysis above and its most notable adherent was Irving Fisher writing in 1911. It is expressed as $mv = pT$. As the name suggests it is based on the transactions function of money with the right hand side of the equation corresponding to the transfer of goods, services or securities and the left hand side to a corresponding transfer of money. It can be viewed purely as a tautology with monetary expenditure equalling the monetary value of goods traded and the velocity calculated in such a way as to maintain the identity.

In the context of this interpretation the economists of this tradition are viewed as having made two broad assumptions. Firstly, velocity is assumed to be constant in the short-run on the basis that it is determined by habit, institutional arrangements and banking practices, none of which will be greatly affected in the short-run. Secondly, a full employment scenario is posited so that the level of transactions is broadly constant. This leaves a directly proportional relationship between the money supply and the price index.

To what extent economists of the period did consider velocity to be constant is

a matter of question. Kemmerer portrayed velocity as being a function of the general business situation and furthermore that the amount of money hoarded varied widely in the short-run. Fisher stated that the price level is the one absolutely passive element in the equation of exchange and furthermore that in practically all cases of substantial fluctuations of price levels it was m only, and not v or T which varied sufficiently to be considered as the explaining variable. Hence it probably is not overly inappropriate of us to suggest that the transactions quantity equation was based on at least an implicit notion of the constancy of velocity.

The Income Form of the Quantity Equation

A criticism can be levelled at the transactions approach to the effect that it considers all forms of transaction as being alike. In fact transactions fall into several categories, for which payment periods may be expected to differ. Broadly we can say that this can be expected to be so for capital transactions, purchases of final goods and services, purchases of intermediate goods and payments for the use of resources. In response to this an alternative approach has arisen and become popular, involving a consideration primarily of payments for final goods and services.

Hence the quantity equation becomes $mv = pY$ where Y is the national income at constant prices and where v is the average number of times in a given period that money is used in making income transactions. The characteristic approach of this feature therefore is that only the net value-added is counted in any given exchange, in line with national income accounting. This is in contrast with the transactions approach which includes all intermediate transactions at total value.

The income approach can be seen as a variation on, and possibly a refinement of, the transactions approach. It does indicate changes in prices and quantities as we are looking at the real output of the economy rather than an abstract measure of the total number of transactions that are undertaken. Whether or not it is preferable as a measure of the demand for money is however debatable. If changes in the ratio of intermediate and capital transactions to income affect the demand for money then the transactions approach would appear to be preferable as it takes account of such factors whereas the income approach does not. Hence the relative merits of the transactions and income approach are very much a question of faith.

The Cambridge Cash Balance Form of the Quantity Equation

The cash balance approach is at the opposite end of the spectrum from the transactions approach. The latter stresses money in its medium of exchange function whereas the former emphasizes the store of value aspect of money. It is generally assumed according to the cash balance approach that the amount of money that people will wish to hold as a temporary store of purchasing power will be related to the real income of society as this limits the volume of potential purchases available to society. We can therefore express the demand for money as $M_d = uY$ where Y is real income and u is the percentage of real income over which people collectively wish to maintain control in the form of cash holdings. If the money supply is exogenously determined to be M then equilibrium is brought about by the price mechanism. This therefore yield $M = pkY$.

Common ground between this approach and the other two is to be found with

similar concepts of demand. If we assume that the ratio of income to transactions is constant then the Cambridge u is equivalent to the reciprocal of the v in the income approach and proportional to the reciprocal of the v in the transactions approach. The demonstration of the strict quantity theory requires constancy in u and with the Cambridge k being purely a transactions demand for money which similarly is implicit in the concept of velocity used in the other two formulations.

Traditional Quantity Theory Synthesis

The different versions of the quantity theory are based on quite different approaches and this is particularly in evidence between the transactions and cash balance versions. Since one stresses money as a medium of exchange and the other as a store of value, differences will arise as the delineation of the money stock is considered. Similarly, one will emphasize the mechanical aspects of the payments process while the other will focus on factors affecting the suitability of money as an asset. Admittedly the factors interact with one another hence reduce the effect of the apparent dichotomy ; but it is nonetheless the case that they are very different in outlook.

On account of this it is perhaps surprising that these different forms of quantity equations lead to similar theoretical conclusions under the collective name of quantity theory. Hence the traditional quantity theory maintained that the only possible substitute for excess money balances was goods and services and in doing so the role of the financial market was virtually ignored. This gave rise to the belief that an enlargement of the monetary stock would lead to increased expenditure on commodities and that the effect of this would be seen as falling mainly on prices rather than quantities. It assumed that the demand for real money balances was relatively stable and that the velocity was consequently inclined toward constancy. This assumption was justified on two grounds. Firstly the demand for money was perceived solely as a transactions demand which would reasonably be expected to be relatively stable. Secondly, in line with full employment equilibrium, increased spending led to price rather than quantity increases so that the real quantity available to hold was kept constant. Thus the traditional quantity theory reconciled a variable money stock with a constant demand for money and a passive price mechanism.

The monetarist revival of the quantity theory

The Keynesian revolution overwhelmed the traditional quantity theory and for a long time its acceptance was so complete that it was above challenge. This lofty throne disintegrated with the advent of the 1970's and the combination of rapid monetary growth and accelerated inflation. At the crest of the ensuing tide was Milton Friedman and the Chicago School of economics. Friedman adopted an empirical approach to the quantity theory and he expresses his conclusions as follows: "The Quantity Theory has increasingly become the generalization that changes in desired real balances (in the demand for money) tend to proceed slowly and gradually or to be the result of events set in train by prior changes in supply, whereas, in contrast, substantial changes in the supply of nominal balances can and frequently do occur independently of any changes in demand. The conclusion is that substantial changes in prices or nominal income are almost always the result of changes in the nominal supply of money."

This approach has tended to be labelled as the modern quantity theory and indeed it is evident from the quote above that its conclusions are similar even if

the reasoning differs. The modern quantity theory is in fact very much a development of the Cambridge cash balance formulation of the quantity theory. Just as in that formulation the modern quantity theory is concerned with the determination of the money national income incorporating prices and output. Furthermore, in doing so, both view money in its role as an asset, looking at the demand for money in terms of an exercise in portfolio selection. However, the range of assets considered in this portfolio selection exercise differs considerably between the two.

Milton Friedman, at the forefront of the modern quantity theory, outlines a stable demand for money and its determinants. In doing so he distinguishes between different uses for money; as an asset and as a factor of production, by considering separately the demand for money of ultimate wealth holders and of business enterprises.

Starting with the former, Friedman said that the demand for money was a function of several variables. First was total wealth in its capacity as a budget constraint in determining resources available for distribution among different assets. Given difficulties in measuring total wealth, income tended to be used as a proxy for it, but Friedman preferred a concept of permanent income, as nominal income is too prone to year-to-year fluctuations and because he believed that permanent income provided a more realistic base for consumption. Second he considered the division of wealth between non-human and human forms. This is relevant because non-human wealth is more liquid and human wealth tends not to be readily realizable into non-human wealth - borrowing on the collateral of earning power is limited. Hence the higher the ratio of non-human to human wealth the higher the demand for money is likely to be. Third is the expected rates of return on money and other assets. The modern quantity theory sees money as being a substitute for a wide range of other assets and so it must consider the net yield attaching to money and these other assets. Money will have a convenience yield and a negative yield equal to the rate of inflation and perhaps net charges or interest if it is held on deposit. The yield of other assets will consist of currently paid yields and the possibility of a capital gain. Arbitrage between these assets will tend to equalize the yields at the margin so that the interaction of these factors will affect the demand for money. Finally Friedman mentions various other factors determining the utility attaching to services rendered by money to those rendered by other assets. In this is included items such as expectations as to the future degree of economic stability and variability of the rate of inflation.

In terms of business enterprises the factors affecting the demand for money are slightly different. Business enterprises are not faced with the constraint of total wealth as they have access to capital through the stock markets. Instead however there is a notion of scale which determines the productive value of money to the enterprise and this will effectively limit the enterprise's demand for money to a certain efficient range. The division of wealth between human and non-human forms is large irrelevant as the enterprise must buy both factors. The yield on money and other assets is of equal importance to the enterprise. Finally Friedman describes the business enterprise counterpart of other variables as being the variables other than scale that affect the productivity of money balances.

Hence we can see that the demand for money by ultimate wealth holders and by business enterprises depends broadly on the same or analogous variables. The key point of this analysis is that the demand for money depends on a whole range of factors which change only very gradually. Hence a stable demand for money

is asserted. The importance of this point stems from the fact that the supply of money was capable of extreme volatility. Hence an independent supply of, and demand for, money is posited so that changes in the money stock were seen to have an impact on the economy.

It is therefore of interest to note the transmission mechanism suggested by the modern quantity theory. It is similar to that of the traditional quantity theory except that it involves a much wider range of assets in the course of adjustment. Consider then a rise in the money stock. People now have excess money balances and they seek to get rid of them as the yield to money at the margin is now lower. Consequently they move into other assets. By doing so the prices of these assets rise and the yield falls at the margin, so that different assets are now preferable. This process is deemed to continue until the net yield of all types of asset (including money) is equalized. Part of the extra money will be held and part of it will have been channelled into financial assets and commodities. In the course of this adjustment the money that was channelled into commodities will lead to prices rises. Hence this modern quantity theory is the empirical assertion that changes in the demand for money tend to proceed gradually or to be the result of events set in train by prior changes in the supply of nominal balances, whereas in contrast substantial changes in the money supply can and frequently do occur independently of any changes in demand.

The theoretical and policy debate

This area gives rise to a much broader debate ranging over crucial theoretical and policy issues. At a general level it is an area fraught with red herrings and misrepresentations. It is complicated by the fact that the main protagonists in the theoretical debate cannot even agree on where to differ. They create theoretical scapegoats and attribute them to their opponents. Hence Tobin can say: "Once again ... Friedman has tried to saddle his opponents and critics with an extreme assumption and to claim the entire middle ground for himself", but the same can equally be said of the Keynesians. It is consequently not surprising that the textbook versions can stress the wrong differences, or the right differences for the wrong reasons, between the different schools of thought. Hence I will first outline the textbook view and amend it in accordance with my perception of the principle areas of conflict.

It is easy to sketch what are perceived to be the vital differences between the various bodies of theory. The traditional quantity theory was based broadly on two assumptions. The only substitute for excess money balances was seen to be commodities and the demand for money was seen to be stable in line with the transactions element of demand. As a result a rise in the real money stock would lead to expenditure on goods and services which was seen as leading mainly to price increases. The monetarist revival of the quantity theory operates on a different set of assumptions. Money is viewed as a substitute for all assets - both real and financial - and hence this version straddles the other two. Textbooks tend to depict monetarist theory as assuming that the demand for money is generally insensitive to changes in the interest rate. The consequences of these assumptions ensure that a monetary expansion will give rise to an increase in output and prices.

In terms of policy proposals the traditional quantity theory has been eclipsed by Keynesian liquidity preference analysis and the monetarist restatement of the quantity theory which now form the foreground of debate. The textbooks outline

two distinct camps on stabilization policy. The claims of both can be expressed in terms of IS/LM analysis. Hence the Keynesians postulate a relatively flat LM curve and a steep IS curve in line with the assumptions of interest elastic demand for money and interest inelastic consumption and investment demand. This leads to a focus on fiscal policy as the optimum tool for stabilization purposes. By contrast, the monetarists are portrayed as envisaging a near vertical LM curve based on the belief that the demand for money is interest inelastic and hence they are seen to stress monetary policy at the expense of fiscal policy. This is a very simplistic resume that is consequently a very misleading one.

This is perhaps not as surprising as the fact that some of the main contributors to the debate fail to agree on where they differ. Hence we can witness an exchange between James Tobin and Milton Friedman where Tobin says: "First let me explain what I thought the main issue was. In terms of the Hicksian language of Friedman's article, I thought (and still think) it was the shape of the LM locus", and Friedman replies: "Substantively, the most important point in Tobin's comment in his contention that the main issue between 'monetarists and neo-Keynesians' is 'the shape of the LM locus' - namely that what he regards as characteristic monetarist propositions require the LM curve to be vertical, whereas neo-Keynesian propositions rest on the LM curve being positively sloped." What therefore are the main issues?

Clearly the main issues are to be found only by reading the literature, not made easier by the fact that these writers attribute extreme assumptions to their opponents. Hence the neo-Keynesians depict the monetarists as relying on a vertical LM curve signifying perfect interest inelasticity. In reality the broad thrust of monetarist theory relies merely on the hypothesis that the LM curve is not horizontal. However despite such difficulties, the main points of contention can be discerned from the literature and I would pick on three such points which are in fact interrelated.

The first point of contention is the monetarist extension of the asset menu. The implication of the two schools on this point are far-reaching. With Keynesian theory the assumption ensures that a monetary expansion must operate via a change in interest rates and that any expansionary impact on the real sectors of the economy can arise only through secondary effects. By restricting substitutes for money to financial assets you similarly ensure that the demand for money will be relatively interest elastic. This yields a relatively flat LM curve so that the usefulness of monetary policy is played down. By contrast, the monetarist assumption gives rise to a direct impact on the real sectors of the economy of a monetary expansion, as well as producing changes in interest rates. It will also ensure a more interest inelastic demand for money than its Keynesian counterpart. In doing so it gives rise to a steeper LM curve which therefore presents monetary policy in a more positive light.

Keynes's General Theory was very much an explanation of the persistence of unemployment and so had tremendous appeal given the conditions prevailing at the time of its publication. The monetarists have adopted a very different attitude to unemployment with Friedman's natural rate hypothesis which has proven increasingly popular in latter years. Monetarists view unemployment as merely fluctuating around its natural level. Such a natural level of unemployment is seen as arising from the actual structural characteristics of the labour and commodity markets, including market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labour

availabilities, the costs of mobility, and so on. Hence expansionary policies, while they can produce a real effect and increase output in the short run, merely lead to price rises in the long run. Hence the traditional notion of the neutrality of money is maintained.

Finally, disagreement arises over the assumed interdependence of the IS and LM functions. While much consideration was given to the relative slopes of the functions, the appropriateness of the IS/LM formulation and the separation of its two components was not questioned. Increasingly however an interdependence between the two functions has been recognized. It is now universally recognized that budgetary policies have monetary implications and the crowding out controversy is a very current issue.

Given the longitude of the debate and the eminence of some of the participants it would be exceptionally optimistic to expect firm conclusions from this source and indeed none are forthcoming. Any preference between the two should ideally relate to one of the three prime differences just outlined. The Keynesian assumption of money and financial assets as being sole substitutes appears quite unreasonable and given that much of his analysis relies on this assumption it must be treated with a respectable degree of scepticism. On the other hand, it is difficult to reconcile the rapid changes in unemployment from one level to another which then persists with the notion of a natural rate of unemployment. Hence neither theory is perfect, but the flaw in the Keynesian analysis would appear to be absolutely fundamental and so would have to be treated very seriously.

The area of appropriate policy objectives is fraught with difficulty. The Keynesian approach of demand management is in disrepute; fine-tuning policies are widely acknowledged as being unfeasible. The monetarist growth rule is intuitively appealing with unemployment at its natural level and rational expectations ensuring optimal business decisions. However this is not without its difficulties either (e.g. the choosing of the appropriate target variable and the delineation of the money stock, or the fact that money stock is not under direct control and is not directly observable with interest rates being a very unreliable index). Hence an improvement must be found either via alternative policies or statistics which are both more accurate and more up to date.

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Chapter 5 The Consumption Function

Philip Lane

The theory of the consumption function is one of the most unresolved issues in contemporary macroeconomics. As consumption forms the major component in aggregate demand, the lack of a reliable estimate of the consumption function leads to serious errors in economic forecasts of the level of demand and hence to flawed decision making at a policy level. This essay seeks to outline the major theories of aggregate consumption demand and to explain their relevance to contemporary policy issues.

The Keynesian absolute income hypothesis states that $C = a + bY$, where b is the marginal propensity to consume (MPC). (1). He based this view on a "fundamental psychological law" that the MPC was between zero and unity and was below the APC. (2). An implication of this non-empirical contention was that the rate of consumption would fall as incomes rose, requiring that investment rise (via the State) in order to keep aggregate demand constant. This view that consumption was a function of current income and that the APC fell as incomes rose was seriously weakened by Kuznet's empirical studies (3), which showed that the APC was constant over long time periods but that there was significant cross-sectional variation in the APC across income levels.

The problem for economists, then, was to reconcile "Kuznet's paradox" of a stable APC as income varies in time-series data but variable APC in cross-sectional studies, and also the cyclical variability of consumption between the short-run and the long-run. Dusenberry's "relative income hypothesis" (4) was an early attempt, postulating that a person's consumption habits depended on his relative income. An increase in his income thus leads to conspicuous consumption and other visible forms of expenditure but the aggregate consumption rate remains stable, if the overall social pattern of income distribution is unchanged. Cyclical fluctuations in the consumption level were explained by the lagged response of household's spending habits to a change in income.

Friedman's "permanent income hypothesis" (PIH) (5) and Ando and Modigliani's "lifecycle hypothesis" (LCH) (6) have dominated consumption function theory since the 1950's. The PIH broadened the influences on consumption to include the individual's holdings of physical assets and of "human capital", or the discounted value of future income streams. Thus, consumption no longer depended solely on current income but on a range of variables which combined to determine a person's expectation of his permanent income. This was intuitively attractive as it explained why risk-averse individuals would seek to average out their consumption over a lifetime, making adjustments via borrowing and saving if current income happened to diverge from the long-run or permanent income level.

Formally, $C_t = k\, Y_{Pt}$ where

$Y_{Pt} = Y_{Pt} + z\,(Y_t - Y_{Pt-1})$

and z = a positive fraction

Y_{Pt} = permanent income in period t.

$Y_t - Y_{Pt-1}$ = transitory income in period t.

This model plausibly explained empirical consumption data. The stability of long-run time series data was due to the constant relationship between consumption and permanent income. Cross-sectional variability was accounted for the fact that higher income groups presumably contained a large number of people with higher than average levels of transitory or unexpected earning. Another reason for cross-sectional variation is the highly unstable income levels of some groups, notably farmers. Cyclical fluctuations occurred as a person's expectation of permanent income changed only adaptively over time, so that there was a lagged response in consumption to even enduring changes in income (such as a permanent tax cut).

Modigliani's LCH similarly recognized that variables other than current income affected consumption decisions. The LCH was rooted in the microeconomic theory of consumer behaviour (7) and argued that at a given stage in an individual's lifecycle, he wished to consume a given proportion (O_m) of the discounted present value of current income, holdings of physical assets and future income streams. That is,

$$C_t = O_m (W_t + Y_t + Y^e_{t+1}/(1+r)+...))$$

Where O_m = a positive fraction, depending on the individual's consumption-saving preferences at a given stage in his lifecycle.

W_t = value of physical assets in period t

Y_t = current income

Y^e_{t+T} = expected income in period (t +T)

This allowed for considerable cross-sectional variation as people of different ages or preferences consumed at different rates, but cancelling out at an overall level meant a constant APC over time.

Some economists were dissatisfied with the PIH and LCH for relying on the vague concepts of 'permanent' or lifetime income. As such, the theories were merely descriptive rather than establishing a causal explanation for the behaviour of aggregate consumption demand. Spiro (8) argued that a "lifetime income" was merely a proxy for wealth and that the PIH, LCH models ignored the dynamic relationship between savings and wealth accumulation. In a long-run stationary position, consumption would equal income with savings zero. This is because, Spiro posits, the purpose of saving is to accumulate wealth. A person will eventually achieve his desired level of wealth and if income is assured, the rationale for saving disappears. The observed overall positive level of savings is explained by the fact that incomes (and hence the desired level of wealth) are growing, because of uncertainty and a desire to make bequests to one's progeny.

Clower and Johnson (9) take a similar view that consumption is ultimately a function of wealth. Individuals face a consumption-wealth difference map and the lower MPC of high income groups is a result of their desired level of wealth dynamically increasing as incomes grow. Groups with stable levels of income will eventually consume almost all of their incomes as they reach their desired wealth level, which remains static.

PHI, LCH and these consumption-wealth models all point usefully to the

multivariate determinants of consumption. The role of expectations is central, as factors such as future income streams or the desired level of wealth will be sensitive to changes in economic variables such as inflation, the interest rate, unemployment, government debt and the returns in capital markets. At the extreme, a rational expectations model (10) argues that consumption demand takes a random walk as all predictable factors have already been incorporated into one's consumption decision, and so only "shock" factors can cause fluctuations in the consumption rate.

The last two decades, however, have seen a highly unstable consumption level with the OECD savings ratio peaking at 14% in the mid-1970's (11) but falling to below 10% currently. Such cyclical variability was due to people revising future income expectations for the following reasons. Firstly, the high inflation rates of the 1970's raised the level of savings needed to maintain the real value of financial assets. Rising unemployment increased savings as expectations of future wage earnings became more uncertain. The 1980's saw the reverse process in operation but, more controversially, other factors may have also have contributed to the consumption boom in the OECD nations which will be discussed below.

The effect of rising real interest rates is ambiguous. On the one hand, the opportunity cost of not saving rises but this may be offset by the fact that, at a higher interest rate, a chosen target can be reached with less savings. Changes in the U.S. tax system encouraged borrowing, with increased relief on interest charges. The wealth effect of rising share prices on the value of household's financial assets may also have increased consumption but the 'Black Monday' crash does not seem to have dented households' enthusiasm for high consumption, as yet, perhaps because a high proportion of shares are held by institutions. It is increasingly argued that the long-run consumption rate has permanently increased also, with financial innovation and more competitive capital markets giving people easier access to credit. Thus, aggregate consumption demand may be moving closer to the predictions of PIH and LCH models, which depend on perfect capital markets if households are to smooth out consumption plans over a lifetime via borrowing and saving. Another reason for a permanently lower savings ratio is that the existence of welfare benefits and guarantied State pensions has reduced the 'rainy day' motivation for saving. Nigel Lawson has suggested the taxation of pension rights in order to encourage private individuals to save more.

The most controversial issue in current debate on consumption demand is the impact of government budget deficits. Robert Barro has argued that taxpayers will increase private savings in anticipation of higher future taxes if the government runs a deficit and so the overall consumption level is unaffected by the government's fiscal stance, with public sector dissaving (a deficit) offset by a rise in private sector saving. This neo-Ricardian hypothesis was found to hold true for Ireland (12) but is surely at odds with the U.S. situation where both government and household sectors are borrowing heavily.

The consequences for policy making are radical if Barro Debt Neutrality is valid. Macroeconomic demand management is redundant as an increase in government borrowing will simply "crowd out" private consumption demand - another blow for Keynesian advocates. On a more general level, the advances in consumption demand theory since Keynes illustrate the unpredictability of demand management policies on aggregate demand. The empirical evidence is united in showing

that consumption responds in a lagged fashion to changes in income. A tax cut, for example, may only increase consumption demand after several time periods (as the PIH predicts) and so political desires to "finetune" the economy, as short-run electoral considerations might demand, are frustrated.

A final comment concerns the considerable differences in consumption rates between nations. The Japanese savings ratio stands at 18%, in contrast to the U.S. figure of 5%. One explanation is differing age structures - the more old people there are, the more dissaving is occurring. Recent work by Summers in the U.S. (13) suggests, however, that the old actually save more, in a desire to leave bequests for their descendants. Many see the differing ratios as cultural-U.S.-babyboomers are spendthrifts, whereas the Japanese retain a belief in the virtue of saving. The consequence, however, is far-reaching with the U.S. current account deficit being financed by thrifty foreigners rather than domestic savers, exacerbating the imbalances in world trade and capital flows which have dominated the world economy in recent years.

Footnotes

1. Begg, Dornbusch, Fischer, "Economics", Chapter 20.
2. J.M. Keynes, "The General Theory", Chapters 8, 9.
3. Discussed in Greenaway and Shaw "Macroeconomics", Chapter 2, p.19.
4. J. Dusenberry, "Income, Saving and the Theory of Consumer Behaviour", 1952.
5. M. Friedman, "A Theory of the Consumption Function", 1957.
6. A. Ando and F. Modigliani, "The Lifecycle Hypothesis of Saving", 1963.
7. F. Modigliani and R. Brumberg, "Utility Analysis and the Consumption Function"(1954).
8. A. Spiro, "Wealth and the Consumption Function", 1962.
9. R. Clower and M.B. Johnson, "Income, Wealth and the Theory of Consumption", 1968.
10. Attfield, Demery and Duck, "Rational Expectations in Macroeconomics".
11. "The Economist", March 19, 1988, p. 78.
12. Michael J. Moore, "The Irish Consumption Function and Ricardian Equivalence", Economic and Social Review, October 1987.
13. Begg, Dornbusch, "Macroeconomics", Chapter 8, p.267.

SECTION 2
MONETARY & FISCAL ECONOMICS

Chapter 4 A Review of J.M. Keynes

Margaret Doyle

"I believe myself to be writing a book on economic theory which will largely revolutionize...the way the world thinks about economic problems". (1)
J.M. Keynes

Keynes is the towering figure who has shaped and given direction to economics in the twentieth century. The upheavals of the early years of this century posed a serious threat to the survival of liberal capitalism. Keynes averted this threat by his relentless questioning of conventional patterns of thought and his replacement of them with new ones pertinent to the overriding issues of his time.

This dominance of Keynes arises for reasons other than the revolutionary impact of his General Theory. Keynes was a man of letters, an establishment figure; he played a major role in policy-making during and between the two World Wars; he gained fame for his prognostications concerning the Versailles settlement, his opposition to the return of the gold standard, his proposals for the financing of the Second World War, his part in the Bretton Woods agreement, his advocacy of a European free-trade area, his pioneering advocacy of national income accounting and econometric models; but most importantly his stature derives from his far-sighted genius. In the midst of the Great Depression Keynes foresaw the affluent society in which we now live.

Despite this dominance there is no consensus as to what view of the economy Keynes really espoused. The followers of Keynes may be classified as orthodox Keynesians, extreme Keynesians, fundamentalist Keynesians, or neo-Keynesians (to name but a few of the distinctions). These difficulties of interpretation arise because of inconsistencies between the General Theory and other of Keynes's works and because of lack of clarity within the General Theory itself. Such confusions were natural given Keynes's "long struggle to escape" from the conventions of his time but they have led to selective readings of Keynes by scholars eager to claim Keynesian approval for their own variety of economics. In this essay I shall treat of "The General Theory", then discuss the three dominant interpretations of it, and lastly I shall discuss the emergence of neo-Keynesian economics in response to the challenge of neo-classical economics.

In considering the General Theory we must outline the views of the 'classical economist' whom Keynes set up as a figure to inveigh (despite the fact that no single classical orthodoxy existed and despite the foundations of so-called Keynesian concepts in Pigou's work, e.g. the concept of national income, expectations, and the multiplier). Classical analysis was concerned with the efficient allocation of resources, a matter treated under the headings of price theory, value and distribution, and partial and general equilibrium. It was paralleled by the philosophies of individualism and utilitarianism. Coddington describes it as "reductionism", i.e. where the market reduces to individual choices. These choices are subject to the constraints of rationality and the condition of feasibility in the aggregate, i.e. market equilibrium occurs because the Walrasian auctioneer

brings about a vector of market-clearing prices by a process of tatonnement (or "groping").

Three markets were identified, those for labour, goods and money. Labour supply was a positive function of real wages, while labour demand (assuming that capital, technology, perfect competition and the aim of profit maximization are given) was a negative function of real wages. At equilibrium real wages equalled the marginal product of labour. Because prices adjusted immediately to shocks the economy was thought to be at full-employment equilibrium most of the time. Even if it were not, involuntary unemployment was not believed to exist.

The labour market alone was held to determine values of real variables - employment, output and real wages. Since, according to Mill, there was "nothing more insignificant than money", money was neutral in the classical theory. Under the assumptions that customs of payment were unchanging, demand for money was considered to be a function of money income. Supply of money was considered to be fixed by the authorities. Since money supply had to equal money demand, money alone determined the price level.

Finally, since expenditure and income were equal, savings and investment were brought into equilibrium by changes in the rate of interest.

Thus economic theory had a formal validity, i.e. it could claim logical consistency. However the microeconomic concepts upon which it was based were subjective and therefore untestable. Furthermore they seemed as much based upon social philosophies such as the virtues of thrift and fiscal propriety, the view of man as a utility maximizing pleasure machine, the value of individualism, the unquestioning acceptance that the pursuit of individual good leads to the general good and its corollary ,the acceptance of inequalities of wealth as a "good thing" since the rich were held to save more, as upon any mathematical truth.

During the Great Depression conventional economics counselled further deflation, wage cuts and budgetary restraint. These remedies aggravated the malaise instead of relieving it because they had misdiagnosed the illness. The problem was not that real wages were too high but that aggregate demand (A.D.) was deficient and that the market lacked liquidity. The classical theory did not mention aggregate demand and its theory of interest rate determination (the loanable funds theory) did not consider the desirability of cash balances. With sinister appeals to communism and fascism gaining strength during the disillusionment of the inter-war years, the diagnosis according to Keynes of the principal economic ills of the time and his suggestion of a cure fell upon welcoming ears.

The substance of General Theory has been distilled into a few sentences by Spiegel:

"The national income equals expenditure for consumption and investment. A national income at less than full employment indicates that expenditures are deficient. Among expenditures for consumption and investment, those for consumption are more passive and tend to change in response to changes in income. Changes in income are generated by, and reflect in a magnified form, changes in investment. Investment expenditure is determined by the relationship between anticipated rates of return from investment and the rate of interest. The rate of interest reflects the public's preference for holding assets in the liquid form of cash. Expenditure that is deficient - inadequate to generate full employment - may be augmented by the stimulation of consumption and investment. Private investment may be supplemented by public investment, that is by the compensating spending of public authorities, with a resulting 'compensatory economy' and

the partial socialization of investment". (2).

The first Keynesian concept in this analysis is that of average and marginal propensities to consume, APC and MPC respectively. The observation of constant MPC and declining APC was derived from 'psychological law' and seemed to be verified in cross-sectional studies. This subject has been adequately treated in another article in this review.

The second concept is that of the multiplier. Given that Y=C+I, then dY=dI/(1-MPC), i.e. changes in income are a multiple of changes in investment. This simple equation has powerful implications. Firstly, it gave a theoretical underpinning to the role of government in economic stabilisation. Secondly, when extended to the open economy it provided a mode of analysing international trade. Thirdly, it showed the importance of investment and liquidity rather than thrift and deflation in times of recession. Lastly, it reversed the classical arguments in favour of inequalities of income on the grounds of the low marginal propensity to consume of the rich.

He postulated, contrary to his beliefs in the "Treatise on Money", that savings equals investment.

He introduced the marginal efficiency of capital as an explanation of the inducements to invest. Thus, while he accommodated the main body of micro-theory with the use of the maximization principle, he also underlined the volatile character of expectations which influence investment decisions.

In contrast to the classical loanable funds theory Keynes identified changes in the rate of interest as a response to changes in liquidity preference. He ascribed three motives to the demand for money: the transactions, precautionary and speculative motives.

Apart from the body of the "General Theory" Keynes also added some philosophical notes. In these he advocated a role for government in *management* of the economy but he specifically rejected the notion of state socialism. Rather the government should try to keep the economy at a stable level of full employment. By keeping the rate of interest low investment would be encouraged and liquidity of the market guaranteed. This would also bring about "the euthanasia of the rentier", i.e. it would no longer be possible to derive an income from the ownership of capital. He saw this management as an essential safeguard for individualism and liberal capitalism.

Moreover, once full employment was reached "the classical theory comes into its own again from this point onwards". (3). This unambiguous statement is remarkable in its acceptance of the possibility of equilibrium and its acknowledgement of the virtues of the classical system (efficiency and personal liberty). It would seem to remove the emphasis on disequilibrium trading which so many followers have emphasized. I shall now discuss the three interpretations of Keynes.

The first is termed "fundamentalist Keynesianism" by Coddington. This view regards Keynes's work as a frontal assault upon the reductionist programme. Joan Robinson, one of its foremost exponents, explicitly rejected Keynes's "equilibrium" statement; the fundamentalists saw Keynes's 1937 Quarterly Journal of Economics article as representative of what was central in his works; the volatility of expectations and therefore the inherent instability of the market system. Hugh Townsend argued that since prices are set in money they cannot be separated from the expectational elements which characterize Keynes's rate of interest.

Shackle, in parallel with Keynes's work on probability in which he rejected frequency theory, developed an ingenious theory of decision-making under uncertainty. Each managerial decision is a unique event, he posited, and this calls the choice-theoretic basis of reductionism into question. Without a stable basis in choice logic the concept of market equilibrium collapses.

Business cycle theory evolved from Keynes's observations of vague, uncertain and shifting expectations. Joan Robinson argued that equilibrium was unapproachable and therefore unattainable if not in existence. In short, the fundamentalists saw Keynes's General Theory merely as a first step in the wholesale revision of economic theory. Their nihilism, however valid in itself, is, however, in contrast with Keynes's eclecticism.

"Hydraulic Keynesianism"evolved as other writers attempted to clarify the central tenets of the General Theory for the lay reader. This interpretation views the economy at an aggregate level in terms of disembodied and homogeneous flaws, such as income, expenditure and output. The central characteristic of hydraulic Keynesianism is the belief in the stable relationship between these flows at an aggregate level. Thus it is inconsistent with reductionism, which places its emphasis on prices. hydraulic Keynesianism analyses a situation in which prices are failing both as disseminators of information about relative scarcities and in the provision of incentives to act upon information. It embodies the view that employment is more a matter of demand for output than of real wages. There is only one agency making deliberate acts of choice, the government. The most widely accepted orthodox interpretation was Sir John Hicks's income-expenditure model. It followed Keynes in its assumption of wage and price rigidities and in showing, in a more elegant way than Keynes' diagrams of his four interdependent markets, the simultaneous determination of interest rates and incomes. Specific Keynesian assumptions regarding the slope and position of IS and LM curves and the assertion that the liquidity trap and low interest elasticity of investment placed the efficacy of monetary policy in doubt led to the championing of 'fiscalism'.

IS/LM became widely accepted, firstly because of its ingenious simplicity as an expository device and its ease of adaptation to an open economy setting, and secondly because it bristled with policy prescription at a time when policy prescription was greatly needed. During the 1940's, 1950's and 1960's, Keynesianism was incorporated into every manifesto as the idea of how a largely decentralized economy may be subject to broad central control through the instrument of the budget became popularized. Again social considerations were never far away. This theoretical justification for government intervention was seized upon by those rebuilding their infrastructure after the ravages of war and by those who saw a role for government in the pursuit of goals other than full employment, such as urban renewal, cleaner air and water, and the alleviation of poverty. Lastly, policies based upon hydraulic Keynesianism have had different effects, leading one to question its scope.

These policy conclusions were seen by many as a vulgarization of Keynes. Firstly, conclusions about the efficacy of monetary or fiscal policy depend upon initial assumptions regarding the IS and LM curves and are not inherent in the model. More importantly, the IS/LM framework itself has been criticised. It is mechanistic - it assumes that fiscal and monetary policies are independent and thus ignores feedback effects. Prices do not enter the analysis. It is inherently an equilibrium approach and overemphasizes Keynesian theory in terms of comparative statics while not treating disequilibrium dynamics. It is of note that in a

revision of Keynesian economics Hicks dropped IS/LM. He has expressed unease about how widely it has become used in recent years.

In the 1950's the 'neo-classical synthesis' emerged. Its central tenet was that a Keynesian recession is a special case of the classical system. One of its foremost exponents was Patinkin who developed Pigou's idea of a real balance effect. As such he was both trying to introduce an equilibrating role performed by relative price changes into the Keynesian model and also to supplement the Walrasian system in which prices are indeterminate at equilibrium with the real-balance effect.

Clower and Leijonhufvud emerged in the 1960's decrying orthodox Keynesianism and reaffirming that there was to be no synthesis between Keynesian economics and its alternatives. Both economists offered differing analyses, both of which bear a resemblance to Keynes's economics but which also contain their own ideas. Coddington termed their work "reconstituted reductionism". They advocated the abandonment of the concept of equilibrium and its replacement by disequilibrium prices and its underlying choice logic. Thus they emphasized the interdependence of markets in the Keynesian model in contrast with the independence postulated by classicists.

Clower's contribution was his dual decision-hypothesis which explained how consumer spending depends upon current income. (A full discussion of how he treats the micro behaviour while at a macro disequilibrium may be found in the Student Economic Review, Volume 1, J. Fingleton).

Leijonhufvud set himself the task of finding "a fresh perspective" from which to consider income-expenditure theory. He and Clower both reject the Marshallian partial equilibrium analysis, the alleged independence of markets, and the impossibility of false trading. Rather they posit quantity rather than price adjustments, an absence of liquidity, false trading, the interdependence of markets and associated spillover effects derived from a neo-Walrasian view of General Theory and the "Treatise on Money" combined. Barro and Grossman later coined a phrase for the knock-on effects the multiplier would induce following a fall in aggregate demand - "deviation-amplifying feedbacks", which aggravate rather than stabilize an initial disequilibrium.

While Clower and Leijonhufvud hold claims regarding their particular insights into what Keynes really said, their disequilibrium analysis may well have a role to play in analysing real effects of policy measures (such as those proposed by hydraulic Keynesianism) where prices, being slow to adjust, provide incentives, but the wrong ones.

Keynesian economics became discredited in the 1960's and early 1970's as demand management policies were misapplied in situations of full employment leading to inflation and budget deficits. Friedman and Phelps became recognized in the 1970's as supply shocks and inflation plunged the world into a recession which they had predicted. Friedman's restatement of the quantity theory of money spawned monetarism. Neo-classical economics emerged to focus attention upon the micro foundations of macro theory, or supply-side economics. That school of thought is now in the ascendence, but there are still neo-Keynesians who remain unpersuaded. Barro and Grossman, for example, emphasize how slow the economy is to respond to changes and hence claim that the economy, once disturbed from equilibrium, will be slow to revert to it. Although they believe in the concept of equilibrium, they question "obsolete Keynesianism" for its use of the Keynesian consumption function along with the neo-classical labour demand

function, which they believe to be mutually incompatible. They argue that in a Keynesian recession, we are off the neo-classical labour demand function and hence use of AS/AD is invalid. Moreover, they posit that IS/LM is an equilibrium analysis in which spillover effects implicitly run in one direction only, i.e. from the labour to goods market. They argue that, because of interdependence, spillover effects run both ways. Bruno and Sachs, in an analysis of the O.E.C.D. economies, classify recessions and booms into their classical and Keynesian components. They recognize that in practice the difference is not so stark as in theory. The neo-Keynesians and neo-classicals both have assimilated parts of standard classical and Keynesian theory into their models, illustrating the lasting contributions of both schools.

Keynes's economics has its limitations. It is of relevance in conditions of less than full employment; the use of the multiplier at full employment leads to monetary, not real, changes. His treatment of economic aggregates ignored environmental issues which have assumed importance now. Because of his view that "in the long-run we are all dead" his variables did not have a time dimension and his assumption of price and wage rigidities were not always valid. Most importantly, by concentrating on the relationship between employment and output he ignored productivity and a host of other institutional factors on the supply side.

However, Keynes did revolutionize the way people think about economic problems. His theory of consumption has been refined by Friedman and Modigliani. Although he did not discuss distribution, Kaldor's theory started from Keynes's analysis. The multiplier concept has applications in the field of international economics and induced the acceleration principle and the steady growth theories of Harrod and Domar. The importance he assigned to aggregates and his writing on econometrics (which underwent a revolution of its own in the inter-war years) stimulated both national income accounting and dynamic econometric models. Unlike the subjective notions of classical economics, Keynes's postulates were subject to empirical testing - he reinvigorated the debate concerning the neutrality of money by his assertion that variation in cash balances are associated with changes in the rate of interest.

While responding to the burning issues of his time, Keynes yet provided a commanding structure which was abstract and general. It is more likely that it is its richness in its provision of ample food for thought rather than its inconsistencies which leads to a reinterpretation of Keynes every twenty years. The greatest testimony to his lasting stature was, perhaps, the acknowledgement by Friedman that, "we are all Keynesians now". (4).

Footnotes

1. Moggridge, "Collected Writings of J.M. Keynes", Royal Economic Society, 1973, vol XIII, p.492.
2. Spiegel, "The Growth of Economic Thought", p.608.
3. J.M. Keynes, "The General Theory of Employment, Interest and Money", p.378.
4. Milton Friedman, quoted in P.A. Samuelson's "Economics", 8th edition.

Chapter 15 A Critical Assessment of the 1989 Budget (Adapted from a paper given by the author to the Student Economic Workshop)

Jonathan Wright

The predominant reaction among commentators to this year's budget was that it was a bland budget, an opportunity lost, and one totally lacking in any sense of direction. It is a criticism which has been leveled against all Irish budgets within the recent past. In general, it may be countered by claiming that these commentators do not fully appreciate the political, and especially administrative problems associated with radical measures, but such an apology for inaction is not valid on this occasion because of the unique coincidence of factors both requiring and facilitating substantial reform. This budget, I propose to argue, has been an economic non-entity to a degree not fully appreciated even by its more vociferous critics. Its failure to engage in any real reform was in no way due to political or administrative factors beyond a willingness to cave into pressure groups seeking to preserve the *status quo*.

The first heading under which I intend to analyse this budget is that of its fiscal stance; it is here perhaps more than anywhere else, that this budget is over-rated. Table 1 shows the CBD, EBR and PSBR for 1986, 1988 (excluding the tax amnesty) and the 1989 budget forecast, all as percentages of GNP.(1)

Table 1
Borrowing indicators as ratios of G.N.P.

	C.B.D.(%)	E.B.R.(%)	P.S.B.R.(%)
1986	8.5	13.1	15.7
1988 (excluding tax amnesty)	4.5	6.1	8.5
1989 (projection)	4.1	5.3	6.4

The first striking feature is the improvement between 1986 and 1988, one which no-one foresaw in the runup to the 1987 general election; but the second feature is that this year's budget has failed to continue the progress in relation to the debt problem; it has hardly changed the PSBR, and it represents a standstill *viz-a-viz* 1988. It has been observed that the tax yield projections in the budget are rather pessimistic, but in terms of debt stabilisation this is likely to be fully neutralized by the over-optimism of the 6% nominal GNP growth forecast contained in the budget.

Where this standstill leaves the crucial debt to GNP ratio is an issue in the dynamics of debt which I do not propose to analyze in much depth. But a critical condition for debt stabilization is that the deficit should equal the product of outstanding debt and the nominal GNP growth rate. For 1989, using the PSBR as the borrowing indicator, this amounts to a PSBR of about 6.3% of GNP. So the 1989 position is of a debt which is just stabilised. It is a situation in which the problem is contained, but in which nothing is being done to resolve it.

Table 2 shows some debt-GNP ratios for ten years hence on a number of rather strong assumptions with different initial (ie 1989) PSBR's. While the actual figures are rather hypothetical, because of the strength of the assumptions, the underlying idea is not. The compounding effect of changes in the

servicing burden amplifies the trend in the debt/GNP ratio, whichever way it is going. A zero PSBR must become a medium term policy objective if the ratio is to be reduced to an acceptable level within the foreseeable future. Merely stabilizing the debt leaves a grave problem hanging, like an albatross, indefinitely, over the Irish economy, until further progress is made.

Table 2
Debt/G.N.P. projections for 1999

P.S.B.R./G.N.P	Debt/G.N.P.
0	0.74
0.03	1.06
0.06	1.3
0.09	1.54
0.12	1.87

Assumptions: (i) 3% inflation
(ii) 2% growth
(iii) No real change in taxation or government spending

Bank of England guidelines consider that lenders should provision for default in relation to debtor nations in which the foreign servicing costs exceed 3 months' export earnings, or in which the debt/GNP ratio exceeds 0.8 (2). Given Ireland's inflated export figures, the Irish debt may well in fact satisfy the first of these conditions; and it certainly satisfies the second one. The 1.33 debt/GNP ratio is unparalleled in the developed world where ratios of 0.3 or 0.4 are nearer the norm. And yet Mr Reynolds saw fit to divest the Exchequer of £150m, and persisted in his ideologically motivated refusal to sell even a minority stake in Irish Life, which would have raised £200m. Indeed not only is privitisation of Irish Life a budgetary necessity; but it is also necessary for the international growth of the company itself, because of the restrictions on state-owned companies, notably in the USA. Had he, in these or other ways, had the vision to see beyond stabilising the debt the PSBR could now be down to 5% of GNP. The failure to do so could be construed as a temporary measure, perhaps for electoral motives. But it would be very typical of this government, having resolved the immediate problem of an exploding debt to revert to their pathological short sightedness, and avoid any further action. This budget is at least consistent with such a scenario.

Moving on to the question of direct taxation, a major issue here is one of definition. The approach of the Commission on Taxation to extend the definition of income tax beyond the core PAYE income tax to cover PRSI, is widely accepted. The reasons for this extension were especially highlighted when, in the book of estimates, an increase in employers' PRSI contributions was calculated as a cut in the input from the Central fund into the social welfare budget, and hence as a cut in government spending. In other words an increase in taxation came through the contortions of the Irish budgeting system as a cut in government spending. It would follow from the inclusion of PRSI as an income tax; that Youth Employment and Health levies are too.

But I go further than this in extending the definition of income taxation. Although tax and social welfare systems are politically and administratively

independent, they are economically integrated in the distortions they create. A nominal cut in taxation financed by means testing benefits in such a way that no-one's net income is changed cannot reasonably be construed as representing a change in any economic variable. So I define income taxation as the net sum of all income related transfers from individuals to Government; nominal taxes less social welfare spending. Analytically if net income is plotted against gross income, this is the difference between the 45° line and the net income function. This difference may be plotted against gross income, and average and marginal effective tax rates may be hence derived. Table 3 shows such rates calculated for the UK in 1981 by Brown and Jackson.(3)

Table 3
U.K. marginal effective tax rates, 1981

Income/week(£)	Tax rates(%)
45	93
75	117
90	60
100	51
120	41

Assumption: Married, two children

It is at this point that the importance of looking at welfare and taxation together is clear; because the rapid withdrawal of benefits ensures that the highest tax rates in any economy occur in the poverty trap. This not a pattern which many would seek to defend, but one which simply arises out of the confused and haphazard disjointed evolution of the taxation and social welfare systems.

It is, moreover, a system providing a massive distortion of factor markets. Its disincentive effects to work effort are likely, at a theoretical level to be strongest in the poverty trap, most obviously, because it is here that the highest marginal rates occur; but also, and perhaps more significantly, because providing benefits and then withdrawing them has an unambiguous net disincentive effect, as both income and substitution effects tend to lessen work effort. Net taxation, on the other hand, has an income effect and substitution effect operating in different directions, so the overall effect is unclear. This theoretical argument has strong empirical backing; there is no solid evidence of a disincentive effect is caused by nominal taxation; but there is a substantial body of evidence suggesting that the rapid withdrawal of benefits does have such an effect; notably in Ireland, the study by Walsh in 1977. (4).

At first sight, the budget made some attempt to remove some anomalies and lower marginal rates. This is an illusion created for electoral motives. The budget actually worsened the situation in three key ways, neutralizing any positive changes .

Firstly, it introduced and increased tax exemptions. These exemptions seem to be a feature peculiar to the Irish tax system. The problem with them is that at the point at which the exemption is lost, in the absence of a compensating provision, the marginal rate is infinite. Such a compensating provisions exists, in the form of tapering relief; but this still leads to a 60% marginal PAYE rate over

a wide band of income.

Secondly, it proposed means-testing child benefit, This is, and must be seen as, economically equivalent to an extra income tax positively related to family size. I imagine that many supporters of this feature of the budget would oppose such an income tax, in which case they are guilty of the muddled thinking which has caused the Irish public financial system to degenerate into the state in which it lies.

Thirdly, failure to index tax free allowances effectively increased the marginal tax rates for many of those whose incomes are around the threshold figure.

The proposal for a negative income tax system is often criticised on the grounds that it would entail excessive marginal rates to preserve the present social welfare system. But the negative income tax is already, from an economic point of view, the system in operation; the marginal rates it entails are in the poverty trap. The first step in direct taxation reform is to make this explicit in the political and administrative system; if necessary, with all its anomalies and all its absurdities. From there the momentum for rationalisation would be irresistable.

The administrative tax and welfare dichotomy may cloud the thinking of politicians, like in the doublespeak of Mrs. Thatcher where she justifies top rate tax cuts as "necessary for efficiency" while praising the most stringent means testing of benefits, effectively taxation at at least 100%, as "targeting"; but it ought not to cloud the thinking of economists, who should see this budget as failing to take any overall stance on the question of direct taxation.

The budget did make some attempt to broaden the tax base, but in the face of the pressures for this and circumstances favouring it; it was so grudging and half-hearted that it cannot even be considered as piecemeal reform in the direction of the proposals of the Commission on Taxation. Residential Property Tax is currently levied at 1.5%, a little below the standard rate rate income tax on imputed rental income. It exempts properties rented to another. In the rising property market its extension would have represented an excellent means of effectively taxing imputed rental income and moving towards fiscal neutrality, without causing taxpayers capital losses in absolute terms; yet it was left unchanged. With falling interest rates, reduction of mortgage interest relief could not have been better timed; yet only a 10% cut was introduced. Life assurance tax relief dates back to the introduction of income tax; but the transformation of life assurance into a savings industry leaves this relief as an anachronism. The budget barely scratched the surface on this issue.

The twin of the narrow base present in all ill-conceived tax systems is double taxation. While the Irish system is more to be faulted in relation to its narrow base than in relation to double taxation; there is one important case of the latter. Corporate profits not distributed in dividends may be liable for Corporation tax; while the rise in share prices these profits cause may be liable to Capital Gains Tax. I say *may* advisedly, because both Corporation and Capital Gains taxes are easy to avoid and evade in this sense the element of double taxation may approximately compensate for the inadequacies of both these taxes. But this approximate 'rough justice' is not the basis for a rational tax system. The taxation of all capital gains as income and the abolition of separate corporation taxation is a pre-requisite for a level playing field in terms of taxation policy. Yet the budget avoided all mention of capital and corporate taxes apart from some loose commitment to contemplate changes in the finance bill.

On indirect taxation, the key issue is E.C. harmonisation, due only three years from now. The arguments for having a separate indirect taxation system as well as a direct system imply the desirability of a narrow base (e.g. this is necessary for it to constitute a 'voluntary tax' or to compensate for externalities). It is hard to justify two complete broad-based tax systems; one on income, one on expenditure. (5). Yet this is precisely what the Commission on Taxation proposes, and, more significantly, it is what will inevitably happen as a result of the completion of the single European market. Given this inevitability of this, the budget should have entailed some adjustment to prepare for the revenue loss it will cause. But the Minister chose to go in exactly the opposite direction by raising excises. This is very ironic, because the extension of V.A.T. to gas in the 1988 budget was justified on the grounds that it prepared for V.A.T. harmonisation. The strategy of the government is, hence, to prepare for increasing indirect taxes by increasing them; but simultaneously to prepare for reducing other indirect taxes by increasing them too. The government will then cap all this by having the brazenness to demand compensation from the E.C. for the revenue loss harmonisation will entail.

Rationalisation of the tax system along the lines I have suggested does not entail any specific level of government intervention; it only seeks to make the chosen level of government intervention coherent, clear to all, and within the means of the economy. Contrary to some interpretations the Commission on Taxation did not recommend any particular level of taxation; it merely proposed rationalising the system and then simply estimated the tax rate necessary to meet certain objectives. Almost any level of intervention can be conducted within a coherent framework. It is in failing to offer such a framework that the budget was especially unsatisfactory.

The optimum level of intervention is an ideological question which I do not wish to discuss in this paper. But I would comment that not only does the openness of the Irish economy severely restrict the power of domestic government to affect output and employment levels; but it even limits the scope of domestic government to tackle distributional questions. Egalitarian policies, whatever about their ideological desirability, cannot be implemented given the integration of British and Irish labour markets, because of the flows of professional and entrepreneurial persons they would cause. It seems to me that the openness of the Irish economy greatly limits domestic government's role, even in allocative questions. In the context of this year's budget the ideal of the state recognising the limitations of its own potential remains as far away as ever.

It would be kind to say of this budget that it was one of piecemeal reform, albeit reform in so many directions that it made no substantial change in any one respect. My assessment of it is even more critical; the piecemeal reform was in no case sufficient to show any commitment to change or provide any radical momentum, and in most cases was actually neutralized by measure further compounding the inadequacies of the Irish public financial system. On a political level, it may well represent a shrewd electoral strategy but on an economic level it is yet another testimony to the underlying lack of commitment of Irish politicians to run sound fiscal policies and engage in real tax reform.

Footnotes

1. Irish Times,26.1.89.
2. Financial Times,22.7.87.

3. Brown and Jackson, "Public Sector Economics", p.116.
4. Walsh, "A Labour market survey", in "Irish economic policy", E.S.R.I.
5. O'Hagan, "Economy of Ireland", p.88.

Chapter 14 Income Taxation in Ireland

Philip Lane

The Commission on Taxation published five reports between 1982 and 1986. The Irish income tax system had developed in a piecemeal, ad hoc manner and the Commission's review of its operation helps us to assess the tax system on the principles of simplicity, equity and efficiency and to identify policy changes which would lay the foundations for a more coherent system. The 1989 Budget, then, is to be judged according to the recommendations set out in the Commission's report.

Income taxation is a highly controversial issue in Ireland. Despite its claim to be based on 'ability to pay', and to be redistributory through progressive marginal rates of tax, the system is perceived to be highly unfair and inefficient. Income taxation is used both as a source of revenue for government expenditure plans and to further social policy objectives through the allocation, distribution and stabilisation effects of taxation.

A number of principles underlie the Commission's recommendations. Firstly, there should be a comprehensive definition of income to include currently excluded sources such as welfare benefits, capital gains and gambling winnings. This is a widely-held objective, being seen as simple and equitable because it does not discriminate between income sources. Admittedly, administration problems arise such as the annual valuation of capital assets to assess accruing capital gains and the possibility of large cash bills to holders of illiquid assets such as housing. It is undeniable, however, that the existence of different tax schedules for the P.A.Y.E. and self-employed and the many reliefs, exemptions and exclusions in the existing tax code (left unchanged in the budget) fall a long way short of a comprehensive definition of income.

Equal taxation of different income sources is a related issue. At present, it is possible to avoid tax by converting investment income into capital gains (via institutionalized savings forms, such as pension funds), or by seeking remuneration in the form of fringe benefits or stock options. This is because capital gains are excluded from the income tax code (unlike in the United States) and are taxed more lightly. Similarly, expenditure on 'relieved' items such as mortgage interest, life assurance and V.H.I. premiums, is allowable against tax. Such unequal treatment, also illustrated by more generous business expenses treatment for the self-employed, is inequitable in a horizontal sense, as people with similar incomes end up paying different amounts of tax, and in a vertical sense, as people on higher marginal rates are most likely to be able to minimize taxable income by expenditure on relieved goods. A tax net with such 'holes' in it is also inefficient as people are encouraged to allocate resources to tax-allowable goods. The savings market is particularly affected, with an incentive for investors to favour options which offer low dividends but high capital gains (such as pension funds). Kay and King call these "civil servants" assets rather than entrepreneurs' assets, and so the dynamism necessary in a thriving capitalist economy is discouraged by the income tax system. The reduction in tax allowances, from 50% to 40% of a life

assurance premium's value, and in the amount of mortgage interest relief introduced in the 1989 budget, was intended more out of a desperation for increasing revenue than an acknowledgement of the demerits of a highly selective tax system.

Part of the explanation for the complex system of allowance, exemptions, reliefs and exclusions is that the State views the tax code as an instrument of social policy. It seeks to positively discriminate in favour of targeted groups in its tax treatment. Thus, unmarried mothers, homeowners, social welfare recipients, company car drivers etc. all receive special treatment. Two flaws exist with this approach. Firstly, such a complex system requires an expensive administration machine to operate it. Secondly, only those with sufficient income to be liable for tax can benefit from the system, and this inequity is exacerbated by the fact the most reliefs are valued at the marginal tax rate (favouring high income earners) rather than being refundable tax credits which are of equal value to all. The Commission favours direct transfer payments to "targeted" groups rather than use of the tax code, as only those in need would receive such benefits and the neutrality of the tax code would be ensured. A neoclassical analysis of the tax system would object strongly to its selective nature as economic choices are distorted and, if individuals are assumed to be the best judges of their own welfare, this inevitably reduces economic welfare.

The present system's arbitrary nature is seen in other ways also. P.R.S.I. has no actuarial basis with no relationship between premiums and entitlements. As such, it should be regarded as a tax on income rather than as a 'social insurance contribution'. Some taxes - the health levy and the youth levy, for example - are earmarked for specific purposes which also offends simplicity, with no reason to believe that taxpayers are more ready to contribute if taxes are tied to specific uses. Different schedules for P.A.Y.E. and the self-employed similarly introduces complications, as well as giving credence to the popular belief that the non-P.A.Y.E. sector is lightly taxed. The 1989 Budget failed to remove these anomalies.

The combined effect of the above factors is to create a very narrow income tax base with many incentives to reduce one's tax liability by using the reliefs and exemptions mentioned above. Selectivity also creates a complex system and distorts economic choices. The impact of the Commission's recommendations to simplify the system and to widen the tax base would be to remove these problems. In particular, a wider tax base would enable marginal rates of tax to fall while still attaining the same level of revenue. High marginal rates, then, are a symptom, rather than the cause, of the weaknesses in the present system.

The 1989 Budget saw the lowest rate fall from 35% to 32%, the middle rate to remain at 48% and the top rate to fall from 58% to 56%. The exemption level of income, below which no tax is paid, was also raised. High marginal tax rates are seen to have a serious impact on work patterns and behaviour. While substitution and income effects appear to cancel out for primary earners, high marginal rates do encourage tax avoidance measures such as seeking remuneration in stock options rather than cash. Also, a high marginal tax rate creates a preference for leisure rather than work, a preference which is very strong for secondary earners such as married women or the retired who are not so committed to fixed career paths. Emigration by the young and the innovative is also encouraged. However, perhaps the two most serious consequences of high marginal rates are their consequences for the poverty trap and the black economy. Marginal rates are commonly believed to rise uniformly with income levels but in fact follow a U-

shaped trend. At very low levels of income, the benefit of earning a wage is offset by losing welfare entitlements so that the effective marginal rate of tax may exceed 100% - a very strong disincentive for the unemployed to accept employment. This illustrates the need to regard the taxation and social welfare systems in unison. The 1989 Budget did seek to neutralize the poverty trap by reducing the bottom rate to 32% and by raising the exemption level. However, social welfare benefits were also increased, so the net effect was merely to shift the area of the poverty trap up the income scale rather than to remove it. For disincentives to be minimized, welfare benefits should be taxed so that the low income person faces a gradual rise in his/her marginal tax rate rather than abrupt cut-off points as illustrated above. The black economy is also encouraged, as those in service industries prefer to do 'nixers' rather than see 56% of their income disappear in tax (1).

It is clear, therefore, that substantial tax reform is necessary. This does not mean a reduction in revenue levels, which is undesirable given the current fiscal situation if lower marginal rates are achieved through a widening of the tax base. The major flaw in the 1989 Budget, then, was that this relationship between the width of the tax base and marginal rates of tax was barely recognized. Scarcely any move was made to end the various allowances, reliefs, exemptions and exclusions which underpin the present narrow base. The explanation for this is largely political - it was said once that "hell hath no fury like the middle-class in danger of losing their subsidies" (2). Thus, while everyone is in favour of tax reform, few are willing to give up their own particular tax benefits. The Commission's own recommendation is curiously flawed. While advocating a single rate of income tax levied on a very wide base, it recommends that any desired progressivity should be achieved by a direct expenditure tax on high income earners. It seems unnecessary and inefficient to have such a dual system of direct taxation, combining an income base which depends on receipts, and an expenditure base which depends on payment.

Its final conclusion notwithstanding, the Commission's report must be regarded as the framework for reform of the income tax system. The 1989 Budget has been described as a "hiatus" budget and the above comments show that little has been done to implement the Commission's recommendations.

Footnotes

1. The black economy may also be tackled by stricter policing which is promised under the Amnesty. This tackles, however, the consequences and not the cause of the black economy's existence.
2. The child benefit controversy illustrates the skill of the middle classes to protect even indefensible benefits.

SECTION 4
PUBLIC FINANCES

Chapter 13 The History of the Theory of Public Finance

Margaret Doyle

The earliest democratic thinkers held that that government was best that governed least, and present-day Marxists foretell the eventual "withering away of the state". Both hypotheses have been proven false. The certainty of "death and taxes" appears to hold true. There has always, even in the most primitive society, been some ruling group or organizing body. The role and limitations of such a body was an integral part of the economic thinking of the day. This may appear to be an odd statement, since 'economics' as a body of knowledge is scarcely two hundred years old, and the first specific work on public finance appeared less than a century and a half ago. However, every society has had to feed and clothe itself and so each one has attempted to find a practical solution to the fundamental problem of scarcity. Within this solution is a role, however small, for a ruling group. This role depends upon cultural norms, the degree of organization and communication, and the degree of advanced, systematic thought; I shall term this role 'public finance theory'. This is a very narrow term as financial matters are only one facet of governmental activity.

I shall treat of the dominant works on social organization and shall point out what part 'government' played in those works.

Since our religion and the moral law sprung from the Hebraic heritage, what the Bible has to say on economic organization has influenced ethical codes to this day. Biblical social legislation enshrined the concepts of the Sabbath (the day of rest), the Sabbatical year in which land was to be left fallow for the poor, the fair treatment of slaves (who were to be set free in their seventh year), the banning of usury to fellow Israelites, the exhortation of compassion for the poor, and the elevation of industrious labour to high virtue. These have become traditions or have been legislated for or have been extolled by governments at particular times (e.g. controversy over Sunday trading).

Greek philosophy saw two primary roles for public finance. The first was to provide for public consumption; every town had its own theatre, great works of art were scattered throughout the countryside, and annual festivals were held. The second role for government was to raise and train soldiers and provide finance for war, which would bring both slaves and glory upon the city-state. It is notable that there is no word for 'unemployment' in Greek; economic ruin meant slavery. The aims of government, therefore, could be identified as only one of the recognized three modern aims of full employment, equity and growth; that of growth (although such growth was more often achieved through war than industry).

Roman civilization spread the idea of a systematic body of law; this law would guarantee property and uphold freedom of contract. Following from Stoic philosophy it would define 'reasonableness' - reasonable price, reasonable value, reasonable man. The development of an advanced system of roads and the tight control of its colonies led to one of the first effective systems of taxation.

After the decline of the Roman Empire, the feudalist system suffered from weakness due to poor communications and general insecurity. All land was

proportion than quantity". (2). He noted, however, that other objectives for tax policy could interfere with the proportionality of tax. Petty approved taxation "according to what men spend" (3) in order to encourage saving and investment. The responsibility of government was, he held, to take care of those who would otherwise live by charity or crime by endowment with "a regular and competent allowance by public tax". (4). This approaches the modern idea of the negative income tax. His belief that *"res nolunt male administrari"* (the world refuses to be governed badly) foreshadowed the rise of liberal thought which held that the power of government was limited not so much by the rights of citizens as by laws of nature which impose restraints on the effectiveness of the exercise of statecraft.

Charles Davenant (1656-1714) was an early advocate of *laissez-faire* when he held that "trade is in its nature free, finds its own channel and best directs its own course, and all laws to give it rules and directions, and to limit and circumscribe it, may serve the particular ends of private man, but are seldom advantageous to the public". (5).

The eighteenth century saw the rise of two schools; the Physiocrats in France and the classical school in Scotland and England.

The Physiocrats criticized vehemently the fundamental Mercantilist doctrines; foreign trade is not a primary aim of a nation but is a "means of last resort" which carries with it the danger of ill-feeling and war. Gold and silver are not wealth but "effects of real production which has changed its form". Physiocratic thought was based upon the "rule of nature". Alongside the natural order was the positive order which reflects the inadequacy of human legislation. They postulated "*laissez-faire, laisser-passer*" but felt that only in the natural order could harmonious individualism reach full flowering; in the real world the free play of individual forces may be frustrated. Quesnay, the father of the school, derided the idea of everybody having a right to everything and the concept of private property was central to them. Thus the Physiocratic role for government was to guarantee private property and the levy of a single tax, that on the "*produit net*", i.e. the farmers' surplus, which they held supported the two other classes (landlords and artisans) and was the only surplus in society. Apart from that free trade was to be allowed, "*on laisse-faire la nature*".

In 1776 Adam Smith published his five volume work on "The Nature and Causes of the Wealth of Nations". He dealt with labour, capital, economic development, the history of economics, and public finance.

His central claim was that self-interest can lead to the common good. In pursuit of self-interest man is not necessarily perfectly rational, but is rather over-optimistic. Consumption is the "sole end and purpose of production", but it is a theory of production rather than of consumption which Smith develops.

He advocated laissez-faire but recognized a role for government in protection, justice, and public works. His was the first formal recognition of a good which provides value to society as a whole far exceeding its value to one individual, i.e. a public good. Government was to regulate paper money banking, patents and copyrights, enact usury laws, provide public education and public enterprise in transport, and could grant a temporary monopoly. The central criterion for a public project was, in the final analysis, its ability to yield profit.

His "Canons of Taxation" held that the four criteria of a good tax were equality (based upon ability to pay), certainty, convenience, and economy. He recognized that these goals may clash with each other or may prove incompatible with other goals of policy.

Malthus, a radical economist, devoted his life work to a transformation of Smith. Unlike his peers he questioned the adequacy of total output and advocated self-restraint as the solution to economic scarcity. He foreshadowed Keynes in his belief that a tax-financed public work would be more effective than tax reductions if it created greater and more certain demand for labour and commodities.

David Ricardo also studied Smith's works and his work was more widely accepted that that of Malthus. As an exponent of laissez-faire he conceded only a few legitimate exercises of statecraft - mainly taxation in moderation. His theory of taxation was integrated with his theory of distribution by his work on the shifting and incidence of taxation. He held that "taxes which are levied on a country for the purpose of supporting war, or for the ordinary expenses of the state, and which are chiefly devoted to the support of unproductive labourers, are taken from the productive industry of the country, and every saving which can be made from such expenses will be generally added to the income, if not the capital of the contributors". (6).

In 1845 McCulloch, a disciple of Ricardo, produced the first separate treatment of public finance.

Karl Marx held that the state, instrument of coercion of the ruling class, would lose its function and disappear. However, in Marxist states, the government has tended to yield brutal and dictatorial power; whereas in Western democracies the extension of the suffrage and the development of labour laws has meant that Marx's description of the state as instrument of the bourgeoisie no longer applies.

The 'Kathedersozialisten' (or socialists of the professorial chair), were part of the Schmoller school of socialism. They espoused "state socialism" entailing public ownership, redistributive tax policies and the taxation of unearned income. Adolph Wagner of Berlin, postulated a "law of increasing fiscal requirements". Their programme of social justice, concessions to labour and levelling of wealth was attacked both by Rosa Luxembourg on the left, and by social Darwinists on the right.

The idea of a "public good" was further developed because of the work of Marshall and Pigou, both leading members of the Cambridge school. Marshall's "externalities" and Pigou's recognition that social and private returns are not necessarily equalized led to the concept that a public good was one for which the benefits were diffused, the enjoyment of which was not confined and the price of which was often not feasible for an individual to pay. The marginal revolution provided a link between the consumer and public good provision. A demand curve was postulated for which prices were vertically summed. Cost-benefit analysis was developed and was drawn into the wider perspective of public policies - the quality of the environment, health, education, renewal of cities, unemployment, price stability and economic growth.

Knut Wicksell (1851-1926) criticized the classical view that competitive prices ensure a social optimum. Rather he held that total utility may be increased by an exchange between rich and poor. This exchange may come about by setting prices at other than competitive levels, and as an example he adduces minimum wage or maximum hours legislation, which would be a function for government. Wicksell advocated government intervention and proposed marginal rather than full cost pricing for public utilities and sowed the seeds of the idea of nationalization. He introduced marginal utility into public finance theory and he went beyond the conventional treatment of the shifting and incidence of taxation by considering the question of income distribution and justice in taxation.

The modern theory of public finance really blossomed after the Second World War. It owes much to the work of J.M. Keynes who questioned the adequacy of demand in the classical system and saw a role for government in maintaining aggregate demand at its full employment level. The development of Keynesian economics coincided with an expansion of government intervention in the economy and practical Keynesianism was summarized in the "three ways to full employment". These were an increase in government spending and an associated deficit, a tax reduction with an even bigger deficit or a balanced budget increase in government spending. Keynesians also argued that contradictory policies of tax increases or decreases in government expenditure would restrain inflation.

The subject of public finance is now so greatly expanded as to hold its own place in economic theory. Within the framework of general economic analysis the competitive economy is being examined, a questioning of the nature of government is taking place, and an analysis of the mechanism of public choice is being carried out. Within these broad areas there are thousands of smaller theoretical and empirical studies going on; general equilibrium incidence of tax, econometric study of the response to tax and social security benefits, optimum design of fiscal policy, debt policy and capital accumulation, provision of public goods, stabilization, growth and curtailment of government, and the real effects of inflation. It is too early yet to decide which of the prevailing theories will last and which will be consigned to a historical footnote.

Public finance will always provide ample food for thought on the central problem of scarcity and the associated issues of growth and distribution.

Footnotes

1. Spiegel, p.121.
2. Quoted in Spiegel, p.132.
3. Spiegel, p.133
4. Spiegel, p.134.
5. Spiegel, p.139.
6. Spiegel, p.334.

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Chapter 12 Ireland's Industrial Experience & Policy Since E.C. Entry & the Implications of 1992

Finbar McDonnell

This paper examines Ireland's industrial experience since 1973. Entry to the Common market in that year was the final stage in opening the Irish Economy to outside trade and competition. At the time, there was much debate as to how Irish industry would fare, and of course the optimists won the day, with the bigger market seen as a great opportunity for Irish companies. I will examine the extent to which this opportunity has been availed of, before briefly examining the implications of the latest "great opportunity "for Irish industry - the completion of the European internal market in 1992 .

The last sixteen years have seen great upheaval in Irish industry. Table 1 shows manufacturing employment by sector and two things are obvious from this table.

Table 1
Manufacturing employment by sector, selected years

Sector	1973	1980	1986
Food	48,116	51,843	40,400
Drink & Tobacco	11,021	11,276	9,039
Textiles	20,530	17,797	10,874
Clothing, Footwear & Leather Goods	28,122	24,116	16,781
Paper & Printing	15,890	16,874	13,991
Non-Metallic Minerals	15,491	18,956	13,318
Timber & Furniture	10,087	11,465	9,998
Chemicals	11,068	14,620	13,112
Metal & Engineering	46,750	68,314	62,148
Miscellaneous	8,347	11,402	10,329
	215,422	246,665	199,990

(Source: I.D.A. Employment Files)

Firstly, the period since 1973 can be subdivided into pre-1980 and post-1980. The first period, which saw manufacturing employment increase substantially, coincided with a boom in the domestic economy and very high state aid to industry. The second period, which brought a dramatic decrease in employment coincided with a domestic recession and some tightening of the industrial grants policy. I will look at each period in turn.

Secondly, there has been a significant sectoral shift within industry. The Metal & Engineering sector has replaced the Food sector as the biggest employer. Employment in the Textiles and Clothing & Footwear sectors has fallen sharply. Only in the Chemicals and Metal & Engineering sectors has absolute employment increased. In general, the 'traditional' sectors have experienced an absolute and (except for Timber) relative decline in employment. This has coincided with an

increase in electronics, instrument engineering, chemicals, etc. - the high-technology sectors.

However, the sectoral changes are not uniform over the entire period. Between 1873 and 1980, an absolute decline in employment was recorded in only two sectors - Textiles and Clothing & Footwear. Both of these were what was described as "low-wage industries" by the Telesis Report. (1). What occurred here was part of a long-term inter-industry adjustment with competitive advantage in large parts of these industries shifting to developing countries. For textiles "in standard long-runs, such as cotton-fabrics for shirts, competition from low-wage cotton-growing countries such as Pakistan, India or Egypt was in many products inevitable and insurmountable". (2). For clothing and footwear "newly industrialising countries invested in larger-scale, newer technology production facilities, and took advantage of lower wage costs: Korea and Hong Kong in men's suits, skirts or knitting; Taiwan and Brazil in leather shoes and bags; Argentina in leather; Pakistan and India in cotton cloth, etc." (14). What is remarkable about these industries' performance is that, faced with such competition from developing countries they showed great resilience. Table 2 shows the intra-industry trade ratios for certain subsectors of these industries.

Table 2
Intra-industry trade ratios for selected sectors

Sector	1971	1977
Textiles, Fibres & Waste	0.520	0.555
Leather Manufacturers	0.725	0.628
Textile Yarn, Fibres, etc.	0.622	0.938
Clothing, Footwear, Travel Goods	0.821	0.867

(Source: "On the Economics of Intra-Industry Trade", Dermot McAleese (1978), p.144). (3).

Certain textile and clothing sectors were suffering, but others were finding niches in the E.C. market. In the knitting industry for example, goods requiring very long production runs were not viable and production shifted to outerwear (medium-runs) and fashion or handmade goods (short-runs). Table 3 reinforces this, showing that the net change in employment tells only part of the story.

Table 3
Components of manufacturing employment change (1973 - 1980)

Sector	Jobs Created	Jobs Lost
Textiles	10,210	12,943
Clothing & Footwear	14,657	18,663

(Source: I.D.A. Employment Files)

By 1980 much of the inevitable adjustment to the developing countries' competition had been made. Telesis estimated that job losses in these sectors

would be lower in the 1980's. These industries were ready for a "refocusing strategy" and Telesis went so far as to identify areas where "the source of competition is in other developed countries, with similar or higher levels of labour costs." (4).

In contrast to textiles and clothing, Ireland's other 'traditional' industries did well during the first seven years in the European Community. The food sector experienced increased employment with a gradual move from exporting primary products to exporting processed products. Exports however continued to be concentrated in the United Kingdom, as is seen in Table 4.

Table 4
Share of exports to Great Britain and Northern Ireland (%)

Sector	1975	1979
Sugar Confectionery	48	46
Bread, Biscuits & Cakes	85	86
Cocoa & Chocolate Confectionery	89	89

(Source: N.E.S.C. No. 6 (Telesis Report) Exhibit 3.25)

This was the story for the other traditional industries also, like Paper & Printing, Drink & Tobacco, Non-Metallic Minerals, and Timber & Furniture. Intra-industry trade grew, "reflecting a genuine adjustment of these sectors to specific product lines and activities" (5) as is seen in table 5.

Table 5
Components of manufacturing employment change (1973 - 1981)

Sector	Jobs Created	Jobs Lost
Food	23,844	20,117
Drink & Tobacco	3,042	2,787
Timber & Furniture	8,065	6,687
Paper & Printing	6,660	5,676
Non-Metallic Minerals	7,836	4,369

(Source: I.D.A. Employment Files)

Trade growth was overwhelmingly with the United Kingdom however. Telesis reported that "Ireland has only entered the E.C. recently and is closer to the U.K. than to the six original members ... This means that Irish companies have difficulty exporting outside the former British zone." (6). The challenge for these companies in the 1980's was to break into the large markets in mainland Europe.

Finally, technologically-based industries grew rapidly in the years immediately after Ireland's accession into the E.C. It is worth noting that, as with Clothing & Textiles, substantial segments of the traditional Engineering sector also lost out to developing countries. However, unlike the traditional sectors, the Metals & Engineering and Chemical industries completely changed and adapted to the new E.C. environment. This, as will be seen later, was a conscious development

strategy of the I.D.A. who invested heavily in high-tech areas. Between 1973 and 1980, for indigenous metals and engineering firms, most jobs "came from general metal fabrication operations, metal bending and pressing, and welding and repair shops which typically serve a very local market, and from structural steel, where the economics also favours local suppliers." (7). Of the hundreds of such firms established between 1965 and 1980, only fourteen employed more than one hundred people by 1980, and only two exported any significant amount. While not impossible, Telesis concluded that it would be very difficult for these firms to break into mainland European markets.

The big job creators in the technology exporting area were the new foreign-owned companies. Since the early 1960's, it was a government policy to attract direct foreign investment by foreign firms in Ireland, and a range of grants and incentives was established to this end. Furthermore, companies producing high-technology products were considered the most attractive. As early as 1970, the I.D.A. "hoped to attract to Ireland R & D investment by leading international companies." (8). In the period 1978-80, over two-thirds of jobs approved by the I.D.A. were in the high-technology industries. Table 6 shows the huge amount of jobs created in these industries between 1973 and 1981. The number of jobs lost is also interesting. These are not simply the result of intra-industry structural change but represent foreign firms who set up in Ireland and left again during the seven year period.

Table 6

Components of manufacturing employment change (1973 - 1980)

Sector	Jobs Created	Jobs Lost
Chemical	8,314	4,562
Metals & Engineering	48,847	27,283

(Source: I.D.A Employment Files)

By December 1980, there were 10,300 jobs in electronics and electrical firms in Ireland which had been "the main focal point of activity" for the I.D.A. (9). Mainly these were manufacturing satellite plants for extra-E.C. (mainly U.S.) firms looking for a base within the European Community. There were almost 19,000 jobs in Mechanical Engineering by 1980; "mainly in sub-assembly and assembly shops commonly found in newly industrialising countries .... skilled employment represented only 1%-2% of the workforce." (10). In the Chemicals industry, there were 8,600 jobs in foreign firms by December 1980. Again, there were problems - "only two of the thirty-two companies surveyed carry on R & D in Ireland and none managed the distribution system from Ireland. Thus, the key activities which determine competitive success in this industry were not carried on in Ireland." (11). Telesis recommended changing the I.D.A. grants strategy in the 1980's, so that grants would be given only to firms creating skilled employment, in 'stand-alone' firms.

The third type of technological firms creating jobs were the sub-supply firms - those supplying the foreign firms in Ireland. Some Irish companies did well here in the 1973-80 period, but they tended to be in low-skilled areas like packaging rather than high-skilled areas like computer components.

By 1980, after seven years in the E.C. market, much adjustment had taken place. Some Irish industries had lost out to N.I.C.'s, but this inevitable (and nothing to do with the E.C.) process was largely complete. Traditional industries had specialized more; adjusting to specific product lines and activities; their trade had become more differentiated. However, this process had taken place almost exclusively with the U.K. - traditional industries had not taken advantage of the French, German, Italian and other mainland European markets. Technology-based industries were growing in Ireland, characterized by foreign ownership and substantial state support. Irish firms were finding it difficult to break into this area; either to export their own products or as a supplier to the foreign firms in Ireland.

There was much debate at the time as to what would be the most suitable course of development for Irish industry, so that the limited state funds could be spent properly. A large investment would be necessary if indigenous industries were to overcome their structural problems and a similar investment in grants and other incentives would be needed if foreign firms were to be attracted. The Telesis Report, commissioned by the N.E.S.C. to examine industrial policy, came out in favour of indigenous industries. In Kennedy's summary of the report; "The approach should be more selective, giving priority to building a limited number of large Irish companies to serve markets not only here and in Britain but in the whole Common Market and beyond. The key to the success of these companies would lie in high-quality marketing, innovation and the development of native skills .... The Report had no objection to foreign enterprise but stressed most of all the need to foster native industry, since in its view 'no country has succeeded in developing a strong indigenous sector'". (12). Of course, there were other views, and while the language of industrial policy changes somewhat in the White Paper (1984) (13), the industrial policy of the 1980's itself did not change substantially from the 1970's, with foreign investment still seen as the engine of Irish economic growth.

This has meant the continued decline of the Textile and Clothing -Footwear sectors, as already seen in Table 1, although the problem now was not developing countries. "Although some inter-industry adjustment ... was inevitable", says the N.E.S.C., "it is in general not the case that Irish production of these goods has been replaced by the output of industrial policy." (14). The N.E.S.C. understand what "this may well reflect an early belief that long-run decline was inevitable" but points out that "in many respects, the experience since 1965 has confounded this belief - it has taken a remarkably long time for these sectors to go." The Council goes even further - "it is clearly tempting to speculate on whether intervention aimed specifically towards intra-industry adjustment could have reversed the decline." Jim O'Leary did some of this speculating; "the signs are clearly that market segments with a sustainable competitive advantage exist in the clothing industry even for countries with relatively high labour costs. What is required is the installation of state-of-the-art production processes, great attention to market development, and ongoing product innovation." (15).

The more successful indigenous industries of the 1970's joined Textiles and Clothing in decline. Paper & Printing, Non-Metallic Minerals, and Drink & Tobacco all experienced output and employment decline. By 1989, N.E.S.C. was saying the same things that had been said nine years earlier - "If these firms use their fundamental strength to develop products for export then the element of import penetration could be seen as a natural outcome of taste and product

diversity typically found in economic integration." (16). In other words, the problem (although now critical) is still how to break into the mainland European markets. Why? - "These firms have not been subject to active industrial policy" says the N.E.S.C. Despite this neglect, there has been one bright spot - the Food industry has made progress in all European markets, and by 1988 three of the eight largest public companies were exporting food products - The Kerry Group, Avonmore Foods and Waterford Foods (17), not to mention the Goodman Group. This success has been possible due to special circumstance - because the comparative advantage in this sector is "largely based on access to suitable resources but increasingly it will depend on the application of scientific advances and product differentiation." (18). The decline of 'traditional' industries is shown in Table 7.

Table 7
Components of manufacturing employment change (1981 - 1986)

Sector	Jobs Created	Jobs Lost
Textiles	4,503	11,426
Food	18,769	30,213
Clothing, Footwear & Leather Goods	13,100	20,439
Paper & Printing	4,703	7,587
Timber & Furniture	8,262	9,729
Drink & Tobacco	1,559	3,796
Non-Metallic Minerals	4,944	10,584

(Source: I.D.A. Employment Files)

The growth areas in the 1980's have been the engineering and chemical industries. Their importance has increased steadily, even though the numbers employed have declined slightly (see Table 8). Since all industries have registered a drop in employment since 1980, the two industries of Table 8 accounted for 38% of manufacturing employment, as against 34% in 1980 and 27% in 1973. Again, the extremely high turnover of jobs in the Metals & Engineering sector is notable.

Table 8
1981 - 1986
Components of manufacturing employment change

Sector	Jobs Created	Jobs Lost
Chemicals	5,769	7,277
Metal & Engineering	47,876	54,056

(Source: I.D.A. Employment Files)

These high-tech industries have continued to be dominated by foreign-owned firms using Ireland as a satellite manufacturing plant. Table 9 shows some of the industries in more detail and the extent of foreign investment.

Table 9
Employment level in foreign firms in specific high-tech sectors

Sector	% of Employment in Foreign Firms
Data Processing	96.5
Pharmaceuticals	84.3
Instrument Engineering	94.1
Other Chemicals	78.5
Electrical Engineering	81.3
Rubber	94.7
Other Textiles	71.3

(Source: Anthony Foley, "The Role of the Foreign and Irish Sectors in Manufacturing", Seminar Series, Paper 1, December 1988, p.35)

The figures above confirm, says Foley, "the generally recognized, but inadequately discussed, high reliance on foreign companies for our involvement in sophisticated modern high-technology industries." (19). Of course, not all high-tech firms are foreign, just as all traditional firms are not Irish, but most are in each case. Irish companies have found it very difficult to break into the high-tech area, and by 1988, only three of the top forty Irish public companies were involved with high-tech products - Unidare (No. 17), Memory Computer (No. 35), and Printech (No. 37). (20). The reason for this is that high-technology industries require production on a very large scale if costs are to be competitive. The huge cost involved (never mind Irish industries' structural weaknesses) mean it is enormously difficult for an Irish company to break into the European market. For foreign firms, the situation is different - they can produce on a massive scale, and most site only a small part of their operations in Ireland. Most of them have already reached the METS and are selling onto the E.C. market, taking advantage of the fragmentation that Project 1992 is trying to do away with.

Although a National Linkage Programme has been started, three economists with the I.D.A. wrote in 1988 that "our experience in working with Irish companies ... has shown that basic structural weaknesses in areas such a management, production, technology, quality control, and scale have prevented Irish industries from capitalizing on the huge multinational market for sub-supply goods." O'Leary (1987) reported that "the extent of sub-supply linkages ... is very limited." Of course, large amounts of effort and resources are still being applied in this area, but the experience so far is not encouraging.

What then will Project 1992 mean for Irish industry? The effects will be greatest on the high-technology sectors of the economy built up over the last two decades. Ireland chose to focus on the high-tech Engineering & Chemical sectors as the means to achieve export-led growth. This can perhaps be seen as identifying a gap in the European market and trying to fill that gap. Europe was not able to compete against the U.S. or Japan in high-tech products and Ireland provided a base for U.S. and Japanese companies to operate in Europe. The purpose of 1992 however is to ensure that European firms win back this market. Over the next decade, unit costs are expected to fall significantly in European high-tech firms and competition will increase proportionately for the U.S. and Japanese firms. If the forecasts of the European Commission, and indeed most economists, are correct, non-E.C.

high-tech firms are in for a tough time in the post-1992 European market. This has big implications for Ireland. If the European firms succeed (and the future of the E.C economy to a large extent depends on this) Ireland will not be able to rely on high-tech industries for growth in the 1990's. If European firms start to regain some of the market share now held by non-E.C. firms, Ireland's high-technology sector could actually suffer job losses. Of course, this may not happen in the short-run - in the immediate period following 1992, U.S. and Japanese firms could do well. In the long-run, however, there is clearly a conflict between a rapidly expanding European high-tech sector supplying the European market and a growing U.S. and Japanese high-tech sector based in Ireland. One might reject the confident predictions of the European Commission and say that the non-E.C. firms have an unassailable advantage in the market place. If European firms do not respond to Project 1992 however, rather than Ireland's high-tech sector continuing to boom, it is likely that the E.C. would force large changes in our grants and incentives packages. Project 1992 is simply too important for Europe to be allowed to fail.

Ireland's problems in high-technology industries in a post-1992 Europe are exacerbated by the enlargement of the E.C. in recent years. Spain, Portugal and Greece are all competing directly with Ireland for mobile international investment, as is Scotland. All are underdeveloped regions which are eligible for substantial Structural and Regional funds from the E.C. and all have the advantage over Ireland of being connected by land to the main European markets. It seems likely that Ireland's attractiveness as a base for extra-E.C. companies expanding into Europe will decrease in the 1990's.

In the non-high-tech areas, Project 1992 will also have adverse effects for Irish industry. With only small economies to be achieved, the size of firms in the Community will not change much. The abolition of customs barriers and the harmonization of standards will have some effect. What could be very important is the breaking down of psychological barriers with all the publicity being given to Project 1992. Firms all over Europe are realizing how big the Community market is and the opportunities that exist for them. Competition should increase, which will give an increased spur to intra-industry trade in the European Community. Unfortunately, as mentioned earlier, Ireland has not concentrated on developing the traditional industries where intra-industry trade is likely to grow, and Ireland has many structural weaknesses in this area. In other words while Project 1992 should increase European intra-industry trade in 'traditional' industries, it will simply increase import penetration in Ireland with no corresponding increase in exports.

Given this rather gloomy scenario, it is perhaps surprising that 1992 is being portrayed so positively by government and others. As in 1973, the emphasis is on the opportunity rather than on how Irish companies might best take advantage of the opportunity. This shortsightedness is reflected in the Irish 1992 debate. The topic most often discussed is the process of creating a single European market, i.e. the harmonization of technical regulations, the abolition of frontier formalities, etc. These measures will provide Ireland with new opportunities and should of course be portrayed positively. However, what should be the focus for far more debate is the longer term creation of a more competitive economic environment in the E.C., which I have identified as a threat to Irish industry. A shift in the debate might get firms to prepare for the competition, and think about expanding themselves into Europe. The opportunity missed in 1973 could be grasped in 1992.

Footnotes

1. The Telesis Consultancy Group, "A Review of Industrial Policy", N.E.S.C. No. 64, February 1982, p.92.
2. Ibid, p.92.
3. Dermot McAleese, "Intra-Industry Trade, Level of Development and Market Size" in Herbert Giersch (ed) "On the Economics of Intra-Industry Trade", Symposium, Kiel University, 1978.
4. The Telesis Consultancy Group, op cit, p.95.
5. N.E.S.C., Forthcoming Publication, Chapter 3, p.8.
6. The Telesis Consultancy Group, op cit, p.100.
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15. Jim O'Leary, "The Performance of Manufacturing Industry: Past Trends and Lessons for the Future", p.12, paper delivered to the Industrial Studies Association, March 1987.
16. N.E.S.C., op cit, p.10.
17. The Irish Times, Thursday, December 29, 1988, p.18.
18. N.E.S.C., op cit, p.12.
19. Anthony Foley, "The Role of the Foreign and Irish Sectors in Manufacturing", Seminar Series, Paper No.1, December 1988, p.35.
20. The Irish Times, op cit.

Chapter 11 The Monetary Approach To The Balance of Payments

Alan Barrett

"Balance of payments analysis", as cited by Rhomberg and Heller of the I.M.F., "has been influenced directly by the changing character of international economic problems; in addition, however, it has also been affected by changing methodological fashions in the mainstream of economic thought" (1). In this paper, we shall examine the approach which has resulted from these changing methodological fashions, referred to in the literature as the monetary approach to the balance of payments and distinguished from other approaches through its concentration on the behavioural relationships directly relevant to the money account. In this examination we will look at the origins of the approach, an issue around which a certain amount of controversy exists. We will then go on to look at the modern revival of the approach following a suspension of use in the middle point of this century. The characteristics and predictions of the approach will then be considered and finally we will look at what relevance the approach has to an examination of policy in the economy of Ireland. It is hoped that through this paper ,the monetary approach to the balance of payments will be shown to be a most useful and enlightening analytical framework, to whose predictions particular attention should be paid.

To begin, let us consider the early origins of the monetary approach. As noted in the introduction, these early origins are surrounded in some controversy. Essentially the controversy is over whether David Hume or Richard Cantillon is the true fore-father of the approach. In The New Palgrave, only Hume is mentioned under this heading and, in their Economic and Social Review article of 1985, Kennelly and Finn say that the classical origins of international monetary theory are commonly attributed to Hume, again not mentioning Cantillon. Essentially what is being referred to is Hume's specie flow mechanism in which he linked an increase in the money supply to a balance of payments deficit. The transmission mechanism which he noted was as follows: an increase in the money supply raises spending which in turn raises domestic prices. This makes domestic goods less competitive and a balance of payments deficit ensues, leading to a fall in the domestic money supply. In this way, given a domestic supply constraint, an increased money supply cannot be held indefinitely in a country. The effect which Hume is talking about is a relative price effect. The contention of those who support the Cantillon claim to being the fore-father is that Cantillon wrote of both a relative price effect and a cash balance effect (2). He saw an increased money supply raising prices and also raising expenditure directly on imported goods and on goods that would otherwise be exported. In this way, the money supply increase is manifest in a balance of payments deficit quite directly and the money supply falls. It is this cash balance effect that is at the centre of the modern monetary approach, and as such the claims of the Cantillon camp seem valid. Frenkel and Johnson go half way in conceding this when they write that the "new approach, while Humean in spirit, places the emphasis not on relative price changes but on the direct influence of excess money demand, or money supply, on the balance between income and expenditure" (3). They fail, however, to

attribute this cash balance effect to Cantillon.

Given the richness of the analysis of both Hume and Cantillon, it is perhaps surprising that these forms of analysis, with their emphasis on the monetary aspects of the balance of payments, should have been suspended for twenty-five or so years in the middle of this century. This suspension is explained in The New Palgrave "by the events of the 1930's including the international monetary collapse of 1931 and the Keynesian revolution."

In the 1930's, the methodological fashions of the day led to "the tools of value theory - demand, supply and elasticities" - being applied to the problem of balance of payments deficits (4). Hence we find the elasticities approach (Robinson, 1937), which implied that "selective national traded goods prices could be permanently altered by devaluation" under certain elasticity conditions. This approach however, suffered very much from its partial equilibrium stance, ignoring the crucial effects on aggregate income and expenditure arising from devaluation.

This difficulty with the elasticities approach was supposedly answered through the use of a methodological framework more in keeping with Keynesian analysis, seen in the absorption approach of Alexander (5). This approach argued that questions, regarding the effects on the balance of payments of changes in economic variables, were best assessed by ascertaining the effects on output and absorption. However, this approach suffered from the difficulty that it was not suited for examining changes which only affected output and absorption indirectly: changes such as devaluation or inflation. Its second major flaw, and one shared with the elasticities approach, is that it only looked at the current account balance and not at the overall balance of payments.

With concern regarding unemployment giving way to concern over inflation, the Keynesian methodological approach came to be supplemented by the tools of monetary analysis, and hence we see a revival of interest in the monetary approach to the balance of payments. This revival of interest occurred at both an academic level and also at the level of central bankers and other national and international financial officials. The acceptance of the Keynesian analytical framework had left a gap in terms of problems arising in the areas of the balance of payments and monetary issues.

In academic circles, the first element of this modern revival is considered to be, albeit in an indirect sense, Meade's "The Balance of Payments". It was Mundell who then took Meade's analysis, extended it to include the capital account, and also incorporated two developments which robbed Meade's analysis of two assumed policy instruments. One such development was the growing reluctance of countries to use devaluation as a policy instrument, the other being the growing constraints on the use of trade barriers arising from G.A.T.T negotiations. While it was also Mundell who recognized that, in a model of capital mobility, the central bank controls not the money supply and employment but domestic credit and the balance of payments, it was Johnson who popularized the concept of the fundamentally monetary nature of the balance of payments (6).

Outside of this academic circle, the main developments in this area were made under Polak at the International Monetary Fund. Their approach to monetary management in the context of balance of payments disequilibra, evolved in the 1950's in work concerned with Latin American economies. The approach followed monetary approach reasoning, estimating prospective money demand changes and altering domestic credit expansion accordingly in an effort to keep the external account in balance (7).

Given the origins of the monetary approach to the balance of payments and its modern revival, let us now look at the characteristics of the monetary approach and then let us go on to look at its predictions.

The essence of the monetary approach is that it views changes in the international reserves of a country as a reflection of a stock disequilibrium in the domestic money market. The link between the international reserves and the money market is that the change in the international reserves must equal the difference between changes in the demand for money on the domestic money market and domestic credit expansion. In the monetary approach, a balance of payments deficit/surplus exists when there is a decrease/increase in the international reserves. As such, its focus is the overall balance of payments and not the components, i.e. the current and capital accounts.

The monetary approach to the balance of payments is really an extension of closed economy monetary theory, stressing the stability of the demand for money function and considering the channels through which changes in the money supply, out of line with changes in money demand, affect the economy. In a closed economy, an expansion of the money supply, in excess of any increase in money demand, leads to increased spending as people try to run down their money balances. This increased spending leads to increased prices and a fall in the real money supply, a process which continues until money supply and demand are again equated. In the case of an open economy, however, with perfect capital and goods mobility and a fixed exchange rate, an increased money supply will not raise prices as prices are exogenous. Instead, an increased money supply leaks out of the economy through a balance of payments deficit and a fall in the external reserves, because of the cash-balance effect discussed above. In this way, the money supply is brought into line with money demand.

As noted above, the monetary approach looks only at the money account and does not consider the other accounts of the balance of payments. A correct analysis, however, in terms of the other accounts, should in principle arrive at the same answers as the monetary approach, but such an analysis would tend to neglect the role of money (8). As proponents of the monetary approach regard the balance of payments as being fundamentally a monetary phenomenon, an analysis which does not place money at the centre of attention is seen as inferior. For them, the attraction of the monetary approach is that it analyses the relationships directly relevant to the money account and not in terms of other behavioural relationships which are only indirectly relevant to the money account.

In order to clarify the above concepts, and so as to enable us to look at the predictions of the approach, let us set up a model. In doing so we must specify a demand for money function and a money supply process (9).

Looking firstly at the money demand function, let us use the following expression:

$$m^d/p = f(Y, r, i) \qquad \text{(i)}$$

This expression says that the real demand for money depends on the income level, the opportunity cost of holding money i.e. the interest rate, and also the rate of inflation.

Transforming equation (i) into terms of rates of growth, we arrive at equation (ii):

$$m^{\cdot d}/m^d - p^{\cdot}/p = e_Y(Y^{\cdot}/Y) + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) \qquad \text{(ii)}$$

The dot beside a variable denotes a time derivative. The parameters e_Y, e_r, and e_i are the elasticities of real money balance demand with respect to income, the interest rate, and the rate of inflation respectively. As the demand for money is positively related to income and negatively related to the rates of interest and inflation, we expect the signs of the elasticities to be as follows:

$$e_Y > 0,\ e_r < 0,\ e_i < 0.$$

As a final element in our construction of the demand for money function, we specify it in nominal terms by transforming equation (ii) as follows:

$$m^{\cdot}/m = p^{\cdot}/p + e_Y(Y^{\cdot}/Y) + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) \qquad \text{(iii)}$$

Moving on to the second element of our model, that is the specification of the money supply process, we will use the simple money multiplier model. By this we mean that the money supply will be taken as equalling the product of the stock of high powered money and the money multiplier, i.e.

$$M = mH \qquad \text{(iv)}$$

The stock of high powered money (H) is made up of the domestic (D) and foreign (R) components and, as such, we can write:

$$H = R + D \qquad \text{(v)}$$

Substituting (v) into (iv), and rewriting in terms of growth rates, we arrive at equation (vi):

$$M^{\cdot}/M = m^{\cdot}/m + (R/H)(R^{\cdot}/R) + (D/H)(D^{\cdot}/D) \qquad \text{(vi)}$$

As the focus of our attention is changes in the international reserves, it makes sense to specify equation (vi) in terms of $R^{\cdot}/R$. Hence we arrive at equation (vii):

$$R^{\cdot}/R = (H/R)(M^{\cdot}/M - m^{\cdot}/m) - (D/R)(D^{\cdot}/R) \qquad \text{(vii)}$$

Taking $M = m^d$ (i.e. money market equilibrium), we can substitute equation (iii) into equation (vii) and arrive at the key relationship in the monetary approach to the balance of payments, i.e. equation (viii):

$$R^{\cdot}/R = (H/R)(p^{\cdot}/p + e_Y Y^{\cdot}/Y + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) - m^{\cdot}/m) - (D/R)(D^{\cdot}/D) \qquad \text{(viii)}$$

Considerations of this relationship can lead us to the conclusion of the monetary approach.

Firstly, it can readily be seen that changes in the international reserves, i.e. balance of payments disequilibria, are made up of changes in money demand (the first component of the R.H.S.) minus changes in the domestic component of the money supply. However, we can read deeper than that. It can also be seen that with a constant demand, changes in money supply will be reflected one-for-one in the external reserves. Looking at the demand component of the expression, we see that growth in real income (ceteris paribus) leads to an increase in reserves. While mathematically obvious, the intuition behind this is that, with increased income, people's demand for money will rise. As such, they will attempt to accomodate money balances by reducing spending, thus leading to a balance of payments surplus. Similarly, increases in the rates of interest or inflation lead to falls in the external reserves, given the signs of the elasticities e_r and e_i. As a final note to the model, it should be pointed out that the public does not react passively to all the variables in the model but has an influence on the money multiplier,

which in turn affects the level of the external reserves.

Before leaving this theoretical discussion of the monetary approach to the balance of payments, let us look at two misconceptions regarding the approach, noted as such by Frenkel and Johnson. The first misconception is to consider the approach as 'monetarist' rather than 'monetary'. Frenkel and Johnson illustrate this point by noting that the monetary approach "asserts neither that monetary mismanagement is the only cause, nor that monetary policy is the only possible cure, for balance of payments problems".

The second, and more interesting misconception, is that the monetary approach is merely a tautology and not a theory. Proponents of this view argue that to say that changes in international reserves are equal to the difference between changes in domestic money demand and D.C.E. is to say nothing. However, this point is refuted by pointing out that the monetary approach goes further than this in postulating a stable demand for money function. By postulating this, the tautology becomes a theory. According to Frenkel and Johnson, all theories begin with a tautology "and have to do so to define the variables they seek to explain".

Having looked at the theoretical issues involved in the monetary approach, let us now go on to look at its relevance to policy in the context of the economy of Ireland. Being a small and open economy, with an element of control exercised over the exchange rate, Ireland broadly meets the assumptions of the approach and, as such, an assessment is valid.

In his article "Implementing Monetary Policy" (C.B.I. Quarterly, Summer 1985), O'Cofaigh said that "the maintenance of an adequate level of external reserves for the defence of the exchange rate is a primary responsibility of the Central Bank." He went on to say that "in assessing the adequacy of our external reserves, the way in which current balance of payments deficits have been financed - mainly by foreign borrowing, entailing a rapid build-up in the external indebtedness of the public sector - must be taken into account."

Given this concern over the level of the external reserves, by invoking the monetary approach we can say that policy should be concerned with ensuring that growth in the domestic component of the money supply (D.C.E.) is in line with any growth in money demand. This will ensure the stability of the external reserves. Should the monetary authorities wish to increase the external reserves, again a policy prescription is provided. Perhaps of utmost importance however is to ensure the D.C.E. does not exceed growth in money demand because, again as stated by O'Cofaigh, "the excess spills over into balance of payments deficits which threaten the stability of the exchange rate".

It was this line of thinking which lead Kelleher to say, when commenting on balance of payments deficits in the 1970's, that "corrective actions require policy measures which will reduce the growth in credit expansion (as measured by D.C.E) to a level in line with the growth in money demand" (10).

Given this simple analysis, it is perhaps surprising to read, again in O'Cofaigh's article, that the Central Bank at the time didn't "implement or specify targets for D.C.E." The reason for this is that a major part of D.C.E. is out of the control of the Central Bank, that is the monetary financing of the P.S.B.R.

For most of the 1980's, with the level of public borrowing so high, the private sector financial surplus (S - I) was not sufficient to finance public borrowing. As such, it was necessary to resort to monetary financing by injecting purchasing power into the economy without withdrawing any. This led to growth in D.C.E. and, certainly up to the mid-1980's, a balance of payments deficit existed

consistent with monetary approach predictions. The effect on the external reserves of these balance of payments deficits was, however, masked by the fact that foreign borrowing was used to finance the budget deficit and, as such, financed the balance of payments deficit. Hence, the policy of high government deficits, financed by monetary means, was manifest not only in balance of payments deficits but also in a rise in external indebtedness. Either way, the continued pursuit of such a policy would have put pressure on the exchange rate. It was this growth in international indebtedness which lead Walsh, O'Leary and Leddin to say that "rather than looking at R (external reserves), it is more appropriate for policy to concentrate on N.R. (net external reserves) = R - G.F.B. (government foreign borrowing)" (11). This also fits in with O'Cofaigh's remarks on taking into account the financing of balance of payments current account deficits.

In conclusion, let it be said the monetary approach to the balance of payments offers a richer and more satisfying analysis of the balance of payments as opposed to approaches which overshadowed it in the middle of this century. What is more, we can say that the monetary approach preceded these other approaches, as noted in the section on early origins. As regards its application to the economy of Ireland, it is worth noting that the corrective action being undertaken at the moment, while in line with monetary considerations, is analysed largely in fiscal terms, in political circles at least. Whether this is due to ignorance of the monetary implications of policy, or an inability to articulate, isn't clear, but from our analysis it is clear that the monetary implications of policy are neglected at a cost.

Footnotes

1. "The Monetary Approach to the Balance of Payments", I.M.F.
2. Cantillon, "Entrepreneurs and Economists", Murphy Chapter 13.
3. "The Monetary Approach to the Balance of Payments", Frenkel and Johnson.
4. I.M.F., Chapter 1.
5. I.M.F., Chapter 1.
6. This paragraph draws on Frenkel and Johnson, Chapter 1.
7. I.M.F., Chapter 1.
8. Frenkel and Johnson.
9. This model is from I.M.F., Chapter 11.
10. R. Kelleher, "Recent Developments in Monetary Policy", Economic and Social Review, 1980.
11. Walsh, O'Leary and Leddin, "Economy of Ireland" (ed. J.W. O'Hagan), 5th edition.

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SECTION 3
THE OPEN ECONOMY

Chapter 10 Is Ireland a Small Open Economy ?

Alan Cox & Mary Kelly

Ireland is clearly 'small' both in geographical and demographic terms (e.g. Ireland's population makes up only 1% of the European Community's total population). In this essay we wish to examine its 'smallness' in an economic sense and then to explore its 'openness' (the different ways in which it is linked to the international economy). Finally, there will be a brief discussion of the implications of the Single European Market post-1992 for a S.O.E.

The theoretical definition of economic smallness is that domestic supply and demand conditions have no effect on international markets, that domestic producers face perfectly elastic demand curves (i.e. no demand constraints), and are unable to influence the prices of their products. The price level in the small economy is hence exogenously determined - the Law of One Price holds for that economy.

In many ways Ireland fits this description. The domestic levels of supply and demand for oil will have no effect on the world oil market, for example. Many firms with downward-sloping demand curves are competing in highly specialized, or 'niche' markets. Even the prices of highly differentiated products such as Waterford glass will be largely given as they fit into broader categories.

But doubt has been cast by many in recent years on the view that Ireland's external economic environment is all important and given. The Law of One Price, although it empirically holds in the long-run, falls far short of explaining all short- and medium-term fluctuations in the Irish price level. Honohan showed that Irish demand levels are not solely determined by world demand levels. This is because of substantial trading costs in many markets. Yet it can be said that the traded sector in Ireland has a relatively important position, enabling Irish producers to break into many new markets, increasing their demand without changing prices. In the long-term the theoretical definition of smallness represents a good approximation to the actual state of the Irish economy.

An issue is whether Ireland's geographic and demographic smallness contributed to its economic smallness such as it is. Many small countries specialize in activities where they have a material advantage and where they can influence world prices, e.g. Saudi Arabia's influence on global oil prices or South Africa's power in setting the price of diamonds. From these examples it would appear that it is possession or non-possession of natural resources which determines the economic smallness of a country. Ireland's main natural resource is land, and here geographical size places limits on the quantity of this resource in a nation's possession. Thus Ireland's small geographical area plays a role in determining its economic size.

The degree of integration of the Irish economy with the international economy determines its 'openness'. Smallness and openness are not equivalent - Albania is small but not open, while West Germany is open but not small. However, size does influence the nature of an economy's openness - for an economy such as West Germany the term means an ability to influence economic activities in other

economies. For a small economy such as Ireland, openness is more likely to mean exposure to, and dependence on, the economic actions of foreign trading partners.

The openness of the economy can be examined by studying it linkages with the rest of the world. Three categories of linkage will be examined, namely trade linkages, factor linkages, and technological linkages.

A major difficulty in analysing trade statistics is that exports and imports are expressed as gross percentages of G.N.P (X/G.N.P. and M/G.N.P respectively). These gross figures ignore that exports may be comprised of imported components so that value-added is not properly measured. However, as no other trade figures are available we will use the conventional X/G.N.P. and M/G.N.P measures. Over the past twenty years these have grown from 25% to 60% and from 35% to 58% respectively. The long history of free trade with Britain may have laid the foundations for such an open economy which has been explicitly sought since the Economic Development Report of 1958. Ireland ranks only behind such exceptional city-states as Hong Kong and Singapore in international comparisons.

The second element of trade linkages is their quality. In Ireland's case the linkages are in production goods rather than consumer goods because Ireland's production is tied to that of the external economy. A small economy with minimal research and development would be unable to match the level and quality of imported technology.

Factor linkages can in turn be subdivided into labour linkages, financial linkages, and corporate linkages. The most obvious form of labour linkages is the flow of emigration according to relative unemployment and wage rate conditions between neighbouring countries. While family and other influences do constrain the level of 'openness' in the labour market, mobility looks set to increase even further as Irish people learn other European languages and adopt a more cosmopolitan outlook post-1992.

An obvious illustration of financial linkage is Ireland's high level of foreign debt (60% of G.N.P). The domestic stockmarket closely follows movements in London, New York and Tokyo. Interest rates must be comparable in real terms to level in other economies (when expected exchange rate fluctuations are taken into account) and membership of the E.M.S. signifies the relationship between the Irish Punt and the currencies of its major trading partners such as the German D-mark. The recent abolition of capital controls will further integrate Irish financial markets with international ones.

Corporate linkages are widespread, given that multinational corporations employ 86,000 of the 186,000 workers in the Irish manufacturing sector and account for 80% of Irish non-food exports. However many such firms may be said to be 'in, but not of, the domestic economy'. as they use mostly imported raw materials and export the bulk of their output. Similarly profit repatriation reduces the value-added to the Irish economy. The importance of M.N.C.s underlies the increasing openness of all liberal economies as different stages in a single production process are spatially dispersed internationally.

A major reason for encouraging foreign investment in Ireland is that a transfer of technology takes place. The huge financial costs of original R&D are beyond the resources of a small economy - domestic R&D is confined to adapting foreign technology to specific Irish circumstances (such as the unusual hardness of Irish water). Given that much technology is developed in an intra-firm manner, encouraging foreign investment here is a more efficient means of acquiring technology than expensive licensing agreements.

Ireland's membership of the E.C. and other international economic organizations such as G.A.T.T. and the O.E.C.D. illustrates that political linkages are ever more important in analysing Ireland's economic openness. Agricultural policy is largely set in Brussels and the 1992 project seeks to implement 300 directives to further harmonize the economic policies of E.C. member nations. One example is the role the E.C. played in regulating the Irish Distillers takeover battle in 1988. The transfer of economic sovereignty implicit in the Single European Act is not only a manifestation of Ireland's political openness but also raises questions as to the future level of openness of the Irish economy.

Two possibilities exist. First, a protectionist 'Fortress Europe' may emerge which may reduce trade with the United States and Japan. This would reduce Ireland's openness to non-European economies and may also mean a reduction in smallness, as domestic firms are more likely to possess market power in the European market than in the global economy.

However, the more likely scenario is a liberal single market with open trade linkages with the U.S and Japan. This will serve to further copperfasten the smallness and the openness of the Irish economy which we have attempted to articulate in this essay.

Chapter 12 Ireland's Industrial Experience & Policy Since E.C. Entry & the Implications of 1992

Finbar McDonnell

This paper examines Ireland's industrial experience since 1973. Entry to the Common market in that year was the final stage in opening the Irish Economy to outside trade and competition. At the time, there was much debate as to how Irish industry would fare, and of course the optimists won the day, with the bigger market seen as a great opportunity for Irish companies. I will examine the extent to which this opportunity has been availed of, before briefly examining the implications of the latest "great opportunity "for Irish industry - the completion of the European internal market in 1992 .

The last sixteen years have seen great upheaval in Irish industry. Table 1 shows manufacturing employment by sector and two things are obvious from this table.

Table 1
Manufacturing employment by sector, selected years

Sector	1973	1980	1986
Food	48,116	51,843	40,400
Drink & Tobacco	11,021	11,276	9,039
Textiles	20,530	17,797	10,874
Clothing, Footwear & Leather Goods	28,122	24,116	16,781
Paper & Printing	15,890	16,874	13,991
Non-Metallic Minerals	15,491	18,956	13,318
Timber & Furniture	10,087	11,465	9,998
Chemicals	11,068	14,620	13,112
Metal & Engineering	46,750	68,314	62,148
Miscellaneous	8,347	11,402	10,329
	215,422	246,665	199,990

(Source: I.D.A. Employment Files)

Firstly, the period since 1973 can be subdivided into pre-1980 and post-1980. The first period, which saw manufacturing employment increase substantially, coincided with a boom in the domestic economy and very high state aid to industry. The second period, which brought a dramatic decrease in employment coincided with a domestic recession and some tightening of the industrial grants policy. I will look at each period in turn.

Secondly, there has been a significant sectoral shift within industry. The Metal & Engineering sector has replaced the Food sector as the biggest employer. Employment in the Textiles and Clothing & Footwear sectors has fallen sharply. Only in the Chemicals and Metal & Engineering sectors has absolute employment increased. In general, the 'traditional' sectors have experienced an absolute and (except for Timber) relative decline in employment. This has coincided with an

increase in electronics, instrument engineering, chemicals, etc. - the high-technology sectors.

However, the sectoral changes are not uniform over the entire period. Between 1873 and 1980, an absolute decline in employment was recorded in only two sectors - Textiles and Clothing & Footwear. Both of these were what was described as "low-wage industries" by the Telesis Report. (1). What occurred here was part of a long-term inter-industry adjustment with competitive advantage in large parts of these industries shifting to developing countries. For textiles "in standard long-runs, such as cotton-fabrics for shirts, competition from low-wage cotton-growing countries such as Pakistan, India or Egypt was in many products inevitable and insurmountable". (2). For clothing and footwear "newly industrialising countries invested in larger-scale, newer technology production facilities, and took advantage of lower wage costs: Korea and Hong Kong in men's suits, skirts or knitting; Taiwan and Brazil in leather shoes and bags; Argentina in leather; Pakistan and India in cotton cloth, etc." (14). What is remarkable about these industries' performance is that, faced with such competition from developing countries they showed great resilience. Table 2 shows the intra-industry trade ratios for certain subsectors of these industries.

Table 2
Intra-industry trade ratios for selected sectors

Sector	1971	1977
Textiles, Fibres & Waste	0.520	0.555
Leather Manufacturers	0.725	0.628
Textile Yarn, Fibres, etc.	0.622	0.938
Clothing, Footwear, Travel Goods	0.821	0.867

(Source: "On the Economics of Intra-Industry Trade", Dermot McAleese (1978), p.144). (3).

Certain textile and clothing sectors were suffering, but others were finding niches in the E.C. market. In the knitting industry for example, goods requiring very long production runs were not viable and production shifted to outerwear (medium-runs) and fashion or handmade goods (short-runs). Table 3 reinforces this, showing that the net change in employment tells only part of the story.

Table 3
Components of manufacturing employment change (1973 - 1980)

Sector	Jobs Created	Jobs Lost
Textiles	10,210	12,943
Clothing & Footwear	14,657	18,663

(Source: I.D.A. Employment Files)

By 1980 much of the inevitable adjustment to the developing countries' competition had been made. Telesis estimated that job losses in these sectors

would be lower in the 1980's. These industries were ready for a "refocusing strategy" and Telesis went so far as to identify areas where "the source of competition is in other developed countries, with similar or higher levels of labour costs." (4).

In contrast to textiles and clothing, Ireland's other 'traditional' industries did well during the first seven years in the European Community. The food sector experienced increased employment with a gradual move from exporting primary products to exporting processed products. Exports however continued to be concentrated in the United Kingdom, as is seen in Table 4.

Table 4
Share of exports to Great Britain and Northern Ireland (%)

Sector	1975	1979
Sugar Confectionery	48	46
Bread, Biscuits & Cakes	85	86
Cocoa & Chocolate Confectionery	89	89

(Source: N.E.S.C. No. 6 (Telesis Report) Exhibit 3.25)

This was the story for the other traditional industries also, like Paper & Printing, Drink & Tobacco, Non-Metallic Minerals, and Timber & Furniture. Intra-industry trade grew, "reflecting a genuine adjustment of these sectors to specific product lines and activities" (5) as is seen in table 5.

Table 5
Components of manufacturing employment change (1973 - 1981)

Sector	Jobs Created	Jobs Lost
Food	23,844	20,117
Drink & Tobacco	3,042	2,787
Timber & Furniture	8,065	6,687
Paper & Printing	6,660	5,676
Non-Metallic Minerals	7,836	4,369

(Source: I.D.A. Employment Files)

Trade growth was overwhelmingly with the United Kingdom however. Telesis reported that "Ireland has only entered the E.C. recently and is closer to the U.K. than to the six original members ... This means that Irish companies have difficulty exporting outside the former British zone." (6). The challenge for these companies in the 1980's was to break into the large markets in mainland Europe.

Finally, technologically-based industries grew rapidly in the years immediately after Ireland's accession into the E.C. It is worth noting that, as with Clothing & Textiles, substantial segments of the traditional Engineering sector also lost out to developing countries. However, unlike the traditional sectors, the Metals & Engineering and Chemical industries completely changed and adapted to the new E.C. environment. This, as will be seen later, was a conscious development

strategy of the I.D.A. who invested heavily in high-tech areas. Between 1973 and 1980, for indigenous metals and engineering firms, most jobs "came from general metal fabrication operations, metal bending and pressing, and welding and repair shops which typically serve a very local market, and from structural steel, where the economics also favours local suppliers." (7). Of the hundreds of such firms established between 1965 and 1980, only fourteen employed more than one hundred people by 1980, and only two exported any significant amount. While not impossible, Telesis concluded that it would be very difficult for these firms to break into mainland European markets.

The big job creators in the technology exporting area were the new foreign-owned companies. Since the early 1960's, it was a government policy to attract direct foreign investment by foreign firms in Ireland, and a range of grants and incentives was established to this end. Furthermore, companies producing high-technology products were considered the most attractive. As early as 1970, the I.D.A. "hoped to attract to Ireland R & D investment by leading international companies." (8). In the period 1978-80, over two-thirds of jobs approved by the I.D.A. were in the high-technology industries. Table 6 shows the huge amount of jobs created in these industries between 1973 and 1981. The number of jobs lost is also interesting. These are not simply the result of intra-industry structural change but represent foreign firms who set up in Ireland and left again during the seven year period.

Table 6

Components of manufacturing employment change (1973 - 1980)

Sector	Jobs Created	Jobs Lost
Chemical	8,314	4,562
Metals & Engineering	48,847	27,283

(Source: I.D.A Employment Files)

By December 1980, there were 10,300 jobs in electronics and electrical firms in Ireland which had been "the main focal point of activity" for the I.D.A. (9). Mainly these were manufacturing satellite plants for extra-E.C. (mainly U.S.) firms looking for a base within the European Community. There were almost 19,000 jobs in Mechanical Engineering by 1980; "mainly in sub-assembly and assembly shops commonly found in newly industrialising countries .... skilled employment represented only 1%-2% of the workforce." (10). In the Chemicals industry, there were 8,600 jobs in foreign firms by December 1980. Again, there were problems - "only two of the thirty-two companies surveyed carry on R & D in Ireland and none managed the distribution system from Ireland. Thus, the key activities which determine competitive success in this industry were not carried on in Ireland." (11). Telesis recommended changing the I.D.A. grants strategy in the 1980's, so that grants would be given only to firms creating skilled employment, in 'stand-alone' firms.

The third type of technological firms creating jobs were the sub-supply firms - those supplying the foreign firms in Ireland. Some Irish companies did well here in the 1973-80 period, but they tended to be in low-skilled areas like packaging rather than high-skilled areas like computer components.

By 1980, after seven years in the E.C. market, much adjustment had taken place. Some Irish industries had lost out to N.I.C.'s, but this inevitable (and nothing to do with the E.C.) process was largely complete. Traditional industries had specialized more; adjusting to specific product lines and activities; their trade had become more differentiated. However, this process had taken place almost exclusively with the U.K. - traditional industries had not taken advantage of the French, German, Italian and other mainland European markets. Technology-based industries were growing in Ireland, characterized by foreign ownership and substantial state support. Irish firms were finding it difficult to break into this area; either to export their own products or as a supplier to the foreign firms in Ireland.

There was much debate at the time as to what would be the most suitable course of development for Irish industry, so that the limited state funds could be spent properly. A large investment would be necessary if indigenous industries were to overcome their structural problems and a similar investment in grants and other incentives would be needed if foreign firms were to be attracted. The Telesis Report, commissioned by the N.E.S.C. to examine industrial policy, came out in favour of indigenous industries. In Kennedy's summary of the report; "The approach should be more selective, giving priority to building a limited number of large Irish companies to serve markets not only here and in Britain but in the whole Common Market and beyond. The key to the success of these companies would lie in high-quality marketing, innovation and the development of native skills .... The Report had no objection to foreign enterprise but stressed most of all the need to foster native industry, since in its view 'no country has succeeded in developing a strong indigenous sector'". (12). Of course, there were other views, and while the language of industrial policy changes somewhat in the White Paper (1984) (13), the industrial policy of the 1980's itself did not change substantially from the 1970's, with foreign investment still seen as the engine of Irish economic growth.

This has meant the continued decline of the Textile and Clothing -Footwear sectors, as already seen in Table 1, although the problem now was not developing countries. "Although some inter-industry adjustment ... was inevitable", says the N.E.S.C., "it is in general not the case that Irish production of these goods has been replaced by the output of industrial policy." (14). The N.E.S.C. understand what "this may well reflect an early belief that long-run decline was inevitable" but points out that "in many respects, the experience since 1965 has confounded this belief - it has taken a remarkably long time for these sectors to go." The Council goes even further - "it is clearly tempting to speculate on whether intervention aimed specifically towards intra-industry adjustment could have reversed the decline." Jim O'Leary did some of this speculating; "the signs are clearly that market segments with a sustainable competitive advantage exist in the clothing industry even for countries with relatively high labour costs. What is required is the installation of state-of-the-art production processes, great attention to market development, and ongoing product innovation." (15).

The more successful indigenous industries of the 1970's joined Textiles and Clothing in decline. Paper & Printing, Non-Metallic Minerals, and Drink & Tobacco all experienced output and employment decline. By 1989, N.E.S.C. was saying the same things that had been said nine years earlier - "If these firms use their fundamental strength to develop products for export then the element of import penetration could be seen as a natural outcome of taste and product

diversity typically found in economic integration." (16). In other words, the problem (although now critical) is still how to break into the mainland European markets. Why? - "These firms have not been subject to active industrial policy" says the N.E.S.C. Despite this neglect, there has been one bright spot - the Food industry has made progress in all European markets, and by 1988 three of the eight largest public companies were exporting food products - The Kerry Group, Avonmore Foods and Waterford Foods (17), not to mention the Goodman Group. This success has been possible due to special circumstance - because the comparative advantage in this sector is "largely based on access to suitable resources but increasingly it will depend on the application of scientific advances and product differentiation." (18). The decline of 'traditional' industries is shown in Table 7.

Table 7
Components of manufacturing employment change (1981 - 1986)

Sector	Jobs Created	Jobs Lost
Textiles	4,503	11,426
Food	18,769	30,213
Clothing, Footwear & Leather Goods	13,100	20,439
Paper & Printing	4,703	7,587
Timber & Furniture	8,262	9,729
Drink & Tobacco	1,559	3,796
Non-Metallic Minerals	4,944	10,584

(Source: I.D.A. Employment Files)

The growth areas in the 1980's have been the engineering and chemical industries. Their importance has increased steadily, even though the numbers employed have declined slightly (see Table 8). Since all industries have registered a drop in employment since 1980, the two industries of Table 8 accounted for 38% of manufacturing employment, as against 34% in 1980 and 27% in 1973. Again, the extremely high turnover of jobs in the Metals & Engineering sector is notable.

Table 8
1981 - 1986
Components of manufacturing employment change

Sector	Jobs Created	Jobs Lost
Chemicals	5,769	7,277
Metal & Engineering	47,876	54,056

(Source: I.D.A. Employment Files)

These high-tech industries have continued to be dominated by foreign-owned firms using Ireland as a satellite manufacturing plant. Table 9 shows some of the industries in more detail and the extent of foreign investment.

Table 9
Employment level in foreign firms in specific high-tech sectors

Sector	% of Employment in Foreign Firms
Data Processing	96.5
Pharmaceuticals	84.3
Instrument Engineering	94.1
Other Chemicals	78.5
Electrical Engineering	81.3
Rubber	94.7
Other Textiles	71.3

(Source: Anthony Foley, "The Role of the Foreign and Irish Sectors in Manufacturing", Seminar Series, Paper 1, December 1988, p.35)

The figures above confirm, says Foley, "the generally recognized, but inadequately discussed, high reliance on foreign companies for our involvement in sophisticated modern high-technology industries." (19). Of course, not all high-tech firms are foreign, just as all traditional firms are not Irish, but most are in each case. Irish companies have found it very difficult to break into the high-tech area, and by 1988, only three of the top forty Irish public companies were involved with high-tech products - Unidare (No. 17), Memory Computer (No. 35), and Printech (No. 37). (20). The reason for this is that high-technology industries require production on a very large scale if costs are to be competitive. The huge cost involved (never mind Irish industries' structural weaknesses) mean it is enormously difficult for an Irish company to break into the European market. For foreign firms, the situation is different - they can produce on a massive scale, and most site only a small part of their operations in Ireland. Most of them have already reached the METS and are selling onto the E.C. market, taking advantage of the fragmentation that Project 1992 is trying to do away with.

Although a National Linkage Programme has been started, three economists with the I.D.A. wrote in 1988 that "our experience in working with Irish companies ... has shown that basic structural weaknesses in areas such a management, production, technology, quality control, and scale have prevented Irish industries from capitalizing on the huge multinational market for sub-supply goods." O'Leary (1987) reported that "the extent of sub-supply linkages ... is very limited." Of course, large amounts of effort and resources are still being applied in this area, but the experience so far is not encouraging.

What then will Project 1992 mean for Irish industry? The effects will be greatest on the high-technology sectors of the economy built up over the last two decades. Ireland chose to focus on the high-tech Engineering & Chemical sectors as the means to achieve export-led growth. This can perhaps be seen as identifying a gap in the European market and trying to fill that gap. Europe was not able to compete against the U.S. or Japan in high-tech products and Ireland provided a base for U.S. and Japanese companies to operate in Europe. The purpose of 1992 however is to ensure that European firms win back this market. Over the next decade, unit costs are expected to fall significantly in European high-tech firms and competition will increase proportionately for the U.S. and Japanese firms. If the forecasts of the European Commission, and indeed most economists, are correct, non-E.C.

high-tech firms are in for a tough time in the post-1992 European market. This has big implications for Ireland. If the European firms succeed (and the future of the E.C economy to a large extent depends on this) Ireland will not be able to rely on high-tech industries for growth in the 1990's. If European firms start to regain some of the market share now held by non-E.C. firms, Ireland's high-technology sector could actually suffer job losses. Of course, this may not happen in the short-run - in the immediate period following 1992, U.S. and Japanese firms could do well. In the long-run, however, there is clearly a conflict between a rapidly expanding European high-tech sector supplying the European market and a growing U.S. and Japanese high-tech sector based in Ireland. One might reject the confident predictions of the European Commission and say that the non-E.C. firms have an unassailable advantage in the market place. If European firms do not respond to Project 1992 however, rather than Ireland's high-tech sector continuing to boom, it is likely that the E.C. would force large changes in our grants and incentives packages. Project 1992 is simply too important for Europe to be allowed to fail.

Ireland's problems in high-technology industries in a post-1992 Europe are exacerbated by the enlargement of the E.C. in recent years. Spain, Portugal and Greece are all competing directly with Ireland for mobile international investment, as is Scotland. All are underdeveloped regions which are eligible for substantial Structural and Regional funds from the E.C. and all have the advantage over Ireland of being connected by land to the main European markets. It seems likely that Ireland's attractiveness as a base for extra-E.C. companies expanding into Europe will decrease in the 1990's.

In the non-high-tech areas, Project 1992 will also have adverse effects for Irish industry. With only small economies to be achieved, the size of firms in the Community will not change much. The abolition of customs barriers and the harmonization of standards will have some effect. What could be very important is the breaking down of psychological barriers with all the publicity being given to Project 1992. Firms all over Europe are realizing how big the Community market is and the opportunities that exist for them. Competition should increase, which will give an increased spur to intra-industry trade in the European Community. Unfortunately, as mentioned earlier, Ireland has not concentrated on developing the traditional industries where intra-industry trade is likely to grow, and Ireland has many structural weaknesses in this area. In other words while Project 1992 should increase European intra-industry trade in 'traditional' industries, it will simply increase import penetration in Ireland with no corresponding increase in exports.

Given this rather gloomy scenario, it is perhaps surprising that 1992 is being portrayed so positively by government and others. As in 1973, the emphasis is on the opportunity rather than on how Irish companies might best take advantage of the opportunity. This shortsightedness is reflected in the Irish 1992 debate. The topic most often discussed is the process of creating a single European market, i.e. the harmonization of technical regulations, the abolition of frontier formalities, etc. These measures will provide Ireland with new opportunities and should of course be portrayed positively. However, what should be the focus for far more debate is the longer term creation of a more competitive economic environment in the E.C., which I have identified as a threat to Irish industry. A shift in the debate might get firms to prepare for the competition, and think about expanding themselves into Europe. The opportunity missed in 1973 could be grasped in 1992.

Footnotes

1. The Telesis Consultancy Group, "A Review of Industrial Policy", N.E.S.C. No. 64, February 1982, p.92.
2. Ibid, p.92.
3. Dermot McAleese, "Intra-Industry Trade, Level of Development and Market Size" in Herbert Giersch (ed) "On the Economics of Intra-Industry Trade", Symposium, Kiel University, 1978.
4. The Telesis Consultancy Group, op cit, p.95.
5. N.E.S.C., Forthcoming Publication, Chapter 3, p.8.
6. The Telesis Consultancy Group, op cit, p.100.
7. Ibid, p.113.
8. Industrial Development Authority, "Annual Report", 1980.
9. The Telesis Consultancy Group, op cit, p.137.
10. Ibid, p.144.
11. Ibid, p.146.
12. Kieran A. Kennedy, "Industry: The Revolution Unfinished", p.47, in Kieran A. Kennedy (ed), "Ireland in Transition", The Mercier Press, Dublin, 1986.
13. Government White Paper, "Industrial Policy", C.S.O., 1984.
14. N.E.S.C., op cit, p.12.
15. Jim O'Leary, "The Performance of Manufacturing Industry: Past Trends and Lessons for the Future", p.12, paper delivered to the Industrial Studies Association, March 1987.
16. N.E.S.C., op cit, p.10.
17. The Irish Times, Thursday, December 29, 1988, p.18.
18. N.E.S.C., op cit, p.12.
19. Anthony Foley, "The Role of the Foreign and Irish Sectors in Manufacturing", Seminar Series, Paper No.1, December 1988, p.35.
20. The Irish Times, op cit.

Chapter 11 The Monetary Approach To The Balance of Payments

Alan Barrett

"Balance of payments analysis", as cited by Rhomberg and Heller of the I.M.F., "has been influenced directly by the changing character of international economic problems; in addition, however, it has also been affected by changing methodological fashions in the mainstream of economic thought" (1). In this paper, we shall examine the approach which has resulted from these changing methodological fashions, referred to in the literature as the monetary approach to the balance of payments and distinguished from other approaches through its concentration on the behavioural relationships directly relevant to the money account. In this examination we will look at the origins of the approach, an issue around which a certain amount of controversy exists. We will then go on to look at the modern revival of the approach following a suspension of use in the middle point of this century. The characteristics and predictions of the approach will then be considered and finally we will look at what relevance the approach has to an examination of policy in the economy of Ireland. It is hoped that through this paper ,the monetary approach to the balance of payments will be shown to be a most useful and enlightening analytical framework, to whose predictions particular attention should be paid.

To begin, let us consider the early origins of the monetary approach. As noted in the introduction, these early origins are surrounded in some controversy. Essentially the controversy is over whether David Hume or Richard Cantillon is the true fore-father of the approach. In The New Palgrave, only Hume is mentioned under this heading and, in their Economic and Social Review article of 1985, Kennelly and Finn say that the classical origins of international monetary theory are commonly attributed to Hume, again not mentioning Cantillon. Essentially what is being referred to is Hume's specie flow mechanism in which he linked an increase in the money supply to a balance of payments deficit. The transmission mechanism which he noted was as follows: an increase in the money supply raises spending which in turn raises domestic prices. This makes domestic goods less competitive and a balance of payments deficit ensues, leading to a fall in the domestic money supply. In this way, given a domestic supply constraint, an increased money supply cannot be held indefinitely in a country. The effect which Hume is talking about is a relative price effect. The contention of those who support the Cantillon claim to being the fore-father is that Cantillon wrote of both a relative price effect and a cash balance effect (2). He saw an increased money supply raising prices and also raising expenditure directly on imported goods and on goods that would otherwise be exported. In this way, the money supply increase is manifest in a balance of payments deficit quite directly and the money supply falls. It is this cash balance effect that is at the centre of the modern monetary approach, and as such the claims of the Cantillon camp seem valid. Frenkel and Johnson go half way in conceding this when they write that the "new approach, while Humean in spirit, places the emphasis not on relative price changes but on the direct influence of excess money demand, or money supply, on the balance between income and expenditure" (3). They fail, however, to

attribute this cash balance effect to Cantillon.

Given the richness of the analysis of both Hume and Cantillon, it is perhaps surprising that these forms of analysis, with their emphasis on the monetary aspects of the balance of payments, should have been suspended for twenty-five or so years in the middle of this century. This suspension is explained in The New Palgrave "by the events of the 1930's including the international monetary collapse of 1931 and the Keynesian revolution."

In the 1930's, the methodological fashions of the day led to "the tools of value theory - demand, supply and elasticities" - being applied to the problem of balance of payments deficits (4). Hence we find the elasticities approach (Robinson, 1937), which implied that "selective national traded goods prices could be permanently altered by devaluation" under certain elasticity conditions. This approach however, suffered very much from its partial equilibrium stance, ignoring the crucial effects on aggregate income and expenditure arising from devaluation.

This difficulty with the elasticities approach was supposedly answered through the use of a methodological framework more in keeping with Keynesian analysis, seen in the absorption approach of Alexander (5). This approach argued that questions, regarding the effects on the balance of payments of changes in economic variables, were best assessed by ascertaining the effects on output and absorption. However, this approach suffered from the difficulty that it was not suited for examining changes which only affected output and absorption indirectly: changes such as devaluation or inflation. Its second major flaw, and one shared with the elasticities approach, is that it only looked at the current account balance and not at the overall balance of payments.

With concern regarding unemployment giving way to concern over inflation, the Keynesian methodological approach came to be supplemented by the tools of monetary analysis, and hence we see a revival of interest in the monetary approach to the balance of payments. This revival of interest occurred at both an academic level and also at the level of central bankers and other national and international financial officials. The acceptance of the Keynesian analytical framework had left a gap in terms of problems arising in the areas of the balance of payments and monetary issues.

In academic circles, the first element of this modern revival is considered to be, albeit in an indirect sense, Meade's "The Balance of Payments". It was Mundell who then took Meade's analysis, extended it to include the capital account, and also incorporated two developments which robbed Meade's analysis of two assumed policy instruments. One such development was the growing reluctance of countries to use devaluation as a policy instrument, the other being the growing constraints on the use of trade barriers arising from G.A.T.T negotiations. While it was also Mundell who recognized that, in a model of capital mobility, the central bank controls not the money supply and employment but domestic credit and the balance of payments, it was Johnson who popularized the concept of the fundamentally monetary nature of the balance of payments (6).

Outside of this academic circle, the main developments in this area were made under Polak at the International Monetary Fund. Their approach to monetary management in the context of balance of payments disequilibra, evolved in the 1950's in work concerned with Latin American economies. The approach followed monetary approach reasoning, estimating prospective money demand changes and altering domestic credit expansion accordingly in an effort to keep the external account in balance (7).

Given the origins of the monetary approach to the balance of payments and its modern revival, let us now look at the characteristics of the monetary approach and then let us go on to look at its predictions.

The essence of the monetary approach is that it views changes in the international reserves of a country as a reflection of a stock disequilibrium in the domestic money market. The link between the international reserves and the money market is that the change in the international reserves must equal the difference between changes in the demand for money on the domestic money market and domestic credit expansion. In the monetary approach, a balance of payments deficit/surplus exists when there is a decrease/increase in the international reserves. As such, its focus is the overall balance of payments and not the components, i.e. the current and capital accounts.

The monetary approach to the balance of payments is really an extension of closed economy monetary theory, stressing the stability of the demand for money function and considering the channels through which changes in the money supply, out of line with changes in money demand, affect the economy. In a closed economy, an expansion of the money supply, in excess of any increase in money demand, leads to increased spending as people try to run down their money balances. This increased spending leads to increased prices and a fall in the real money supply, a process which continues until money supply and demand are again equated. In the case of an open economy, however, with perfect capital and goods mobility and a fixed exchange rate, an increased money supply will not raise prices as prices are exogenous. Instead, an increased money supply leaks out of the economy through a balance of payments deficit and a fall in the external reserves, because of the cash-balance effect discussed above. In this way, the money supply is brought into line with money demand.

As noted above, the monetary approach looks only at the money account and does not consider the other accounts of the balance of payments. A correct analysis, however, in terms of the other accounts, should in principle arrive at the same answers as the monetary approach, but such an analysis would tend to neglect the role of money (8). As proponents of the monetary approach regard the balance of payments as being fundamentally a monetary phenomenon, an analysis which does not place money at the centre of attention is seen as inferior. For them, the attraction of the monetary approach is that it analyses the relationships directly relevant to the money account and not in terms of other behavioural relationships which are only indirectly relevant to the money account.

In order to clarify the above concepts, and so as to enable us to look at the predictions of the approach, let us set up a model. In doing so we must specify a demand for money function and a money supply process (9).

Looking firstly at the money demand function, let us use the following expression:

$$m^d/p = f(Y, r, i) \qquad \text{(i)}$$

This expression says that the real demand for money depends on the income level, the opportunity cost of holding money i.e. the interest rate, and also the rate of inflation.

Transforming equation (i) into terms of rates of growth, we arrive at equation (ii):

$$m^{\cdot d}/m^d - p^{\cdot}/p = e_Y(Y^{\cdot}/Y) + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) \qquad \text{(ii)}$$

The dot beside a variable denotes a time derivative. The parameters e_Y, e_r, and e_i are the elasticities of real money balance demand with respect to income, the interest rate, and the rate of inflation respectively. As the demand for money is positively related to income and negatively related to the rates of interest and inflation, we expect the signs of the elasticities to be as follows:

$$e_Y > 0,\ e_r < 0,\ e_i < 0.$$

As a final element in our construction of the demand for money function, we specify it in nominal terms by transforming equation (ii) as follows:

$$m^{\cdot}/m = p^{\cdot}/p + e_Y(Y^{\cdot}/Y) + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) \qquad \text{(iii)}$$

Moving on to the second element of our model, that is the specification of the money supply process, we will use the simple money multiplier model. By this we mean that the money supply will be taken as equalling the product of the stock of high powered money and the money multiplier, i.e.

$$M = mH \qquad \text{(iv)}$$

The stock of high powered money (H) is made up of the domestic (D) and foreign (R) components and, as such, we can write:

$$H = R + D \qquad \text{(v)}$$

Substituting (v) into (iv), and rewriting in terms of growth rates, we arrive at equation (vi):

$$M^{\cdot}/M = m^{\cdot}/m + (R/H)(R^{\cdot}/R) + (D/H)(D^{\cdot}/D) \qquad \text{(vi)}$$

As the focus of our attention is changes in the international reserves, it makes sense to specify equation (vi) in terms of $R^{\cdot}/R$. Hence we arrive at equation (vii):

$$R^{\cdot}/R = (H/R)(M^{\cdot}/M - m^{\cdot}/m) - (D/R)(D^{\cdot}/R) \qquad \text{(vii)}$$

Taking $M = m^d$ (i.e. money market equilibrium), we can substitute equation (iii) into equation (vii) and arrive at the key relationship in the monetary approach to the balance of payments, i.e. equation (viii):

$$R^{\cdot}/R = (H/R)(p^{\cdot}/p + e_Y Y^{\cdot}/Y + e_r(r^{\cdot}/r) + e_i(i^{\cdot}/i) - m^{\cdot}/m) - (D/R)(D^{\cdot}/D) \qquad \text{(viii)}$$

Considerations of this relationship can lead us to the conclusion of the monetary approach.

Firstly, it can readily be seen that changes in the international reserves, i.e. balance of payments disequilibria, are made up of changes in money demand (the first component of the R.H.S.) minus changes in the domestic component of the money supply. However, we can read deeper than that. It can also be seen that with a constant demand, changes in money supply will be reflected one-for-one in the external reserves. Looking at the demand component of the expression, we see that growth in real income (ceteris paribus) leads to an increase in reserves. While mathematically obvious, the intuition behind this is that, with increased income, people's demand for money will rise. As such, they will attempt to accomodate money balances by reducing spending, thus leading to a balance of payments surplus. Similarly, increases in the rates of interest or inflation lead to falls in the external reserves, given the signs of the elasticities e_r and e_i. As a final note to the model, it should be pointed out that the public does not react passively to all the variables in the model but has an influence on the money multiplier,

which in turn affects the level of the external reserves.

Before leaving this theoretical discussion of the monetary approach to the balance of payments, let us look at two misconceptions regarding the approach, noted as such by Frenkel and Johnson. The first misconception is to consider the approach as 'monetarist' rather than 'monetary'. Frenkel and Johnson illustrate this point by noting that the monetary approach "asserts neither that monetary mismanagement is the only cause, nor that monetary policy is the only possible cure, for balance of payments problems".

The second, and more interesting misconception, is that the monetary approach is merely a tautology and not a theory. Proponents of this view argue that to say that changes in international reserves are equal to the difference between changes in domestic money demand and D.C.E. is to say nothing. However, this point is refuted by pointing out that the monetary approach goes further than this in postulating a stable demand for money function. By postulating this, the tautology becomes a theory. According to Frenkel and Johnson, all theories begin with a tautology "and have to do so to define the variables they seek to explain".

Having looked at the theoretical issues involved in the monetary approach, let us now go on to look at its relevance to policy in the context of the economy of Ireland. Being a small and open economy, with an element of control exercised over the exchange rate, Ireland broadly meets the assumptions of the approach and, as such, an assessment is valid.

In his article "Implementing Monetary Policy" (C.B.I. Quarterly, Summer 1985), O'Cofaigh said that "the maintenance of an adequate level of external reserves for the defence of the exchange rate is a primary responsibility of the Central Bank." He went on to say that "in assessing the adequacy of our external reserves, the way in which current balance of payments deficits have been financed - mainly by foreign borrowing, entailing a rapid build-up in the external indebtedness of the public sector - must be taken into account."

Given this concern over the level of the external reserves, by invoking the monetary approach we can say that policy should be concerned with ensuring that growth in the domestic component of the money supply (D.C.E.) is in line with any growth in money demand. This will ensure the stability of the external reserves. Should the monetary authorities wish to increase the external reserves, again a policy prescription is provided. Perhaps of utmost importance however is to ensure the D.C.E. does not exceed growth in money demand because, again as stated by O'Cofaigh, "the excess spills over into balance of payments deficits which threaten the stability of the exchange rate".

It was this line of thinking which lead Kelleher to say, when commenting on balance of payments deficits in the 1970's, that "corrective actions require policy measures which will reduce the growth in credit expansion (as measured by D.C.E) to a level in line with the growth in money demand" (10).

Given this simple analysis, it is perhaps surprising to read, again in O'Cofaigh's article, that the Central Bank at the time didn't "implement or specify targets for D.C.E." The reason for this is that a major part of D.C.E. is out of the control of the Central Bank, that is the monetary financing of the P.S.B.R.

For most of the 1980's, with the level of public borrowing so high, the private sector financial surplus (S - I) was not sufficient to finance public borrowing. As such, it was necessary to resort to monetary financing by injecting purchasing power into the economy without withdrawing any. This led to growth in D.C.E. and, certainly up to the mid-1980's, a balance of payments deficit existed

consistent with monetary approach predictions. The effect on the external reserves of these balance of payments deficits was, however, masked by the fact that foreign borrowing was used to finance the budget deficit and, as such, financed the balance of payments deficit. Hence, the policy of high government deficits, financed by monetary means, was manifest not only in balance of payments deficits but also in a rise in external indebtedness. Either way, the continued pursuit of such a policy would have put pressure on the exchange rate. It was this growth in international indebtedness which lead Walsh, O'Leary and Leddin to say that "rather than looking at R (external reserves), it is more appropriate for policy to concentrate on N.R. (net external reserves) = R - G.F.B. (government foreign borrowing)" (11). This also fits in with O'Cofaigh's remarks on taking into account the financing of balance of payments current account deficits.

In conclusion, let it be said the monetary approach to the balance of payments offers a richer and more satisfying analysis of the balance of payments as opposed to approaches which overshadowed it in the middle of this century. What is more, we can say that the monetary approach preceded these other approaches, as noted in the section on early origins. As regards its application to the economy of Ireland, it is worth noting that the corrective action being undertaken at the moment, while in line with monetary considerations, is analysed largely in fiscal terms, in political circles at least. Whether this is due to ignorance of the monetary implications of policy, or an inability to articulate, isn't clear, but from our analysis it is clear that the monetary implications of policy are neglected at a cost.

Footnotes

1. "The Monetary Approach to the Balance of Payments", I.M.F.
2. Cantillon, "Entrepreneurs and Economists", Murphy Chapter 13.
3. "The Monetary Approach to the Balance of Payments", Frenkel and Johnson.
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SECTION 3
THE OPEN ECONOMY

Chapter 10 Is Ireland a Small Open Economy ?

Alan Cox & Mary Kelly

Ireland is clearly 'small' both in geographical and demographic terms (e.g. Ireland's population makes up only 1% of the European Community's total population). In this essay we wish to examine its 'smallness' in an economic sense and then to explore its 'openness' (the different ways in which it is linked to the international economy). Finally, there will be a brief discussion of the implications of the Single European Market post-1992 for a S.O.E.

The theoretical definition of economic smallness is that domestic supply and demand conditions have no effect on international markets, that domestic producers face perfectly elastic demand curves (i.e. no demand constraints), and are unable to influence the prices of their products. The price level in the small economy is hence exogenously determined - the Law of One Price holds for that economy.

In many ways Ireland fits this description. The domestic levels of supply and demand for oil will have no effect on the world oil market, for example. Many firms with downward-sloping demand curves are competing in highly specialized, or 'niche' markets. Even the prices of highly differentiated products such as Waterford glass will be largely given as they fit into broader categories.

But doubt has been cast by many in recent years on the view that Ireland's external economic environment is all important and given. The Law of One Price, although it empirically holds in the long-run, falls far short of explaining all short- and medium-term fluctuations in the Irish price level. Honohan showed that Irish demand levels are not solely determined by world demand levels. This is because of substantial trading costs in many markets. Yet it can be said that the traded sector in Ireland has a relatively important position, enabling Irish producers to break into many new markets, increasing their demand without changing prices. In the long-term the theoretical definition of smallness represents a good approximation to the actual state of the Irish economy.

An issue is whether Ireland's geographic and demographic smallness contributed to its economic smallness such as it is. Many small countries specialize in activities where they have a material advantage and where they can influence world prices, e.g. Saudi Arabia's influence on global oil prices or South Africa's power in setting the price of diamonds. From these examples it would appear that it is possession or non-possession of natural resources which determines the economic smallness of a country. Ireland's main natural resource is land, and here geographical size places limits on the quantity of this resource in a nation's possession. Thus Ireland's small geographical area plays a role in determining its economic size.

The degree of integration of the Irish economy with the international economy determines its 'openness'. Smallness and openness are not equivalent - Albania is small but not open, while West Germany is open but not small. However, size does influence the nature of an economy's openness - for an economy such as West Germany the term means an ability to influence economic activities in other

economies. For a small economy such as Ireland, openness is more likely to mean exposure to, and dependence on, the economic actions of foreign trading partners.

The openness of the economy can be examined by studying it linkages with the rest of the world. Three categories of linkage will be examined, namely trade linkages, factor linkages, and technological linkages.

A major difficulty in analysing trade statistics is that exports and imports are expressed as gross percentages of G.N.P (X/G.N.P. and M/G.N.P respectively). These gross figures ignore that exports may be comprised of imported components so that value-added is not properly measured. However, as no other trade figures are available we will use the conventional X/G.N.P. and M/G.N.P measures. Over the past twenty years these have grown from 25% to 60% and from 35% to 58% respectively. The long history of free trade with Britain may have laid the foundations for such an open economy which has been explicitly sought since the Economic Development Report of 1958. Ireland ranks only behind such exceptional city-states as Hong Kong and Singapore in international comparisons.

The second element of trade linkages is their quality. In Ireland's case the linkages are in production goods rather than consumer goods because Ireland's production is tied to that of the external economy. A small economy with minimal research and development would be unable to match the level and quality of imported technology.

Factor linkages can in turn be subdivided into labour linkages, financial linkages, and corporate linkages. The most obvious form of labour linkages is the flow of emigration according to relative unemployment and wage rate conditions between neighbouring countries. While family and other influences do constrain the level of 'openness' in the labour market, mobility looks set to increase even further as Irish people learn other European languages and adopt a more cosmopolitan outlook post-1992.

An obvious illustration of financial linkage is Ireland's high level of foreign debt (60% of G.N.P). The domestic stockmarket closely follows movements in London, New York and Tokyo. Interest rates must be comparable in real terms to level in other economies (when expected exchange rate fluctuations are taken into account) and membership of the E.M.S. signifies the relationship between the Irish Punt and the currencies of its major trading partners such as the German D-mark. The recent abolition of capital controls will further integrate Irish financial markets with international ones.

Corporate linkages are widespread, given that multinational corporations employ 86,000 of the 186,000 workers in the Irish manufacturing sector and account for 80% of Irish non-food exports. However many such firms may be said to be 'in, but not of, the domestic economy'. as they use mostly imported raw materials and export the bulk of their output. Similarly profit repatriation reduces the value-added to the Irish economy. The importance of M.N.C.s underlies the increasing openness of all liberal economies as different stages in a single production process are spatially dispersed internationally.

A major reason for encouraging foreign investment in Ireland is that a transfer of technology takes place. The huge financial costs of original R&D are beyond the resources of a small economy - domestic R&D is confined to adapting foreign technology to specific Irish circumstances (such as the unusual hardness of Irish water). Given that much technology is developed in an intra-firm manner, encouraging foreign investment here is a more efficient means of acquiring technology than expensive licensing agreements.

Ireland's membership of the E.C. and other international economic organizations such as G.A.T.T. and the O.E.C.D. illustrates that political linkages are ever more important in analysing Ireland's economic openness. Agricultural policy is largely set in Brussels and the 1992 project seeks to implement 300 directives to further harmonize the economic policies of E.C. member nations. One example is the role the E.C. played in regulating the Irish Distillers takeover battle in 1988. The transfer of economic sovereignty implicit in the Single European Act is not only a manifestation of Ireland's political openness but also raises questions as to the future level of openness of the Irish economy.

Two possibilities exist. First, a protectionist 'Fortress Europe' may emerge which may reduce trade with the United States and Japan. This would reduce Ireland's openness to non-European economies and may also mean a reduction in smallness, as domestic firms are more likely to possess market power in the European market than in the global economy.

However, the more likely scenario is a liberal single market with open trade linkages with the U.S and Japan. This will serve to further copperfasten the smallness and the openness of the Irish economy which we have attempted to articulate in this essay.

Chapter 3 The Methodology of Economic Research

Aidan Kane

"Economists, on the whole, think well of what they do themselves and much less well of what their professional colleagues do.....those who are mathematically inclined see others as in retreat from rigour. The others think those who manipulate symbols impractical. The statisticians believe those who prove points deductively to be dangerously intuitive. But, by their colleagues, those who are controlled by numbers are often thought cautious or even dull. It is exceedingly fortunate for the psychic health of the profession that inadequacy lies so uniformly with others. The situation in the other social sciences is said to be equally satisfactory".

- J.K. Galbraith
from "The New Industrial State" (1).

The scientific method

Methodology, normally caricatured as technical clutter or the analysis of analysis, will in fact be central to the results of any given activity. The choice of methodology will reflect the strength and weaknesses of a discipline. As far as economics is concerned, this is usually seen as a debate about the degree to which it merits the title 'science'.

Science defies glib definitions, but a useful starting point is given by Nagel: "It is the desire for explanations which are at once systematic and controllable by factual evidence that generates science; and it is the organization and classification of knowledge on the basis of explanatory principles that is the distinctive goal of the sciences" (2).

Therefore, whenever science asserts a claim, it also provides its own basis for testing that claim, i.e. a methodological scheme.

A crucial paradox arises from science's stated openness to consideration of alternative explanations which, at the extreme, would seem to undermine scientific norms. Thus, for example, Ragnar Frisch, after manipulating some matrices, can conceive of the possibility that what he calls "ultimate reality" is chaotic. The logical result of biological and scientific evolution would, he continues, "tend in the direction of producing a mammoth singular transformation which would in the end place man in a world of regularities. This is a crucial question that confronts us when we speak about an 'ultimate reality'. Have we created the laws of nature instead of discovering them?" (3).

Frisch can only resolve the worrying implications of all of this by appealing to pragmatism. He contends that, for the foreseeable future, the "search for regularities" would still be useful to man.

The net result, as noted by many observers, is that the term 'science' has developed an ideology of its own which has the effect of denoting the process of truth-seeking, if not the reality of truth itself (4).

The search for a standard methodology of economic research is a consequence of assuming that economics is, or will be, a science. That assumption is, of course, fiercely contested and what follows is an outline of the terms of this debate.

Economics as a social science

Some economists are obsessed with asserting the scientific nature of their endeavours. Another faction (admittedly less numerous) is, in equal measure, repelled by the same prospect. Both groups tend to use the achievements of natural sciences as a benchmark from which to draw their diametrically opposing views.

For a flavour of extreme economic science, Lord Beveridge's 1937 farewell address to the L.S.E. is illustrative. His view was that economics would be a science when enough facts were available and that, in 1937, economics had traveled, since Adam Smith, the same distance that physics had from Copernicus to Tycho Brahe, with a Newton sure to follow (5).

E.F. Schumacher, normally a restrained writer, resorted to vitriol when attacking this view, terming it "metaphysical heresy" (6). Schumacher, as an economist, thought economics was vaguely a branch of 'wisdom' and not an exact science.

Most of this rather sterile debate arises from the uncritical use of the natural sciences as a metaphor for certainty and truth. Nagel provides an impressive discussion of the strengths and weaknesses of the comparison, but a number of the most important considerations merit summaries here:

- If the natural sciences are exact, then perhaps physics has the strongest claim to the designation 'scientific'. And yet one survey of modern physics has as its central theme: "One of the best-kept secrets of science is that physicists have lost their grip on reality" (7).
- Natural sciences and social sciences, both, are confounded by the problem of observation affecting measurement. In economics, Goodhart's Law might be an example; Heisenberg's Uncertainty Principle would make the point for physics.
- The lack of opportunities for controlled experimentation is not unique to the social sciences; as Nagel says, astronomy has developed satisfactorily without undue manipulation of celestial bodies (8).

Further examples would only amplify the essential misconception at the heart of this debate.

Economics, for all practical purposes, has left the discussion at this point and proceeded to attempt to develop a scientific methodology. Econometric methods are at the core of this attempt and are thus dealt with in the following section.

The role of econometrics

The development of econometric methods, it is argued, represents a crucial feature of the progress of economics as a discipline as opposed to a meandering body of polemicists. Frisch sums up the case neatly: "As long as economic theory still works on a purely qualitative basis, without attempting to measure the numerical importance of the various factors, practically any 'conclusion' can be drawn and defended" (9).

From innocuous statements like this develop bitter academic disputes and econometrics has divisions aplenty. In one corner rests Koutsoyiannis with a schematic, cut-and-dried approach. Hendry counters with a methodology that claims to take account of the uncertainties assumed out of the Average Economic Regression.

It seems that these protagonists are using methodology for different purposes. Koutsoyiannis begins her stages with specification of the model in mathematical form. This model is merely a formalisation of the "general laws of economic theory"

(10). Subsequently, parameters are rejected if they are of the 'wrong' sign as indicated by theory, amongst other criteria. Hendry (as interpreted by Gilbert), attacks this as merely using econometrics to "illustrate theories which we believe independently" - a self-evidently useless procedure (11).

His alternative is to use quantitative techniques to discover theories and to advance economics as a science. However, Hendry's view of theoretical criteria is suspect. Gilbert summarizes it thus: "There may of course be alternative theories, but a satisfactory model must be consistent with at least one theory" (12). If this is a fair interpretation, the circularity of Hendry's position is appalling: econometric techniques generate a theory which is evaluated by reference to existing theories which includes itself. This is a purposeless process.

These considerations serve to illustrate the critical feature of any evaluation of econometric methodology: the purpose for which it is intended. Koutsoyiannis' and Hendry's approaches are essentially complimentary, and which one is appropriate in a particular case involves looking at what might be called the Theory Generating Process (or T.G.P.).

The T.G.P. depends, in the natural sciences, on physical reality, on cultural bias, and normative judgements about what is important. In the social sciences, theories may be more influenced by the normative elements in this scheme. But, as Hendry states, "Science is a public process" (13). In this context, this would imply that, for the social sciences, evaluation criteria cannot be restricted to statistical and theoretical considerations alone. The decisive factor will always be an evaluation of relevance to public policy. This idea is explored later in the next section.

Evaluation criteria

Even assuming full knowledge of a catalogue of econometric techniques, economic research does not end with the estimation of parameters (14). Theoretical validity implies not just congruence with data but also explanatory power. Thus, correlation must not be equated with causality. The theorist's skill is to outline mechanisms through which one factor influences another to the extent expected and/or confirmed by any model. Thus, spurious correlations should be rejected.

Another major problem is that it often seems that the availability of useful data is inversely related to the theoretical rigour required. Thus, a critique of data sources is crucial.

The range of statistical techniques available to econometricians serves to quantify the relative importance and stability of the concepts being measured. The usual caveat entered here is simply aimed at an intelligent use of such techniques. The problem, however, is hinted at by Koutsoyiannis who refers to them thus: "their full understanding will be possible only after reading the whole book" (15).

These considerations are routinely treated in any number of textbooks. The criterion of policy relevance is less amenable to cut-and-dried exposition and merits some justification.

The division of sciences into branches is arbitrary, but based on pragmatic grounds. Marshall's famous characterization of economics as "the study of mankind in the ordinary business of life" throws some light on the matter in hand. In the natural sciences, the operative goal is to find universal laws, while practical applications are useful, but not central. Social sciences, however, in the real world, will always be judged, not on considerations of theoretical rigour, but on policy relevance. Even at this level of generalization, if economics does not

advance "mankind in the ordinary business of life", it will be derided (16).

This is the root of the problem with economic research, as evidenced by the breakdown of the large empirical macroeconomic models in the '70's. The problem seems to be cumulative. David Stockman's account of Ronald Reagan's indifference to elementary economics makes sad reading, for example (17). Indeed, in Ireland, did it not take a long time before the political system began to act on what economists claimed was the "simple arithmetic of the national debt"? (18). "Attempting to deal with these problems can lead theory in interesting directions. For example, a major experiment into insights on economic problems from the natural sciences is in progress at the present in the United States, arising from the failure of economists to predict Third World debt" (19).

All of this does not mean that questions of relevance can be uniquely determined. It does suggest that the cost of ignoring them for economics can be summarized as Leontief did recently: "Page after page of professional economic journals is filled with mathematical formulas leading the reader from sets of more or less plausible, but entirely arbitrary, assumptions to precisely stated but irrelevant conclusions" (20).

Metaphysics vs pragmatism

Two further related considerations may be useful. Firstly, it is perhaps self-evident that, as a practical matter, the publication of every set of O.L.S. regression results cannot become the occasion for a vast and indeterminate metaphysical discourse. Many of the issues dealt with explicitly above (and many more besides) are implicitly settled in each research programme and fall into the category of professional norms. Secondly, it is surely a mistake to see the methodological issues as ones that must be settled completely before any attempt at rigorous research begins. Both are processes that develop in tandem, each strengthening the other. Indeed, if a perfect methodology was thought to be a prerequisite for useful research in the natural sciences, we would undoubtedly be, at present, avidly awaiting the discovery of fire.

Footnotes

1. The passage is taken from "An Addendum on Economic Method and the Nature of Social Argument" in Galbraith's second (1972) edition.
2. E. Nagel, "The Structure of Science" (1961), p.4.
3. R. Frisch, "From Utopian Theory to Practical Applications: the Case of Econometrics" (1970), reprinted in American Economic Review, December 1981.
4. D. Hendry, "Econometrics - Alchemy or Science", Economica, November 1980. He says of science: "The present mental associations of objectivity and progress ensure that simply using this prestigious epithet confers an air of authority."
5. An extract from this address is in R.G. Lipsey's "Positive Economics" (6th edition).
6. See "Small is Beautiful" by Schumacher (1973), especially Chapter 15, entitled "A Machine to Foretell the Future?". This reference is to Colin Clark's 1941 book "The Economics of 1960".
7. N. Herbert, "Quantum Reality", Century Hutchinson (1985), p.16.
8. Nagel p.450.
9. Frisch p.6.
10. Kout-

soyiannis, "Theory of Econometrics", p.12.
11. C. Gilbert, "Professor Hendry's Econometric Methodology", Oxford Bulletin of Economics and Statistics, pp.284-285.
12. Gilbert p.289.
13. Hendry p.388.
14. e.g. in Kennedy's "Guide to Econometrics", p.40: "An econometrics textbook can be characterized as a catalogue of which estimators are most desirable in what estimating situations".
15. Koutsoyiannis, p.17.
16. Dale Poirier deals with related issues in the context of radical economics. Thus, for example: "The context (if any) in which to evaluate the reasonableness or realism of assumptions depends on the purpose at hand and hence is normatively determined". ("Econometric Methodology in Radical Economics", American Economic Review, February 1977).
17. "The Triumph of Politics" by David Stockman (1987). See especially Chapter 12, " The President and the Pony" and "Postscript: Exactly Who Shot John?"
18. e.g. see "The National Debt: Implications for Fiscal Policy" by J. O'Leary in the Irish Banking Review, Autumn 1987.
19. See the report on pages 81-82 of Scientific American, December 1988. The project was begun because Citicorp had to write off $15bn in loans. Kenneth Arrow is a participant.
20. Leontief is quoted in "The Economist Economics" by R. Pennant-Rea and C. Crook, Pelican, 1986, p.19.

Chapter 2 The Reification of Economics

Eamonn McCarthy

First, I should like to point out that this is not an academic essay but an observation about:
a) the presentation of economics as 'scientific',
b) the influence economics has exerted on bureaucracy and governments, and
c) the consequent effect it has on the lives of the entire population.
This article principally refers to economics as it is presented in Ireland and perhaps more generally in the Western world.

Economics is a social science. It deals with the decisions of individuals, companies and governments. I do not wish to enter the age old debate of whether social sciences can be truly called 'scientific', or by what definition of science they may be so called. However, it appears to me that the discipline of economics has focussed more on statistical and mathematical developments than on the human factor in economics. Economics departments spend more time and energy, it would appear, on learning and developing mathematical models of behaviour, particularly at a macro level, than on the human behaviour these models must replicate.

This has increased the public perception of economics as 'scientific', 'correct' and powerfully predictive, but at the expense of true representation of the individual units of economics, namely producers and consumers. The conclusions of economic theories or models are most often presented to the public as 'fact', without a full explanation of the assumptions about human behaviour upon which these theories are based being made known. This might be excused as the methodology of economic research is mainly mathematical and therefore beyond the comprehension of 'Joe (or Joan) Public'. However, ordinary people do know about the economic decisions they make, and can comprehend quite well the human behaviour basis of economics. Moreover for an economic model to be successful in the terms of the discipline it must necessarily exclude a number of factors involved in decision making as 'less important' and operationalize or objectify a small number of 'major' factors. If Joe/Joan Public was more aware of the limits of such modelling s/he would be better able to challenge the basis on which economic conclusions are deduced and thus the theories to which they give rise.

Another factor which gives rise to the public perception of economics as 'objective' is the apparent consensus that often exists within the discipline on the relative importance of different theories. Keynesian theories about the importance of aggregate demand and how this can be stimulated to provide full employment appeared to obtain broad consensus agreement within the discipline in a relatively short time. Now, for many the Keynesian model can be largely disposed of while Friedman secures considerable support within the discipline. The only question for economists would now appear to be how we might best achieve the free market model in practice. It is a sign of sterility and insecurity in the discipline that there is not more dissension and debate about theories, their benefits and faults.

It is further interesting, in view of the prevailing consensus among economists, that they can do such a U-turn on theory as the one from Keynes to Friedman without any apparent loss of face, and without losing its 'objective' status in public

eyes. I believe this may indicate a symbiotic relationship between governments and the discipline of economics wherein each relies on the other to validate its existence and practice. It is considerably beyond the scope of this article to question whether the 'needs' of government determine which economic theories gain precedence or whether it is the discipline of economics which has such a strong influence over government. Either way, the result, in the Western world, would appear to be that governments seek to implement the prescriptions of the dominant economic theory and present this to the electorate as 'scientific' rather than as a more political position. The dominant economic theory has a tendency to be followed by government in a manner totally disproportionate to its ability to predict the outcome of its prescribed economic policies.

Finally, in order to elaborate my argument, I wish to attempt a summary criticism of the current dominant economic paradigm, i.e. the free market. Friedman argues that economic freedom is an essential prerequisite for political freedom; that both parties to an exchange involving goods or services can benefit so long as co-operation is strictly voluntary. He argues that prices perform the functions of transmitting information, providing incentives for least costly production, and determining distribution, i.e. who gets how much of the 'production cake'. Price mechanism and supply and demand are described as mathematical objective laws. However this is based on a number of ideological value positions, e.g. "equality of outcome is in clear conflict with liberty", and that "inherited inequality of property is no different theoretically than inherited inequality of talent but that property is easier attacked or 'redistributed'". These statements imply two things: firstly that liberty as a value is more important than equality; secondly that inequality of outcome is due to inheritance rather than environment. Neither of these is scientifically proven but rather both are political or value choices with which one may or may not agree. Further, the 'laws of supply and demand' only recognize peoples' needs where they are backed by money.

Friedman's answer to poverty would appear to be the introduction of a "reverse income tax" for those totally unable to provide for themselves. It is very doubtful whether this is operable in practice or not, so Friedman's model does not provide at all for the poor in terms of capital, skills, education, etc. I believe that the free market model is based implicitly on an acceptance of poverty; and that poverty indeed serves functions in a capitalist economy. However, neither economists nor governments acknowledge this, but rather expound it as a 'scientific' theory leading to freedom and relative equality of all. Some of the functions of poverty were outlined by Gans as ensuring that:

i) dirty, menial and undignified work gets done;

ii) the poor buy shoddy stale and damaged goods and services subsidizing inefficient production or provision of services;

iii) the poor can absorb the economic and political costs of change or growth in society.

The free market model does not explicitly address whether the economic power of different groups is fair or desirable but rather assumes this to be given and natural, a result of differences of ability. However it has been clearly shown that positive discrimination can change outcomes. They are not entirely genetic or natural but also environmentally determined. In other words the free market model generates differences of power between people not based on what is natural or genetic, but which are environmentally determined where the prevailing economic system is part of the environment.

What I have sought to argue in this article is, firstly, that the discipline of economics has apparently adopted the discipline of mathematics as an appropriate role model to follow. This has been to the detriment of the social aspect of human behaviour in economics. This has allowed economics to present as 'fact' models of economic action which are relatively poor replicas of real situations. Secondly, the discipline of economics seems to have identified its future as lying with serving the 'needs' of bureaucracy and government and this has led to ideological and sterile theory replacing constructive debate in economics departments and outside academia. Thirdly, this consensus in the discipline seems oblivious to the human suffering which it can cause through its collusion with government in the reification of theory and its implementation as 'objective' policy, and to its moral obligations in this area.

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SECTION 1
THE ROLE OF ECONOMICS

Chapter 1 The Dismal Science

Jonathan Wright

Introduction

It is my intention to argue in this essay that in a world of ceaseless change in which an infinite number of variables relevant to the economic system interact with each other, and with time and uncertainty in unfathomable ways, such as that in which we live, that the role fitting for economics today is greatly exaggerated, and indeed in some areas may be non-existent. If there is to be a role for economics, its weak base must be fully recognized. Indeed, although some of the problems in economics could potentially be overcome in the distant future, the forecaster has an impact on the variables he forecasts in economics that makes at least some of the problems with economics inherent, not just a function of our current ignorance. I am following in particular the arguments of Shackle and of the Austrian school, the key postulate of which is that in economics there is an interaction of the present and expectations about the future that makes the system highly unpredictable and renders a positivist methodology inappropriate.

I propose to look at the aggregation and quantification of variables, at objectivity, at the meaning of equilibrium in economics, at how expectations affect current variables in such a way as to generate self-fulfilling prophesies, and to argue that these issues collectively render much of the economic system chaotic, perhaps even in a technical sense. Devoid of a strong theoretical base, as this leaves the subject economists try to extract more information from the data than it is possible to do; this leads to the successive inference problem discussed in the seventh section. Before concluding, I shall compare the problems of economics to those of the natural sciences.

The perceived failings of economics render it a subject in crisis. The response to this crisis is to set ever more rigorous standards for 'proof' of theories, to a point where a theory is never 'accepted' simply 'not rejected'. But in some sense acceptance and rejection are two sides of one coin; for example, in regression rejecting the hypothesis that a parameter is zero is accepting that it is significant. While ever greater rigour can be of great value in an already scientific subject, if we regard economics as inherently unscientific, it is inappropriate, and simply an attempt to paper over much deeper problems.

Economics; the aggregation of the incompatible, the quantification of the unquantifiable" . (Shackle) .

Although much modern economic research has been devoted to looking at the component parts of macroeconomic variables rather than at the variables themselves, and to building up macro theory from micro theory; in some sense this approach is bogus. For simplicity it still requires the micro variables to be uniform and homogeneous so that macro theory can be built up from them. No theory can simultaneously come near to doing justice to the diversity of the component parts of macro variables and yet represent a reasonable simplification of reality. If we try to do so we end up with variables which we do not, and cannot, understand, and then we enter into a senseless debate which asks which components of these

variables are dominant, for example with the concept of money supply.

The second, and not unrelated issue, is whether economic variables can be adequately quantified. The Treasury committee has recently expressed the view that economic statistics in the United Kingdom are so poorly constructed as to make them worse than useless. The United Kingdom has seen twenty-four definitions of unemployment since 1979; changes in these definitions are clearly based on political grounds alone. United States National Income statistics are regularly, almost systematically, revised for years afterwards; and these are not small alterations but changes that alter the whole meaning of the statistics. Northern Ireland G.N.P. figures for the whole of the 1980's were recently revised from a position of a stagnant economy to one booming at the same rate as the rest of the United Kingdom. The impossibility of quantification in economics does not merely lessen its power, it means that it provides us with a dangerous illusion of knowledge in relation to the state of the economy.

Objectivity in economics

The ambivalence of truth is an ancient theme which can be traced back to the following paradox discovered by the Ancient Greeks. Suppose two statements are written down. Statement A is that "statement B is false", and statement B is that "statement A is true". Now if statement A is false, B is true and A is true. But if statement A is true, B is false and A is false. So it is not possible even for such simple statements to be either unambiguously 'true' or 'false'.

Economics as a behavioural study is rooted in psychology. Many would accept that the study of the human mind has a complexity beyond the power of man to model, at least given his current level of understanding. But *a fortiori* this is then true of economics. The vast surfeit of variables relevant to economics is such that we cannot go beyond scratching its surface in our understanding of it. Combined with the difficulty of aggregating and quantifying economic variables, this makes economics an utterly subjective subject, unworthy of the name 'science'. In modelling economies, there is far too much that we need to know and far too little that we actually do know.

Kuhn, writing more in relation to the natural sciences, claimed that where objectivity is lost it is replaced by a fixed, narrow and blinkered view of the state of nature known as a Kuhnian paradigm, a "pair of spectacles through which all events are observed" (Green). But although Kuhn's paradigms were dreamt up in the context of the natural sciences they are of far more significance in economics. Any subjectivity combined with such a paradigm becomes amplified, and often attains an ideological tone. So the subjectivity is reinforced by ideology and by a blinkered view of the world around us. Neo-Classical/neo-Keynesian models, the Marshallian supply and demand analysis, or the concept of the individual as the basic unit of society are all examples of these paradigms. They exist not just in normative areas of welfare economics but throughout economics and even in the natural sciences. Values play a dominant role in economics which is irreconcilable with the notion of objectivity in economics.

Can one talk of equilibrium in economics?

When the economist poses this question he is generally concerned with proving the existence of equilibrium in response to a single shock. What I am trying to ask is quite different, namely whether the concept of long-run equilibrium is one capable of any meaning in economics. A point which is theoretically devastating

to this concept in economics, although perhaps of little practical significance, is that time is not a continuum in economics as it is in physics and as is implicit in equilibrium theory. One can talk of the position of a particle at a point in time; one cannot talk of the expectation of an economic agent (for example) at a point in time, because the formation of his expectation spans a period of time. "What I call my present is really my attitude to the immediate future." (Bergson). Another flaw in equilibrium economics is that it implicitly assumes some parameters to be fixed; none are in reality. Finally, as the economic system is in a state of constant flux, the criterion of equilibrium theory which is of most practical importance is that for equilibrium to have any meaning, changes in independent economic variables must be followed by periods of stability in them, an assumption patently absurd in the world of constant change in which we live.

Self-fulfilling prophesies

Expectations interact with the present in economics in a way that is clearly inconceivable in the natural sciences. For the economic agent an expectation is generated primarily for individual profit and will be acted upon, immediately, for individual profit. The most obvious example of this is in stock market behaviour but it also applies in more economically significant areas; like in the speculative demand for money, commodity markets and foreign exchange markets. By acting on the expectation the agent helps to ensure that it comes true. These markets are driven by expectation, at least in the short-run. But this means that it is impossible for the average agent to predict any shifts in price in advance, inherently impossible, not just requiring a depth of knowledge beyond that which really exists. Forecasting in this context is a positional game where each individual tries to outguess the market; as an individual he may succeed, but the agents in the market collectively cannot, because of the impact of his forecast, forecast feedback. For the economic researcher this means that his forecasts can only conceivably bear any nonstochastic relationship to reality if some agents do not believe him. These markets have such a key role in the economic system that if agents cannot forecast them, their scope for short-run forecasting is very limited indeed. Long-run forecasting would run into this problem less, but it is widely accepted that our general understanding of economics limits how far into the future we can hope to see.

Chaos

For Shackle the economic system is one which intersperses "its moments or intervals of order, assurance and beauty with sudden disintegration and a cascade into a new pattern...".

Shackle here is hinting at the idea of an erratic economic system in which tiny changes in parameters lead to vast changes in the state of the system; one which is, for various reasons, beyond our power to model. Austrian economics and the work of Shackle suggests that the economic system is chaotic in a strictly non-technical way.

Modern mathematical analysis however offers us a means for rigorously exploring the phenomenon of infinitesimal changes in a control variable leading to vast changes in the state of a system; namely Chaos theory. The idea of the self-fulfilling prophesy might be amenable to such analysis. It is a close analogy to the idea of a camera pointed at a screen displaying an image of what is seen by the camera, a classic example of Chaos seen in physics. In this way markets display

expectations and are governed by expectations. Although Chaos theory was initially applied primarily to the natural sciences, it has recently been used extensively in economics. The chaotic system, because it is so sensitive to changes in the control variables, will display purely random behaviour unless we know precisely the relationships between variables governing the system. Hence, if the economic system is chaotic it is inherently impossible to model, short, of course, of the underlying deterministic pattern being found.

Successive inferences or 'degrees of freedom' problem

Much economic research entails search procedures to find the explanatory variables 'best' in terms of some criterion (e.g. significance or coefficients of determination) in a set of data for explaining some phenomenon. This method is known as data-mining. Data-mining is not just associated with elaborate search algorithms; data is being mined as soon as the researcher starts comparing different models on one set of data. Indeed even if all economic researchers performed only one test on each set of data, the problem would still not be solved, because, collectively, the researchers would be drawing several inferences from one data set. The research process itself is a subtle search algorithm in which data-mining is conducted on a huge scale. It is hence a very widespread practice in econometrics.

The problem with such procedures is that the probability of committing a Type I error is no longer equal to the significance level. If b is the significance level and n independent inferences are drawn it is $1-(1-b)^n$. So ultimately a type I error is sure to be made. More loosely, a relationship is bound to be discovered in a set of data by chance alone if one continues searching long enough.

This is a simultaneous inference problem generally known as the 'degrees of freedom' problem. This is something of a misnomer because the problem occurs even if the population variance is known and degrees of freedom cease to be a feature in the analysis, although, obviously, in a t-distribution successive inference causes a loss of degrees of freedom. It can be corrected (strictly over-corrected) for by a generalization of the t-distribution, but only if all observations are independent both of each other and of the variance. In general, statistical tests have not been designed to overcome it. As much economic research entails data-mining, one must therefore ask if many econometric findings are more than the product of sampling error. The standard response that "loose interpretation of statistical rules is sometimes necessary" (Koutsoyiannis) sits ill with the claims economists make to have a scientific methodology. It is the root cause of why economics can pretend to explain what has happened, but is a very poor forecaster of things to come.

"Of degree not of kind"

The classic defence of economics and of its imprecision is that differences between it and the natural sciences are 'of degree not of kind', and that only differences of kind ought to be taken into account. The logical conclusion of this argument is one of two absurd positions: either to a position of accepting all theories in all fields of learning without questioning their accuracy or to a nihilistic position where because of the perceived ambivalence of truth, one cannot even make an assertion about the criteria one sets for acceptance of theories.

A more flexible criterion is needed for discussing imprecision in fields of

learning. It is dangerous to get carried away with abstract thinking in this context because it is observed predictive power that is the crucial measure of the worth of any of theory. Newtonian mechanics may have been theoretically superseded by the work of Einstein, but at the speeds at which bodies generally move it is an extremely good approximation and one that can never be approached by any economic forecasts. In the same way, for some, Keynes superseded classical economics but the error in both is observed to be on a totally different scale to that in the physics of Newton or Einstein. Differences of scale must be considered as well as differences of kind; doing so elevates physics not to being in a position of absolute truth, but of great power to mankind, while damning economics to be the twin of astrology, psychology, or crystal-ball gazing.

Conclusion

Vast spheres of economic activity are chaotic and inherently impossible to model, and even those which are not entail such a complex interaction of variables that they are beyond current human comprehension. Faced with such as weak theoretical base, the economist leans excessively on his data (especially in the case of successive inference) which gives an illusion that an understanding of economic systems has been attained, an appearance that is both misleading and dangerous.

Criticism of economics does not, however, put anything else in its place. Although woefully inadequate, economic forecasts generally tend to be better than a random walk. Since economic forecasts are implicit in all economic decisions, this represents a strong defence for economics. But for economics to have even this limited role people must recognize its limitations. It is in human nature to replace uncertainty with a false certainty even at enormous cost, where one can do no better, like the drowning man clutching at anything he can get hold of. The forecasts of economists are generated at great expense and then treated as gospel. Pursuing a target in relation to some unquantifiable entity becomes uppermost in the minds of policy makers. Markets hang on forecasts of appalling inaccuracy and seem to treat them as knowledge, not guesswork. Economic indicators are not thought of as rough guides but as precise measures and are pursued like "looming phantoms" (Shackle). If its limitations and imprecision were recognized economics might have a considerable role, but if its limitations are ignored and its imprecision is almost raised to the status of a virtue; its fitting role in modern society must be very limited. Paradoxically it is a sceptical and almost cynical approach towards economics that is essential for it to have any serious position.

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