

Profitability, Investment and Employment: A Survey of Recent Developments in Medium-Term Growth Theory

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Abstract: This paper reviews the recent theoretical literature on the relationship between profitability, investment and employment in an attempt to clarify the roles of demand-management, supply-management and incomes policies in stimulating employment and growth.

I INTRODUCTION

Economic theorists, working within the confines of the traditional distinction between short-run and long-run analyses, have until recently paid little attention to the impact of real wage developments on capital accumulation and growth. Macroeconomists have regarded investment primarily as a component of aggregate demand rather than as the process through which the stock of productive capital is changed over time, while growth theorists have for the most part been concerned with flexible price full employment situations within which the relationship between conflict over income shares or levels and the capital accumulation process cannot be studied.

The supply shocks of the 1970s have convinced many economists of the desirability of relaxing this traditional dichotomy. The attempts by all groups in society to maintain their income levels hindered the structural adjustments required by the massive relative price changes of this period and drew attention to the need for an analysis of the determinants of capital accumulation in disequilibrium situations.

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The purpose of this essay is to survey the expanding literature in this area, with special emphasis placed on the consequences for capital accumulation and employment of frequently encountered aggregate demand and supply management policies in small open economies with sustained real wage stickiness.

In the following section I review briefly some recent evidence on the failure of real wages to move flexibly in such a fashion as to secure full employment without government intervention. The evidence suggests that the impact on capital accumulation can be quite dramatic. The remaining sections survey the literature on the effects of government policies in such situations.

II A GLANCE AT THE EVIDENCE

The papers of Sachs (1979)¹ and Branson and Rotemberg (1980) present theoretical and empirical work designed to shed light on the policy conflicts that emerged between the United States, on one side, and Western Europe and Japan, on the other, during the course of the recession that began in 1974. The US argued for expansionary policies led by countries in a strong current account position, a prescription to which the other OECD countries were reluctant to agree. The explanation of the conflict put forward in these papers is that labour markets in Japan and Europe tend to display some degree of real wage exogeneity (with respect to the conventional short-run macroeconomic system), while those of North America exhibit nominal wage rigidities because of the existence of long-term overlapping wage contracts, so that expansionary demand-management policies are more likely to be successful in Canada and the US.

Sachs constructs a rough measure of disequilibrium movements in real wages by comparing the actual growth rate of the real consumption wage (the nominal wage divided by the CPI) with the "warranted" rate, that which maintains constant factor shares in GDP. The major determinants of the warranted rate are trend productivity growth and changes in the terms of trade.

As can be seen from Table 1, there is a striking difference between the behaviour of the North American economies and the other five major OECD countries. In both sub-periods, 1969-1973 and 1973-1975, the actual rate exceeded the warranted rate for Japan and Europe, while the rates were broadly similar or the situation was reversed for North America.

The real wage gains made in Europe in the first period he attributes to such factors as a catch-up phase following the incomes policies and high profits of the mid- to late 1960s, institutional gains in union power and coverage and the ratification of these real wage gains by expansionary government policies in the early 1970s.

1. Sachs (1983) updates his earlier study but his more recent work is less relevant to the subject matter of the present paper because the issue of capital accumulation is ignored.

Table 1: *Annual average changes, in per cent*

<i>Country and Period</i>	<i>Warranted Real Wage</i>	<i>Actual Real Wage</i>	<i>Net Capital Stock in Manufacturing</i>
Canada			4.4(1962-70)
1969-73	4.2	3.0	4.7(1970-73)
1973-75	4.7	4.8	4.8(1973-77)
France			6.4(1962-70)
1969-73	5.7	5.9	8.3(1970-73)
1973-75	4.2	5.9	7.5(1973-77)
Germany			8.6(1962-70)
1969-73	7.1	8.2	7.2(1970-73)
1973-75	5.2	5.7	4.0(1973-77)
Italy			5.1(1962-70)
1969-73	8.9	9.8	4.7(1970-73)
1973-75	3.0	7.0	3.9(1973-77)
Japan			14.0(1962-70)
1963-73	9.1	11.6	15.2(1970-73)
1973-75	1.0	5.3	9.3(1973-77)
United Kingdom			4.3(1962-70)
1969-73	4.2	4.6	3.8(1970-73)
1973-75	2.9	6.3	2.3(1973-77)
United States			2.7(1962-70)
1969-73	2.7	2.7	2.7(1970-73)
1973-75	0.9	-0.3	2.8(1973-77)

Source: Sacks (1979, Tables 5 and 8).

For all countries except the UK and the special case of Canada (for which, as an exporter of primary commodities, the warranted rate rose) the actual growth of real wages slowed along with the warranted rate during the 1973-1975 period but the slowdown outside North America was insufficient to preserve factor shares.

This evidence, then, suggests the possibility of exogenous movements in real wages and of real wage stickiness in the face of recession.

Branson and Rotemberg (1980) go even further in their assertions about the latter possibility. They estimate an equation designed to isolate the determinants of wage changes for five of the seven major OECD economies (Japan, Italy, Germany, the US and UK), during the period 1961-1978.

Nominal wage stickiness is defined by them as the situation where current

nominal wages depend on past nominal wages and current labour market conditions, while real wage stickiness occurs when today's real wage depends on past real wages and current labour market conditions.

They find that nominal wage stickiness is relevant for the US while the real wage, by and large, can be said to be sticky in the Japanese and European economies.

Another important finding of theirs is that the coefficient of the labour demand variable (GNP) is significantly positive in all countries for the full period but insignificant for 1971-1978. Thus wage movements, they argue, became less sensitive to tightness or slackness in the labour market during the 1970s.

There is, therefore, broad agreement that real wages adjusted only sluggishly in Europe and Japan, in contrast to the situation in North America, and that this difference is crucial for the conduct of economic policy.

Sachs (1979) deals with the impact on capital accumulation by relating changes in rates of investment across countries to corresponding wage developments. Rates of growth of the net capital stock in manufacturing are also shown in Table 1 above.

For the 1970-1973 period, during and following the "wage explosion" discussed above, Germany, Italy and the United Kingdom experienced reduced investment rates, while investment was maintained in North America. Japan had a high rate of growth of the capital stock in 1970 and 1971 but this fell in 1972 and 1973 to around 12.9 per cent per annum, below the 1962-1970 average. Of the European countries only France, where the warranted and actual growth rates of real wages were about equal during this period, displayed an increase in investment.

For the 1973-1977 period investment fell in all countries other than the United States and Canada.

The effect of disequilibrating real wages movements on capital accumulation is brought out in even starker detail by Halttunen and Warner (1979), whose findings Branson (1979) summarises as follows:

They compute the capital stock that would be required to employ the full-employment labor force for ten major OECD countries, given the trend growth in real wages since 1973. The computed stock is then compared with the actual capital stock, and the percentage shortfall of actual below full-employment capital stock in 1979 is labeled the "capital gap." These numbers run to 25 per cent for industry in Japan and the Netherlands; 20 per cent in France and Germany; 15 per cent in Belgium, Luxembourg, and the United Kingdom; 10 per cent in Canada, Sweden, and Italy; and 5 per cent in the United States.

III A THEORETICAL FRAMEWORK

It was argued in the previous section that real wage stickiness or exogeneity is an empirically important phenomenon which can be of such persistence that the resulting impact on capital accumulation should not be ignored.

A simple diagrammatic mode of analysis serves to show how this phenomenon can be incorporated into macroeconomic theory.

Figure 1 shows a conventional transformation curve (PP) describing the maximum combination of two goods, T and N, that can be produced with full employment of the existing capital stock and the economy's labour resources. PP is bow-shaped given sector specific capital stocks and intersectorally mobile labour. Neo-classical growth theories conventionally deal with economies situated on this outer frontier.

Now consider a rigid real wage, specified in terms of a consumer price index which includes both goods, such that the nominal wage exceeds the value marginal product of labour at each point on PP. The real wage, relative to the existing stock of capital and the degree of technological development, is now too high for full employment to prevail, and the economy can be said to be cost-constrained. The *constrained* transformation curve CC, along which the nominal wage and the value marginal products of labour are equalized, lies totally inside

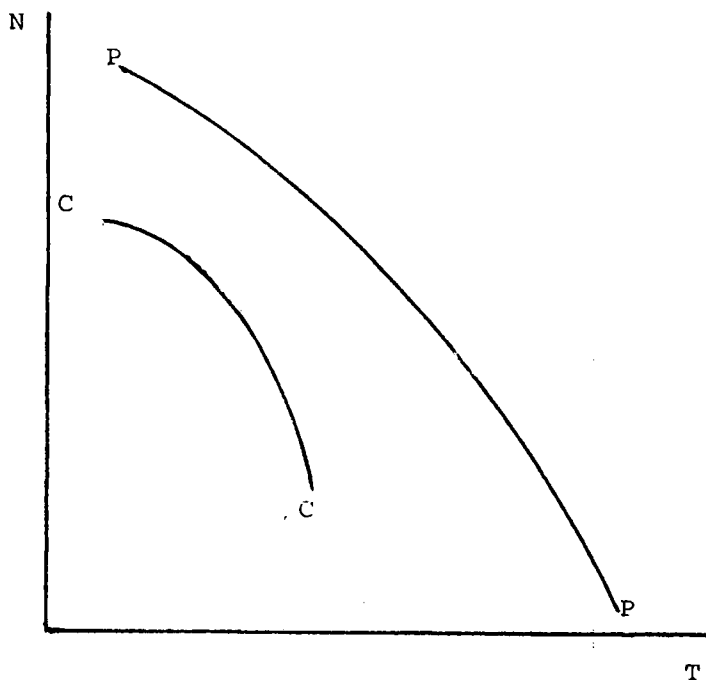


Figure 1: *Transformation Curves*

the full employment locus, and, with sector specific capital, is also bow-shaped. Along this locus lies the region of classical unemployment, in Malinvaud's (1977) terminology. The economy remains on this inner frontier if the only rigidity is in the level of the real wage but can move inside it if there is downward rigidity in nominal wages and prices.

The region inside CC represents a situation of Keynesian unemployment, with labour cost below its value marginal product. Employers, however, do not make use of this seemingly profitable opportunity to employ more labour because of the difficulty of increasing the level of sales. Aggregate demand is deficient and conventional Keynesian policies can be used to expand production and employment. Indeed, if the marginal propensity to consume out of labour income is sufficiently high, an increase in the real wage will have the same effect (see, e.g., Neary (1980)). However, demand policies can drive the economy only up to or along CC in the short run, since on that curve, firms are producing the quantities that maximise profits given the rigid real wage and the existing capital stock.

IV DEMAND-MANAGEMENT POLICIES IN A COST-CONSTRAINED ECONOMY

Even if the economy is on CC, expenditure policies may raise employment by inducing a change in relative prices and causing a movement along the curve. Because the real wage rigidity is based on a consumer price index, a change in relative prices causes real product wages in each sector, and thus also production levels in each sector, to move in opposite directions.

Helpman (1977) and Rødseth (1979) have analysed these effects for a two-sector small open economy in which the price of tradable commodities (T) is determined exogenously on world markets while the price of non-tradable commodities (N) is determined by domestic supply and demand conditions. They show that an increase in government expenditure on non-tradables or a reduction in taxation (which stimulates private-sector spending and so raises the relative price of N) raises employment in the non-tradable sector and is more likely to increase overall employment the greater that sector's relative size and elasticity of labour demand, and the lower the share of non-tradables in the consumption bundle upon which the real wage rigidity is based.

Such policies also effect capital accumulation, so that the constrained transformation curve shifts and changes shape over time. The papers cited above deal only with the short run and do not consider this process.

The assumption of a fixed stock of intersectorally mobile capital is often regarded by international trade theorists as a longer-run analogue to short-run models with sector specific capital (e.g., Mayer (1974), Mussa (1974, 1978)), so

that one might expect another paper of Helpman's (1976), which adopts this assumption, to shed light on the medium-term effects of these fiscal policies.

As long as the aggregate capital stock is sufficient to meet demand, firms do not face production bottlenecks if both capital and labour are intersectorally mobile and the economy is operating at less than full employment. Changes in demand, therefore, do not affect unit costs (i.e., firms remain on their long-run average cost curves) and production expands or contracts at constant prices and constant input-output ratios.²

Total employment expands as the pattern of output shifts towards the labour-intensive good, since the contraction of the capital-intensive sector releases less labour than the expansion of the labour-intensive sector requires to maintain its initial capital-labour ratio.

Helpman's (1976) results are therefore that an increase in government spending on non-tradables or a reduction in taxation (which stimulates private expenditure) induces an expansion of the non-tradable sector, with the overall effect on employment depending positively on the relative labour intensity of non-tradable production.

By the standard interpretation of the relationship between the short-run and the Heckscher-Ohlin (intersectorally-mobile capital) models, the short- and medium-term effects of fiscal policies are quite similar. Only a limited amount of information about the structural features of the economy is required to predict both the short-run and the longer-lasting effects on employment of demand-management policies.

V PROFITABILITY AND SAVING: LONGER-RUN EFFECTS OF DEMAND-MANAGEMENT POLICIES

In the Heckscher-Ohlin analysis profitability affects only the sectoral distribution of the capital stock. Neary (1978a) has suggested a more realistic model of medium-term resource allocation; one in which new investment occurs in the expanding sector while the declining sector contracts through a reduction

2. The price-cost relationships, assuming constant returns-to-scale technologies, are

$$p_n = a_{ln}w + a_{kn}r$$

$$p_T = a_{lT}w + a_{kT}r$$

where the a_{ij} terms represent the input-output ratios in each sector, and wages and rental rates are equalised across sectors by factor mobility. With a wage rigidity of the form:

$$w = \Phi(p_n, p_T)$$

all relative prices are determined independently of demand. Thus sectors expand or contract at constant input-output ratios. The transformation curve is in this case a straight "Rybczynski" line.

in the rate of replacement of depreciating capital equipment. Since there is in this scenario no requirement that the aggregate stock of capital remain constant throughout the adjustment process, the constraint on the amount of physical capital that the economy can accumulate over a certain period of time must be specified. This constraint depends on the international mobility of *financial* capital.³

Aggregate investment is independent of aggregate saving if financial capital is perfectly mobile across international frontiers since only those investments which yield the prevailing international rate of return are undertaken, and these can be financed from abroad in the event of a shortfall of domestic savings.

If financial capital mobility is less than perfect, however, the availability of finance constrains the level of investment, and aggregate saving is in this case an important determinant of employment and growth.

The effects of fiscal policies in such a savings-constrained economy have been explored by the present author in two recent papers, Barry (1983, 1984b). The second of these shows that the sector specific capital models of Helpman and Rødseth correctly predict the initial response of the economy when changes in fiscal policy have been unanticipated, while the Heckscher-Ohlin results may apply if these changes have been anticipated in advance. The latter result emerges if forward-looking behaviour is of greater importance in investment decisions than in the consumption-saving decision, so that anticipated future policy changes do not affect current saving, but do affect the distribution of national savings, in the form of capital goods, between sectors. In all cases, however, the short-run effects must be embedded within a growth model which allows the total capital stock to change over time. If the expansionary policies are temporary and financed by increased taxation, then the *disposable income* variable upon which private-sector saving is based falls under almost all circumstances because of the concomitant rise in taxation, leading to a temporary decline in the capital stock following the period of demand-expansion, so that the possible positive short-run employment effects identified by Helpman and Rødseth are usually followed by an even larger contraction. Long-run crowding out occurs if temporary deficits are financed by floating bonds rather than by increasing current taxes, since the share of capital in private portfolios must fall to make room for the increased stock bonds, and since portfolio size itself is adversely affected in the medium-term by the increase in taxation that is ultimately required to finance interest payments on an expanded national debt.

The effects of permanent tax-financed changes in fiscal spending are analysed in Barry (1983), again with quite pessimistic conclusions. The results can be understood by considering a two-sector variant of the Harrod-Domar growth

3. Regardless of the degree of financial capital mobility, of the availability of new capital goods, or of the existence of markets for second-hand equipment, the adjustment of physical capital stocks occurs only gradually if there are rising marginal costs of adjustment, as is usually postulated in modern investment theory.

model.⁴ Unemployment emerges in the Harrod-Domar model when the growth rate determined by the quotient of the savings rate and the capital-output ratio is less than the exogenous growth rate of the labour force. The effects of targeted fiscal spending are that an increase in the relative size of the labour-intensive sector lowers the average capital-output ratio and also raises the savings rate (if saving is based on life-cycle behaviour), thus tending to raise the growth rate. The drawback is that the negative effect of taxation on saving appears likely to swamp these effects. An increase in the relative size of the capital-intensive sector, on the other hand, unambiguously lowers the growth rate through all these channels.

It should be noted that life-cycle behaviour, upon which the consumption-saving decisions in these models are based, predicts a higher propensity to save out of labour income than out of capital income. For LDC's the Kaldorian assumption of a higher propensity to save out of capital income is more likely to be appropriate, and the results of the analyses must be modified accordingly.

In either case the role of profitability in a savings-constrained economy can be summarized as follows: Relative sectoral profitability levels influence short-run employment prospects and determine the allocation of investment between sectors. These in turn affect both the level of income and distribution of income between capital and labour (or between the wealth and labour components of an individual's income) upon which aggregate levels of saving and investment are based.

VI PROFITABILITY AND INVESTMENT

Profitability plays quite a different role, affecting growth by changing the incentive to invest rather than by stimulating saving, when financial capital is perfectly mobile internationally. The domestic consumption-saving decision then determines only the time profile of these financial flows. Kouri (1979, 1982) has analysed this situation in detail. He shows that the real wage, under these circumstances, is the primary determinant both of capital intensity and implicitly, through its effect on expected future profitability, of the rate of investment.

The earlier paper of Kouri's, and a study by Risager (1984), employ such a framework to analyse some frequently observed effects of currency devaluation.

Both papers posit short-run nominal wage rigidity and medium-run real wage rigidity as the underlying cause of what has come to be termed "the devaluation cycle". This assumption appears appropriate for those economies which exhibit real wage rigidity over time but in which there is no immediate, full, and auto-

4. The analogy to the Harrod-Domar model is valid since efficient investment behaviour in Barry (1983) equalises the return to capital across sectors in the long run, so that, as in the work of Harrod and Domar, prices are independent of demand and input-output ratios are constant across steady states; in other words, the set of equations in footnote 2 applies in long-run equilibrium.

matic index-linking of wages. Devaluation, by raising the prices of tradables, reduces the real wage, raises the share of profits in national income, and stimulates investment and employment even, as Risager shows, when future wage contracting is anticipated to restore the pre-devaluation real wage. However, as real wages adjust to the unanticipated inflation, the capital stock cycles and returns to its original steady-state level after several years, as does employment. A new devaluation is frequently undertaken at this stage.

A paper by Korkman (1978) on the same phenomenon also generates these results but rather than basing total capital accumulation on profitability, instead assumes that investment is regulated by the government so as to maintain balance-of-payments equilibrium. This should perhaps be thought of as a balance-of-payments constraint on expansionary policies, in the British post-Keynesian tradition. Production in the tradable sector is determined by the product wage and the sectoral capital stock, and the level of demand, constrained by this bottleneck, is such that the non-tradable sector operates at less than full capacity. Fixed factor proportions are assumed in production. A devaluation, with short-run nominal wage rigidity, raises the relative price of tradables and switches demand towards the non-tradable sector. The resulting excess of production over domestic consumption of tradables relaxes the balance-of-payments constraint which allows the authorities to stimulate investment. Because of its increased profitability, a greater proportion of this investment goes to the tradable sector tending to relax the balance-of-payments constraint further over time and allowing an expansion of employment. However, as wages begin to respond to inflation, the profitability of the tradable sector is reduced, the relative price of non-tradables is pushed up, and both total investment and the share of investment going to the tradable sector decline, driving the economy back to the initial steady-state.

Kouri elaborates on his earlier discussion of the link between profitability and employment in a second paper (1982), where a one-sector growth model of an economy with a rigid real wage is presented. Under the initial assumption of perfect capital mobility the growth rate is shown to rise with a fall in the world interest rate, the real wage or the cost of investment. The stimulation of saving is identified as a further possible policy option when the interest rate is endogenously determined, as is the case when financial capital is less than perfectly mobile. Income distribution is ignored as a determinant of savings however, and aggregate demand policies also have no role to play since production is supply determined and intersectoral considerations are not taken into account.

VII THE NEO-KEYNESIAN APPROACH

Malinvaud (1980) follows a rather different approach in his study of medium-term growth, adopting the method of temporary equilibrium with rationing. At

any particular point in time, he argues, an economy is unlikely to find itself with a full-equilibrium set of prices and wages. As a first approximation, therefore, an economic model should treat prices and wages as fixed in the very short run, thereby allowing various possible configurations of excess supplies and demands to appear. The motion of the system, according to this perspective, should be dictated by the response of prices, wages, and capital accumulation to the prevailing configuration.

This framework differs substantially from that of the papers previously discussed in that the dynamic formulation allows the economy to move endogenously between regions of Keynesian and classical unemployment.

Malinvaud's primary concern is with the effects of real wage changes, and with the likelihood of too high a real wage driving the economy off the constrained transformation curve discussed earlier, into the region of Keynesian unemployment. Starting from the Walrasian full-employment equilibrium, a jump in the real wage lowers profitability and investment, so that productive capacity is reduced over time and classical unemployment develops.

Profitability, however, is not the only influence on capital accumulation in Malinvaud's work. Investment is assumed to take place up to the point where the cost of an extra unit of capacity equals the expected value of the associated extra output times the probability that demand will be sufficient to enable the output to be sold. Simulation methods employed to track the evolution of the economy from the classical region reveal that by the time the real wage, driven by classical unemployment, falls back to its initial level, the pressure of aggregate demand on the shrunken capacity is beginning to make itself felt, and investment revives. However, the substantial unemployment that still exists due to the reduced capacity continues to lower the real wage, which since the latter is a prime determinant of private sector expenditure, moves the economy into a region of deficient commodity demand in which the downward pressure on both wages and prices can combine to generate a stationary real wage. Demand management policies are then required to raise capacity utilisation, employment and investment.

This framework is elaborated upon in Malinvaud (1982), where a more realistic putty-clay structure is presented, in contrast to the clay-clay technology of his earlier work. This allows a distinction to be drawn between capital shortage and excessive capital intensity as sources of unemployment.

The case of a capacity shortage due to a lack of profitability conforms to what earlier has been termed "classical unemployment". Capital decumulation occurs even in the absence of existing excess capacity, if remuneration rates are "too high" (i.e., above the factor price frontier).

Demand enters the story when the economy is operating at less than full capacity, i.e., in the region of Keynesian unemployment. The relation between employment and the real wage is more complicated in this situation, since a high

real wage is presumed to stimulate aggregate demand and thus short-run employment while exerting conflicting pressures on employment in the medium term. Buoyant demand raises capacity utilisation and encourages capital accumulation, but an increase in the real wage also gives rise to a substitution effect which raises the desired capital intensity of the production process.

If this substitution effect on employment dominates, as is the presumption, then medium-term unemployment may be said to be due to too high a degree of capital intensity.

It might be thought that this model is of limited relevance to the small open economy because, taking the case of a real wage reduction, the demand effects would be offset to some extent by an increase in profitability and production in the tradable sector. The reduction in domestic expenditure would be immediate, however, while the expansion of the tradables sector, as found for example for the case of Ireland by the Report of the Committee on Costs and Competitiveness (1981), would be "modest in the initial stages and require several years for the full effects to become apparent".⁵

In this situation Malinvaud recommends an incomes policy to affect medium-term capital intensity, combined with temporary expansionary policies to overcome the contractionary effects of lower real wages. Such a suggestion has also been made independently by Meade (1982).

VIII SUPPLY MANAGEMENT POLICIES

The obvious problem with incomes policies, however, is that the real wage cannot be regarded as an instrument of government policy. What if incomes policies cannot be effected? It has been argued here that the major role of demand management policy is to prevent Keynesian recession, but that the medium-term prospects for expanding the economy through such policies are weak once the capacity constraint determined by profitability has been reached. Recourse may be had at this stage to policies which operate on aggregate supply.

Corden (1980) distinguishes between defensive and positive supply side policies. The former involve protection while the latter attempt to expand employment, with the real wage taken as given, by raising labour productivity relative to cost and by stimulating capital formation. This policy option involves some type of factor or production subsidy.

It is well known from standard welfare theory (cf. Corden (1974)) that the optimal subsidy policy is that which treats the distortion at source, implying the superiority of an employment subsidy for an economy in which the real wage is rigid. From the discussion of the medium-term effects of demand management

5. This gradual adjustment is probably due more to the sluggish response of sales to price changes than to short-run difficulties in altering the level of production.

policies it has also been seen to be crucial to economise on taxation, so that employment subsidies or payroll tax reductions applied on the margin may be most suitable. These can stimulate marginal profitability in all sectors of the economy, and Layard and Nickell (1980) argue that their impact on employment relative to budgetary cost is high, from which it may be surmised that sufficient disposable income and thereby saving can be generated to finance capital accumulation, allowing a further expansion in employment over time.

The recommendations of economic theory notwithstanding, production and investment subsidies are frequently used in place of employment subsidies in this situation. Neary (1978b), in analysing the effects of sector specific capital subsidies, suggests that a possible explanation for their widespread use as a means of stimulating employment may be an administrative preference for grants paid out on a once-and-for-all basis over ongoing labour subsidies.

The issue of the optimal size of subsidies to employment, production and investment is taken up in Barry (1984a), where it is shown that the welfare ranking of policies when unemployment is of the classical variety, is as follows:⁶

- (1) Uniform labour subsidies
- (2) Sector specific production subsidies
- (3) Uniform production subsidies
- (4) Sector specific investment subsidies
- (5) Uniform investment subsidies

In correcting the failure of the free-market economy to provide sufficient employment, production and investment subsidies generate a higher capital-labour ratio than do employment subsidies, thereby diverting more resources away from consumption and into investment. The optimal setting of these instruments therefore requires that a trade-off be made between the distortion being created and the one being corrected. The lower a policy comes in the hierarchy, the lower the level of employment that the policy should attempt to generate.

When the effects of these policies on the balance of trade is of concern it becomes even more important to adopt policy instruments that economise on the use of capital per job created since an increase in investment, *ceteris paribus*, causes a deterioration in the trade balance.

IX CONCLUDING COMMENTS

To summarise the results of this review, it appears that for an economy with persistent real wage rigidities demand management policies should be used only to prevent the economy from dropping inside the cost constrained CC frontier,

6. Discretionary subsidies, however, induce wasteful rentseeking behaviour which lowers the position in the policy hierarchy of sector specific subsidies relative to all those that are applied evenly across the board.

while supply side policies (particularly employment subsidies, perhaps applied on the margin) should be used to shift this frontier over time.⁷

It is important to bear in mind, however, that the results presented are valid only for the particular types of unemployment discussed here. A frequently cited paper by Lilien (1982) presents evidence from US data that sectoral shifts necessitated by the supply shocks of the 1970s were responsible for most of the cyclical activity of the last decade, and that recent unemployment should therefore be thought of as being primarily structural in nature. While shifts in comparative advantage and in the terms of trade can make existing real wages inappropriate for the current industrial environment, it would be a mistake to treat the resulting unemployment as though it were of the simple classical variety. The problem in this case is not simply to keep the economy on the production possibility frontier PP, but rather to facilitate movement from one point on this frontier to another while ensuring that the adjustment path remains as close to the frontier as possible. Policies to deal with structural unemployment must therefore be concerned not only with the cost of labour and the level of aggregate demand, but must also be directed towards the removal of impediments to the intersectoral flow of productive factors and to the steady development of potentially profitable sectors.

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