Essays on Argentina's growth cycle and the world economy

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Chapter 1: The degree of monopoly, the macroeconomic balance and the international current account: the adjustment to the oil shocks[*]

The purpose of this chapter is to discuss the impact of oil shocks on the industrialised economies[5]. To this purpose a simple short-run model is outlined. Attention is focused on two aspects of the shock: (a) the consequences for income distribution, the level of output and the external account; (b) the policy options open after the shock. The discussion integrates micro and macro analyses in the Kaleckian tradition, with international trade and finance between the industrialised and the developing countries[6].

1. Background to the model

In addition to the slumps following the oil shocks, the interest in this chapter's topic arises from the observation of the following current account behaviour in the Western World[7]. During the post World War II period until 1973 the industrialised countries as a group run surpluses against the developing group (including OPEC). These imbalances were small and fairly constant in real terms. In 1974, following the increase in the price of primary commodities (particularly oil) of 1972-74, the industrialised group moved into deficit. The surpluses of the low absorption oil exporting developing countries, which accompanied the shock, were larger and more lasting than the surpluses experienced by the high-absorption non-oil developing countries. By 1975 the non-oil developing countries

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[5] There is a growing body of literature on world models. Although omitting important European (e.g. OECD 1983C) and Japanese models (WEM), Hickman (1983) surveys the state of the art. The models by Carrin 1983, Manne 1983, Whalley 1983 and 1984, in the neo-classical general equilibrium tradition, are tested with the ´calibration method´ usually based on the observation of the data at a single point in time. Furthermore, all neoclassical models contain most of the standard unrealistic assumptions about perfect competition, lack of uncertainty and savings determining investment, which obscure the understanding of institutional/behavioural relations in the economy. This adds to the well-known logical inconsistency that the prices of factors and the distribution of income cannot be determined simultaneously (Robinson 1954 and Harcourt 1972). Bruno & Sachs (1985) discuss world stagflation referred to a general equilibrium benchmark. The input-output models with a high degree of disaggregation (i.e. Leontieff et. al. 1977 and Duchin 1983) and the econometric forecasting models with a rigorous testing methodology (i.e. LINK, OECD 1983C and WEM) face both the problem of lack of statistics and the problem of specification due to their structural form (Sims 1980). The simple model presented here is not devised for econometric testing and owing to the severity of the oil shocks it can only be illustrated with the available historical data.

[6] Countries classification follows that of the International Financial Statistics of the IMF.

[7] *International Financial Statistics*, *Supplement to the Balance of Payments,* IMF (various issues) and *World Economic Outlook*, IMF (1983 Table 23)

returned to, and remained in, deficit. Only by 1978 did the current account show a position similar to that of the post World War II pattern: OPEC surpluses were practically nil and the industrialised group continued in surplus against the non-oil developing countries. A similar phenomenon occurred during the period 1980-83 following the second oil shock of 1979-80. Hence the question naturally arises: which are the causal mechanisms contributing to the slumps and to the recovery of the current account position of the industrialised group after a sharp fall in the terms of trade such as occurred in 1973?

In a capitalist economy, the decisions over productive resources are concentrated in the individual firm. Macro-economic analysis of international trade and finance ought to be consistent with a micro-economic theory of the firm. Since Kalecki's early writings, the cost-pricing argument has been incorporated in the analysis of open peripheral economies (e.g. Kalecki 1972 and Taylor 1983) and in some international trade models (e.g. Adams & Marquez 1983, Darity & FitzGerald 1982, LINK, MCM and OECD 1983c). For the case of advanced capitalist economies, however, there is no well-established literature combining mark-up pricing with balance of payments and international trade theories (Dixit, 1984 and Jacquemin 1982). Kalecki regarded the degree of monopoly of the firm as providing stability to the macro-distribution of income in a single economy (Kalecki 1938). In this chapter, Kalecki's argument is expanded to the case of advanced capitalist economies engaged in trade and finance with the developing countries.

In what follows the industrialised countries are the 'centre' and the developing countries (including the oil exporters) are the 'periphery'. This terminology refers to the industrialised countries' large relative size in the world economy (OECD 1983b, pp. 85) and to the fact that they provide most of the capital goods and technology used at the periphery (Prebisch 1959, Braun 1973, Lewis 1978b) as well as the means of payments for the purchase of these goods[8] (Costa 1983). We shall return to this when discussing equations (13) to (16). This terminology does not imply, of course, the dismissal of the competition existing among private capital and among nation states.

Among the limitations of this chapter it is important to mention the following. It is assumed that no significant structural change occurred in the years immediately after the

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[8] In the long run analysis the 'centre-periphery' terminology also implies that the higher standards of living at the centre are the 'fruits' of faster technological progress (Prebisch 1959) which implies unequal exchange (Braun 1973).

oil shock of 1973-74 and 1979-80. In neglecting structural change (i.e. with fixed production coefficients) the international trade network does not vary with changes in relative prices (including exchange rate fluctuations).

The focus of this chapter is on the centre countries. Issues associated with the main topic, such as income distribution in the periphery or the rise in the foreign debt of some peripheral economies observed during the period of adjustment to the oil shocks[9], are not discussed, although the argument could be expanded in that direction.

This distinction between the oil and the non-oil periphery is not incorporated into the mathematics of the model although it is present in the discussion. This simplification does not affect the argument and makes the presentation clearer.

2. The model

The mathematics in the model should be seen as a simple skeleton for the discussion of more complex issues in the following sections. A number of strong assumptions are made, which may be regarded as a stylised presentation of the facts to help us concentrate on the main argument.

The centre produces and exports a bundle of goods which can be used for consumption and investment. The periphery exports to the centre a bundle of goods that are only used as non-labour inputs (Bochove 1982). Apart from raw materials, domestic intermediate goods cancel out in the national accounts. Thus, on the assumption that the centre does not produce raw materials, all non-labour inputs are imported from the periphery (this puts aside intersectoral complications which are not central to the argument). The sub-indices 1 and 2 stand for the centre and the periphery respectively. With the exception of h, the variables with no sub-index number refer to the centre. All the variables are in real terms deflated by the relevant price index.

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[9] By structural change is meant any significant change in the input-output matrix for the production of tradeable goods, caused by factors other than short-run changes in capacity use. For a general theoretical discussion, which abstracts from competition, see Pasinetti (1981). For an historical survey on growth, trade and structural change in the world economy see Lewis (1978a), Maizels (1970), Maddison (1982) and Nagy (1983).

(1) p_1 = $(1 + \eta)\,(p_1\,\mu\,\alpha + p_2\,m)$ with[10] $0 < \eta$

(2) h = p_2 / p_1

(3) Y = $C + I + G + X_1 - h\,M_1 + F$

(4) Y = $W + \Pi$

(5) Q = $C + I + G + X_1$

(6) W = $\mu\,\alpha\,Q$

(7) C = $c_w\,(1-t_w)\,W + c_\pi\,(1-t_\pi)\,\Pi$ with $c_w,\ t_w,\ c_\pi,\ t_\pi\ \in\ [0,1]$

(8) θ = $[(\Pi - F)/Q]\,\kappa + F/K$

(9) I = $v\,(1-c_\pi)\,(1-t_\pi)\,\Pi$

(10) v = $v(e,q)$ where $dv/de > 0$ and $dv/dq > 0$

(11) CA = $X_1 - h\,M_1 + F$

(12) CA = $D - \Delta R_2$

(13) M_1 = $\xi\,Q$

(14) M_2 = $z\,h\,X_2 + D - F$

(15) X_1 = M_2

(16) X_2 = M_1

Endogenous variables
h : terms of trade of the periphery
p_1 : real monetary price of final output
r : rate of profits
v : propensity to invest out of net profits
C : private consumption
CA : current account at the centre
I : gross investment
M : imports volume
P : gross profits
Q : final output
R_2 : stock of reserves at the periphery
X : exports volume
W : wage bill
Y : income

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[10] From (1) and (2) $0 < \eta = 1/(\mu\alpha + hm) - 1$ that implies $0 < (\mu\alpha + hm) < 1$. For examples of empirical estimations of the mark-up in selected countries and industries see Godley and Nordhaus (1972), Coutts et. al. (1978), Sylos Labini (1979), Reynolds (1984) and Finsinger and Kraft (1984).

Exogenous Variables

α :   labour time to output ratio
c_w :   propensity to consume out of wages
c_π :   propensity to consume out of profits
e :   business expectations
η :   mark-up parameter set by the degree of monopoly
m :   propensity to import and input-output coefficient
p_2 :   real monetary price of (imported) inputs
q :   availability of credit
t_w :   tax ratio on wages
t_π :   tax ratio on profits
κ :   output-capital ratio, and index of capacity use
μ :   wage-labour ratio (wage goods paid per unit of labour time)
z :   propensity to spend peripheral export revenues
D :   net lending from the centre to the periphery
F :   net foreign investment income
G :   government expenditure
K :   value of gross capital stock

Let us highlight some aspects of the behavioural relationships in the model. Equation (1) says that the representative firm at the centre sets prices to recover gross profits by a mark-up η on real unit variable costs[11]. A positive η implies that profits are positive, and it also contributes to the stability in the solutions of the model (in the next section). The degree of monopoly (as distinct from the mark-up) is here defined as the balance of power which managers have in the firm's environment, that is, in capital accumulation. The mark-up η is set by the degree of monopoly because competition to accumulate drives managers to aim for what experience suggests is the mark-up consistent with the balance of power of the firm in question[12]. The degree of monopoly is, in turn, determined by a whole set of institutional forces (Kalecki 1954, pp. 19-24 and Sylos Labini1969, pp. 91-2) The degree of monopoly is thus part of a dynamic centre of equilibrium. In neglecting structural change, however, changes in the degree of monopoly are largely due to changes in the determinants of the costs of labour and non-labour inputs[13]. Recall that the latter only

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[11] The representative firm is a 'microcosmos' of the whole economy and retains all the characteristics of an individual firm (Robinson 1969)

[12] Managers can be mistaken about the degree of monopoly. If managers, for example, over-estimate their degree of monopoly then Joan Robinson's 'inflation barrier' is reached (1962). See also Rowthorn (1977) for a formalisation of the conflict theory of inflation.

[13] In general, the degree of monopoly is determined by 'a conglomeration of forces ´(Sylos Labini 1969. p. 91-92). Since we neglect changes in the structure of production and demand, we may also abstract from important influences on the degree of monopoly such as changes in 'the concentration of industry' (Kalecki 1954, p. 19) and changes in 'the general elasticity of demand' (Sylos Labini 1969). Thus we are left with changes in the costs of production (Kalecki 1954 and Sylos Labini 1969) as the major cause of possible changes in the degree of monopoly.

includes imported raw material and other intermediate goods and hence also the financial sector is neglected here. The cost of labour $p_1 \mu \alpha$ is set by 'the power of the trade unions' (Kalecki 1954, pp. 20). Moreover, Kalecki (1938, 1939 and 1954) regarded the short-run price of raw materials in a closed industrialised economy as determined by the level of demand. This chapter departs from Kalecki in that the cost of (imported) non-labour inputs (raw materials and other intermediate goods) $p_2 m$ is set by the bargaining power of peripheral exporters *vis-à-vis* the centre. This bargaining position is in the short-run influenced not only by demand but also by autonomous events such as cartel agreements.[14]

In (1) and (2), both p_1 and p_2 are denominated in a weighted basket of currencies (e.g. SDRs) and deflated by their own price index; thus the exchange rate between the centre and the periphery is omitted[15]. Exchange rate variations within the centre can, however, create uncertainty and hence affect the propensity to invest v as discussed in connection with equation (10) below.

Turn to the rate of profit r and capacity use κ in (8). A given degree of 'concentration of industry' captured by the degree of monopoly (Kalecki 1954, p.19) implies that the firm controls a constant share of the market. Excess capacity is then set 'as a reserve against unforeseen contingencies where a rapid increase in supply may be required [… for] a temporary inability to satisfy demand may result in a permanent loss of market share'

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[14] The modelling of these relationships between demand, output Q, cartel power, the degree of monopoly, the mark-up η, μ, α and h would yield mechanical results and add substantial complexity to the presentation.

[15] The exchange rate between centre and periphery is omitted for the following reasons. Exchange rate fluctuations are a particularly relevant phenomenon if international trade and/or financial flows are denominated in the domestic currency of the countries involved. Therefore, among several industrialised economies exchange rate variations are of great significance for they can affect volumes and prices of goods and financial flows (Golub 1983, McGuirk 1983 and Warner 1983). Peripheral currencies, on the other hand, cannot be used in international transactions. Nevertheless, exchange rate changes in individual peripheral economies may have a strong domestic redistributive effect and hence affect demand, output and trade in the economy in question. The possibility of a significant re-distribution of income within the whole periphery caused by a general short-run devaluation or revaluation of most peripheral currencies vis-a-vis the international currencies is dismissed as unfeasible. Changes in exchange rates within the centre, however, would have some direct effect on the terms of trade between the centre and an individual the peripheral country to the extent that the peripheral economy in question quotes its imports and exports in different currencies or trades with different countries at the centre. In considering the periphery as a whole we may assume that this type of effect roughly cancels in the aggregate.

(Rowthorn 1981, p.12). Nevertheless, capacity use κ may vary considerably with changes in demand and thus affect the rate of profit r.

The investment function - taken from Darity and FitzGerald (1982) – is given by (9) and (10) and can be interpreted as follows. Apart from general historical factors (Robinson 1962), business expectations *e* are positively related with the level of demand, with profitability (Kalecki 1954 and Sylos Labini 1969) and with relative price stability (including exchange rate variations) (OECD 1983, p. 58). Note that during a long term period of 'profit squeeze´ (Rowthorn 1976) expectations *e* may become somewhat sensitive to current profitability *r* (Llewellyn 1983, p. 203). Demand in turn holds a positive relation with C, X, G and I. In (10) credit availability *q* (which includes the real rate of interest) is influenced by governments' policies and the banks' willingness to lend (Sylos Labini 1969, p. 184); *q* also depends on the extent to which banks channel their share of profits to productive investment.[16] Thus (9) and (10) say that with a fall, for example, in expectations the propensity to invest *v* falls and funds tend to be diverted towards financial and commodity speculation (Sylos Labini 1969, p. 180) and towards foreign investment if prospects abroad seem brighter. In addition, if for example credit is rationed (including a rise in real rates of interest) *v* would also fall. The firm finances its investment largely out of retained profits (Sylos Labini 1969 p.183 and Wood 1975, p. 4); thus *v* is more sensitive to changes in *e* than to changes in *q*. Owing to the presence of credit, *v* can be greater than unity. In equilibrium *v* is expected to be close to one because in taking investment decisions managers prefer to maintain a stable ratio of outstanding debt to the value of total assets (Wood 1975, p. 29). This is because a high debt ratio would enable the lenders to interfere with the decisions of the management over the productive resources of the firm. Kalecki's view that investment decisions are constrained by the 'increasing risk' of borrowing (1954, p. 96) seems consistent with this approach.

Peripheral exports are set by the level of activity at the centre in equations (13) and (16). The periphery has no capacity of international credit creation, thus in (14) its capacity to import goods and services and accumulate reserves is directly constrained by the availability of credit from, and the level of exports to, the centre. A value of *z* in (14) smaller than unity implies accumulation of reserves by the periphery and vice versa. Therefore *(1-z)* is the peripheral propensity to accumulate reserves; X_1 (and hence activity

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[16] Productive investment is that which creates employment and hence has a multiplier effect (Sylos Labini 1969, p.181).

at the centre) are affected if z changes in (14) and (15). In general, however, reserves held at the periphery are a small and fairly stable fraction of total trade with the industrialised countries (International Financial Statistics IMF); thus z can be assumed to be normally closed to unity. In equilibrium $z=1$ because peripheral countries spend, sooner or later, their export revenues on imports of goods and services and on repayment of foreign investment. Expanding Keynes (1939, p.668) for the case of open economies, D (as finance in 14) is set by the lending policies of governments at the centre and by international banks.[17] Also in (14), in spite of D being positive, z could be smaller than one because some peripheral economies may be borrowing to finance imports, whereas others may be accumulating reserves.

3. Implications of the model

For clarity, in what follow (10) is not used in solving the equations, and hence v appears as exogenous in (19) and (21) below. Nevertheless, (10) is kept in the background for the discussion in the next sections.

On the evidence of the period[18] 1960-1982, assume that the power of trade unions sets $\mu\ \alpha$ as a constant in the short-run. This is removed in the last section.

Let us now solve for the variables of interest. The terms of trade of the periphery are, from (1) and (2):

$$(17) \quad h = \frac{1}{(1+\eta)m} - \frac{\mu\alpha}{m}$$

Given m and $\mu\ \alpha$, the degree of monopoly (and hence η and h) only vary with changes in the bargaining position of peripheral exporters. In the base year, assume $p_1=p_2 \rightarrow h=1$.[19]

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[17] This implies that there are always peripheral economies prepared to borrow, i.e. the supply of international exchange is always shorter than its (ex ante) demand, as pointed out to me by Willem van der Geest.

[18] Unit labour costs (OECD 1984c, Table 9.10) deflated by consumer price index (OECD 1984c, Table 8.3). See also OECD (1983ᵃ, p. 50-58).

The rate of profit is[20]

$$(18) \quad r \quad = \quad (1 - h\,m - \mu\,\alpha)\,\kappa + \frac{F}{K} \quad = \quad \frac{\eta}{1+\eta}\,\mu + \frac{F}{K}$$

The level of output is

$$(19) \quad Q \quad = \quad \frac{D + G - (1 - n_\pi)F}{1 - n_w\mu\alpha - n_\pi(1 - \mu\alpha) + hm(n_\pi - z)}$$

with

$n_w = c_w\,(1-t_w)$ net propensity to spend out of wages

$n_\pi = (1-t_\pi)\,[c_\pi + v\,(1-c_\pi)]$ net propensity to spend out of profits

Substituting for h (17) the denominator becomes

$$E = 1 - n_\pi - \mu\,\alpha\,(n_w - z) - \frac{\eta}{1+\eta}\,(z - n_\pi)$$

In equilibrium v=1 [as argued with (10) above] and z=1 [with no exogenous net reserve variations in the long run], thus

$$\overline{E} = \mu\,\alpha\,[1 - c_w\,(1 - t_w)] + t_\pi\,\frac{\eta}{1+\eta} \;\to\; 0 < \overline{E} < 1$$

Therefore, with a positive numerator in (19), Q has a stable and positive equilibrium solution[21].

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[19] For en empirical survey of the evolution in the terms of trade between different regions in the world see *International Financial Statistics*, IMF and *Handbook of Statistics*, UNCTAD. For a theoretical discussion see Spraos (1983), Rodriguez (1980) and Chichilnisky (1983).

[20] Hill (1979) discusses the difficulties in estimating the rate of profit. *National Accounts*, OECD, presents data on profitability for selected group of countries and sectors.

[21] Values for the domestic macroeconomic variables in the model can be obtained from *National Accounts,* OECD and values from the trade flows from *International Trade Statistics* and *Monthly Statistics of Foreign Trade*, OECD.

Equation (19) says that demand and hence Q are positively related to D, G, n_π, v and z; and negatively related to F (if $n_\pi < 1$) and to t_π. The consequences of changes in η and h are given in (20) below.

Changes in demand affect capacity use[22] κ and hence the rate of profit r (18). Therefore, apart from its direct effect on demand and Q, changes in any variable in (19) would have a feed-back effect on Q if changes in actual demand and profitability affect expected demand and profitability and hence the propensity to invest v [as argued with equation (10) above]. The feed-back effect of changes in η, that is in the cost of production h and μ α, have a direct impact on profitability r (18) and hence on expectations and v (10). Let us expand this. Given v, we may write

$$(20) \qquad \delta Q/\delta h \;=\; -\,m\,(1+\eta)^2\,\delta Q/\delta\eta \;=\; (z - n_\pi)\,m\,[D + G - (1 - n_\pi)\,F]\,/\,E^2$$

where the sign depends on the relative values of the propensities to spend out of profits n_π and out of peripheral export revenues z. Changes in profitability are not captured by (20) that only shows direct demand effects. Given labour costs μ α, profitability r in (18) changes with changes in the mark-up η (and hence h) and with demand (through κ). Therefore, the overall consequences on Q of changes in the mark-up η and in the terms of trade h are the result of direct changes in the demand components as in (20), and of changes in the propensity to invest v resulting from changes in expectations e induced, in turn, by changes in demand Q and in profitability $r(\kappa)$.

The current account at the centre is

$$(21) \qquad CA \;=\; D - R_2$$

where

$$R_2 \;=\; \frac{(1-z)\,[D + G - (1 - n_\pi)\,F]\,h\,m}{E}$$

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[22] *Main Economic Indicators*, OECD, provides data on capacity utilisation for selected countries.

or

$$R2 = \frac{(1-z)\,[D + G - (1-n\pi)\,F]\,[1/(1+\eta) - \mu\,\alpha]}{E}$$

Equation (21) says that changes in the peripheral propensity to accumulate reserves (*1-z*) cause opposite changes in the current account of the centre *CA*. In equilibrium z=1, changes in reserves become nihil and hence *CA=D*. If the periphery is accumulating reserves (i.e. if *z<1*) then the current account CA will deteriorate with a fall in F (if $n_\pi<1$) or η; CA also deteriorates with a rise in G, n_π, n_ω, or h. The opposite holds when the periphery runs down reserves (i.e. *z>1*). With hm(1–z)/E<1, changes in D are positively related with changes in CA.

4. The oil shocks

Start from equilibrium. Since *z*=1, CA (21) equals a (relatively small) D, which was roughly the case during the post II World War period until 1973 and also in 1978 after the adjustment to the first oil shock. Assume also that *κ* (18) is not close to the point of full capacity use and that *v* in (10) and (19) is close to unity.

Now, changes in demand affect the bargaining position of peripheral exporters who trade in relatively competitive markets (Rodriguez 1980). Therefore, changes in output at the centre cause changes in demand for peripheral exports and hence in the terms of trade of the periphery h [through changes in the degree of monopoly and in the mark-up as in (17)].

The effects on h of changes in Q and in η (17) are not the same for all products and regions. Oil, in particular, shows in the short-run a high income and a low price elasticity of demand (Adams & Marquez 1984). Thus changes in Q (demand) have a particularly strong impact on the terms of trade between the centre and the oil-periphery.

Assume: a) an autonomous shift in the balance of power in favour of the oil-exporting peripheral economies caused by cartel agreements and wars, as in 1973 and 1979, and b) a rise in Q as in 1971-73 and 1976-79. This causes a *sharp* rise in the price of oil. The rise in

Q also causes a (milder) increase in the price of non-oil peripheral exports.[23] On average, there is a fall in the degree of monopoly and η at the centre and consequently an increase in *h* of a serious magnitude (17). The bulk of the transfer of real purchasing power flows into the oil-periphery which shows a low short-run propensity to spend its external revenues, whereas that of the non-oil periphery is close to unity.[24] This transfer is strong enough to cause the propensity to spend of the whole periphery *z* to fall substantially below unity in the short-run. Hence the periphery rapidly accumulates reserves[25] (21).

The immediate consequences of such an 'oil shock' are the following. For clarity, assume first that governments adopt a passive stance and that net foreign investment income at the centre *F* is constant. The current account moves into deficit because *z*<1 (21). Output Q declines, assuming $z<n_\pi$ in (20), which is a Keynesian demand effect as in Adams & Marquez (1983), Kaldor (1976) and Balogh & Graham (1979). The rate of profit (18) is squeezed because of the fall in η (the rise in h) and the induced decline in capacity use κ. In addition, the attempts by managers to sustain the mark-up at its pre shock level cause permanent inflation until the target mark-up becomes consistent with the new (lower) degree of monopoly. If during this process inflationary expectations are built up, inflation would continue for some time after the target mark-up found its new equilibrium position. This is in line with conflict theories of inflation (Rowthorn 1977). The overall decline in demand and profitability is likely to have a negative impact on expectations *e* and hence on the propensity to invest *v*. Business expectations *e* are also likely to be negatively affected by the sharp increase in the price of oil (raising doubts about its future price and availability), as well as by the disorderly process of monetary cost increases accompanying the inflationary spiral.[26] Firms could, of course, compensate for the decline in profitability by borrowing to sustain the level of investment at its pre-shock level. With the fall in expectations, however, it is unlikely that managers could decide to sustain *v* by borrowing.

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[23] International Financial Statistics (IMF), Panic (1981) and Thirlwall (1983).

[24] Most non-oil peripheral economies, in strong need of capital goods and other essential inputs from the centre (Taylor 1983 and Chudnovsky & Nagao 1983) normally spend all of their net foreign earnings without much delay (Costa 1983).

[25] The fall in *z* immediately after the rise in *h* can be illustrated with the increase in the reserve/import ratio of the developing countries ("Supplement on International Reserves", *Supplement Series* , IMF, 1983).

[26] Most firms have fixed price contracts of different maturity for their non-labour inputs and for their output. Therefore, as managers try to sustain profitability after the rise in *h*, the mark-up of the rise in monetary non-labour costs through the different stages of production becomes disorderly. In addition, unions' money wage demands aimed at sustaining real wages are not uniform throughout the economy. Due to this non-uniformity in labour and non-labour monetary cost increases, the firm experiences a rise in uncertainty that tends to undermine business expectations.

5. Government policies and adjustment to the shock

Faced with this possibility of extensive recession after an oil shock as in 1974 and in 1981, governments may decide to adopt *compensatory, expansionary or restrictive* policies. Let us discuss each of these in turn.

Governments could attempt to pursue internationally co-ordinated policies of compensating the fall in demand due to the fall in *z* – the peripheral propensity to spend its higher export revenues – by means of a raising public lending to the high absorption peripheral economies (Brandt 1980). Demand thus sustained, *v* and Q would nevertheless fall as a consequence of a squeeze on profits (18) and the disorderly inflationary spiral.

Governments could compensate for the fall in profitability ($\delta r/\delta h$ in 18) by granting subsidies to firms (Cripps 1980). Such subsidies (a rise in G) would be financed by borrowing from the oil-periphery – i.e. with current account deficits in (21). The direct squeeze on profits would thus be averted, but the fall in demand due to the fall in *z* would still cause a fall in output (19). This is because of the direct demand effect ($\delta Q/\delta z$) and the feedback effect of a fall in capacity use κ, in profitability *r* and in the propensity to invest *v*. If Q is to remain at its pre-shock trend, this fall in demand cannot be compensated by a rise in lending to the periphery D, for this would reduce the current account deficit that the centre needs in order to fill the domestic gap between investment and net profits caused by the fall in η (the rise in *h*).

Governments could attempt to compensate for demand and profitability with a rise in G (including subsidies to firms). This would lead to a further deterioration in CA (21). Gradually, as the periphery adapts to its higher level of foreign earnings, z would rise and CA would tend to return to balance. The moment *z=1*, borrowing by the centre comes to an end and output falls because of the squeeze on profits. By sustaining G (subsidies) governments could continue to run current account CA deficits (a form of forced savings on the periphery) until some beneficial structural change occurs.

As suggested by Cripps (1980) governments could also attempt to pursue expansionary policies (rise in G and D) on the assumption that at the time of the oil shocks excess capacity (including unemployment) is sufficiently large to allow for the potential fall in profitability (resulting from the rise in *h*) to be compensated by a rise in demand and κ

(18). The expansionary increases in G and D could be undertaken by governments in countries with a relatively favourable external position following the oil shocks (e.g. the former West Germany and the United States). Thus the de-stabilising effects of a flight of capital out of individual countries at the centre could be averted.[27] Apart from the possibility that excess capacity may not be large enough fully to compensate for the fall in profitability, the reservation about expansionary policies is the following: the expansion in demand and output Q at the centre would induce a further rise in the terms of trade of the periphery h and hence an additional round of inflation that would further harm expectations and the propensity to invest v as discussed above.[28] On this question Cripps says that the rise in the terms of trade h plus some 'painful' energy adjustment could lead to the necessary structural change towards oil-saving techniques. Inflation is implicitly regarded by Cripps as not having a serious impact on expectations.

The main reservation about Brandt's and Cripps's compensatory and expansionary proposals is the following. In the absence of a hegemonic power in the Western world, and given the consequent competition prevailing among nation states, governments would face serious difficulties in reaching the necessary level of fiscal and monetary coordination. For example, it is unlikely that governments could agree on the individual country's share to changes in G, D or CA.

Lastly, governments may decide to opt for restrictive policies in the belief that the recession is inevitable and that it could perhaps contribute to restore profitability. Reductions in G, rises in t_π (19) and rationing of credit q (10) should induce reductions in the propensity to invest v and in output Q beyond those caused by the oil shock. Moreover, the periphery's propensity to spend z would also tend to rise gradually as the oil periphery adapts to its new level of external revenue. These reductions in government expenditure G and in the propensity to invest v and the rises in the tax ratio on profits t_π and in z, would hasten the adjustment towards a balance in the current account CA (21).

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[27] International financial capital regards the current account position as an important indicator of future exchange rates and hence of future yields on currency arbitrage. Current Account deficits in individual countries tend to have, therefore, the de-stabilising effects if a flight of capital and/or the need to offer sufficiently high real interest rates, and/or exchange rate instability (affecting v) as argued, for example, by OECD (1983A p. 19-20) and (1983B).

[28] OECD (1983ª p.19) and (1983B).

The recession during the adjustment would tend to weaken the bargaining position of peripheral exporters and, perhaps, of workers at the centre. Consequently, there could be a rise in the degree of monopoly and in the mark-up; that is a fall in the terms of trade of the periphery h and perhaps in $\mu\,\alpha$. In the short-run, the rate of profit (18) may fall or rise, depending on the relative importance of the fall in capacity use κ, as compared with the decline in h and $\alpha\,\mu$. Note, however, that the original fall in the mark-up η (the rise in h) was not only due to a rise in Q but also to an autonomous rise in the cartel power of the oil periphery, and that unions may be in a position to defend real wages in spite of a short-run increase in unemployment. Therefore the question remains: for how long would the recession have to last in order for the degree of monopoly and profitability to be restored?. A lasting recession, however, would affect long-term business expectations and induce changes in the structure of production and demand with consequences for the degree of monopoly and profitability that are beyond the scope of this work.

An autonomous rise in the centre's net foreign investment income F as happened through the 1970s would enhance profitability (18) but depress demand if the propensity to spend out of profits is smaller than unity $n_\pi < 1$ in (19). Should this increase in profitability be channelled to productive investment, the consequent rise in the propensity to invest v (10) could lead to $n_\pi > 1$ (19) and the overall result of the rise in F would be a softening of the recessive adjustment. Should the increase in profitability be channelled towards non-productive portfolio investment (i.e. a fall in v) the result of the rise in F would be a worsening of the recession. Since foreign investment decisions are not discussed, the sign and magnitude of changes in F cannot be asserted *a priori*. Thus, when discussing the general case, F may be regarded as constant. Nevertheless, changes in F should not have a strong impact on changes in demand and profitability since F accounts for a very small proportion of total profits (OECD 1984a).

Finally, if the assumption of constant $\mu\,\alpha$ is replaced by that of a constant mark-up, a classical Keynesian demand argument surfaces. A rise in the terms of trade of the periphery h would thus not affect the rate of profit (18) for the firm would mark-up the real price of wage goods and materials. Money wages might lag behind price increases. With slowly rising money wages, the inflationary pressure should not be so strong as to seriously harm business expectation. This micro-economic cost pricing behaviour (not always clear in Keynesian writings) plus the assumption of excess capacity, are two important pillars supporting classical Keynesian macro-economics. Clearly, increases in capacity utilisation (demand) have a positive effect on profitability (18). Nevertheless, on the assumption of constant mark-up η and flexible $\mu\,\alpha$, the main cause of the deflationary

adjustment to the oil shock is seen as the fall in demand, owing primarily to the decline in z (19) and the policy reactions of governments concerned with the fear of inflation. This is the central argument in Adams & Marquez (1983), Balogh & Graham (1979) and Kaldor (1976) where the rate of profit of the firm is not considered as a determinant of investment decisions. For Keynes (1936) writing in a period of no major cost pressure and large excess capacity, the rate of profit was protected during the redistribution of income accompanying a rise in demand. Since the mid 1960s, however, the distribution of income at the centre has behaved in a different was to that observed by Keynes. Profits, not wages, became the 'residual',[29] and hence gained theoretical importance along with the theory of the firm for investment decisions and macroeconomic analysis. Moreover, since the beginning of the 1970s changes in demand and profitability have also been partially affected by sharp changes in the terms of trade with the developing countries.

6. Conclusions

A simple short-run model was outlined to illustrate some of the problems of adjustment to the oil shocks of the 1970s at the industrialised countries (the 'centre' of the world economy). This model integrates the Kaleckian theory of the firm with macro-economic analysis of industrialised economies engaged in trade and finance with the developing countries. It has been argued that with constant real wage rates per unit of output and neglecting structural changes, the adjustment to an oil shock of the 1973 type brings about recession. This outcome could be reversed with policies to sustain demand and profitability at the expense of deficits in the current account of the industrialised group of countries. The competition prevailing among nation states, however, is likely to render such policies unfeasible.

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[29] OECD (1983ᵃ, p. 57 Table 23)