

THE ROLE OF EXPORTS IN CEYLON'S SHORT-RUN INCOME FLUCTUATIONS

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The simplest type of theory of short-run economic fluctuations that emerges from the Keynesian analysis of the developed, closed-economy model is based on two fundamental ideas—viz: (i) the demand for consumer goods bears a stable relationship to national income, and (ii) the autonomous demand for investment goods is highly volatile. Given the parameters of the system, autonomous fluctuations in investment, coupled with the stable consumption function, determine short-run economic fluctuations. This may be regarded as the irreducible core of the Keynesian theory of fluctuations. A similar simple theory of fluctuations can also be stated for an underdeveloped export-economy model such as Ceylon in terms of the following—i.e. (i) the demand for consumer goods, and the demand for imports, bear a stable relationship to national income, (ii) the investment function is an autonomous variable of minor significance, and (iii) the level of export receipts fluctuates by great amounts due to events in world markets. Given the structural properties of the system, large changes in export receipts plus small changes in investment, superimposed on the stable saving and import schedules, determine short-run oscillations.

This theory of course is deceptively simple. The relationships involved are in fact much more complex. For instance, in recent years, the annual volume of income-generating government expenditure in Ceylon has been nearly as large as the volume of exports. Again, not all investment is autonomous. Externally-generated changes in import prices may be superimposed on export fluctuations: and so on. But such considerations should not blind us to the fact that all such refinement must be built round the central theme. The simple theory is important because it focusses attention sharply on the crucial role of exports as the moving force behind cyclical fluctuations in Ceylon just as the rudimentary Keynesian model underlines the key role of investment.

The simple theory is also important because it suggests that the problem of short-run stabilization in Ceylon is largely the problem of controlling fluctuations set up by externally-determined changes in export prices. If only the terms of trade could be stabilized, the problem of cyclical instability would largely disappear. Of course, minor fluctuations in income would still

occur due to factors such as climatic conditions, autonomous changes in consumption or investment etc. The magnitude of income fluctuations caused by the volatility of the investment variable will no doubt assume increasing importance as the economic system moves on to higher plateaus of economic development. Indeed a high rate of economic growth, if achieved, may involve irregularities and "bunchings" which may exert strong destabilizing pressures. A slow rate of economic growth on the other hand, may make it impossible to prevent inflation as low-income groups exert strong pressures for a rapid redistribution of income. But these are possibilities for the future. If we recognise the great limitations inherent in policy formulation as well as in economic analysis and prediction, it is evident that the need is to focus monetary-fiscal stabilization measures on moderating wide fluctuations caused by changes in export receipts rather than to aim at ironing out every minor fluctuation caused by domestic variables.

Ceylon is truly an export economy with about 35 per cent of her gross national output being exported. It is well known that tea, rubber and coconut products account for about 95 per cent of her total export receipts. Further, while no reliable statistical estimates appear to be available, it is generally accepted that the short-run supply elasticity¹ of tea, rubber and coconut products—both for Ceylon and other producing countries—is relatively low. It follows, therefore, that abstracting from factors such as crop variations resulting from climatic changes, Ceylon's export receipts are mainly price determined in the short run. It also follows that export prices are mainly demand-determined in the short run. The level of demand will depend on the level of income in Ceylon's chief export markets. The most important market is the United Kingdom. The level of income in Ceylon will therefore depend mainly on the level of income in the United Kingdom and in Ceylon's other major export markets including the United States. The level of income in the United States, of course, will also be an important indirect factor because of its impact on United Kingdom income and on world income generally.

If export prices are mainly determined in the short run by the level of income in Ceylon's chief export markets, it follows that the short run stability of export prices—and, therefore, of domestic income—will depend partly on the degrees of stability of income in the importing countries, partly on the income elasticity of demand for the particular products in those countries and partly on the sensitivity of the domestic economic system to a given change in her level of export receipts. It is generally believed that the income elasticity

1. The relevant elasticity is the export supply elasticity which is not necessarily identical with output elasticity. The former will depend partly on the latter, partly on the size of stocks in the exporting countries, and partly on domestic price and income elasticities of demand for the particular product in the exporting countries.

of demand is significantly lower for tea than for rubber and coconut products—while it is higher for rubber than for coconut products. It would then follow that the fact that tea exports alone normally account for as much as 60 per cent or so of Ceylon's total export receipts is a factor making for greater domestic income stability². On the other hand, a given change in the export price of tea will cause greater domestic income instability than an identical change in the export price of rubber or coconut, assuming that the sensitivity of the domestic system to a given change in export receipts does not vary markedly with the type of export commodity causing the change.

It was noted earlier that Ceylon's export industries are likely to be characterised by relatively low short-run supply elasticities. The argument here adduced is that export supply elasticity is likely to be low in ordinary times. At the bottom of a severe depression, of course, the elasticity may be considerable because of the existence of stocks and idle capacity. Similarly, if export prices rise abnormally, producers may expand output considerably by methods such as "overcropping". In any case, even in ordinary times, some change in the physical volume of exports can be expected as a result of the existence of a price elasticity of output greater than zero. In general, the elasticity of output will be the greater the longer the period over which a particular export-price change persists, the larger the price change, and the larger the extent of unused capacity in existence in the export industries. The size of the induced change in the output of export commodities may be somewhat smaller for a given percentage increase in price than for an identical decrease in price in so far as a rise in export prices is likely to cause a lagged change (via income) in the prices of factor inputs in the same direction to a much greater extent than a fall in export prices. But in so far as changes in export output are induced by changes in export prices, they will add to the instability of income, on the

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2. The force of this argument may be reduced to some extent by the fact that the price elasticity of demand is also likely to be lower for tea than for rubber and coconut products, depending on the way in which relative price change in the importing countries. (Available studies suggest that the price elasticity of demand for tea in the United States is below 0.3).

In the tea-drinking countries, the cross elasticity of demand between tea and other beverages is likely to be small. In so far as income fluctuations in the importing countries are accompanied by relative-price changes as between different teas, substitution may also occur between different teas. To some extent, Ceylon tea which enjoys a high reputation, can be treated as a technologically and psychologically differentiated product. Nevertheless, the cross elasticity of demand between Ceylon tea and other tea is likely to be significantly larger than the cross elasticity of demand between tea and other beverages.

The price elasticity of demand for coconut products is likely to be high in view of the wide array of close substitutes which are readily available such as various synthetic detergents, soya bean, ground nut, cotton seed and palm oil as well as other oils and fats.

For an attempt to estimate income and price elasticities of demand for tea and rubber, see *Demand for Certain Exports of Ceylon*, K. Tharmaratnam, Monograph No. 4, Department of Census and Statistics.

realistic assumption that such supply variations by Ceylon are unlikely to be of such magnitude as to exert any appreciable effect on export prices in the short run.

Changes in the physical volume of exports may also occur from other causes. As already noted in passing, changes may be caused by output variations resulting from factors such as climatic conditions. Such changes do not represent "economic responses" and must be treated as exogenous factors. In any given year, the magnitude of such changes may be substantial and they may either increase or decrease domestic income instability generated by export-price changes. Second, export-supply changes may occur from variations in the size of domestic stocks. Admittedly, such changes do constitute "economic responses" and depend largely on expectations about future export prices. But no one can predict whether a given export-price change will influence price expectations in the one direction or the other. In the absence of a theory of how expectations are formed and revised in the export sector, it is an unsolved problem to incorporate expectations in export behaviour.

Changes in export supply may occur from short-run variations in the domestic consumption of export products induced by changes in domestic income and relative prices associated with export-price fluctuations. When export prices increase, on the one hand the domestic prices of "export products" will increase in relation to other domestic prices. On the other hand, domestic consumer incomes will also increase. Thus the relative-price effect and the income effect on the volume of exports will operate in opposite directions. But even if we ignore the offsetting effect of relative-price changes on the home consumption of export products there can be no doubt that as far as Ceylon is concerned, the domestic marginal propensity to consume such products is not significant³. For instance, reference to time-series data show that aggregate private consumption expenditure on tea has not been much above one per cent of total private consumer expenditure while the corresponding figure for coconut products has been about 4.5 per cent. Cross-section data, in addition to confirming these conclusions, reveal that they apply broadly to all the major income-groups as well as the economy as a whole.⁴ To put it differently, it is not necessary to include domestic income and domestic relative prices even as minor variables in the export function.

If the usual short-run assumption of constant capital stock is relaxed, the physical volume of exports may expand as a result of the secular growth of output in the export industries. For instance, during the period 1948-60,

3. The domestic marginal propensity to consume export products, calculated from time-series data, is below 0.04.

4. For instance, see *Survey of Ceylon's Consumer Finances*, Central Bank of Ceylon (Colombo—1954), Table 26.

tea production in Ceylon appears to have grown at an annual average rate of nearly 4 per cent and the total volume of all exports at a rate of about 1.7 per cent⁵. The effect of such a secular growth trend in exports on short-run income fluctuations would be stabilizing in periods of falling export prices and destabilizing in times of rising export prices. The supply of exports may also depend significantly on the ability to import—that is to say, on the availability of foreign exchange reserves. As far as Ceylon is concerned, available evidence appears to be conclusive. For instance according to national income data, the “import content” of exports has only been about 5 per cent. At the aggregative level of analysis this means that, in the short run, the ability to export is not much dependent on the ability to import.

It is now widely recognised that the export trade—but not export production—is significantly dependent on the availability of short-term bank accommodation. When export prices increase, if the supply of credit does not increase or decreases, this will probably operate as a brake on the expansion of export receipts by dislocating the export trade⁶, although if the credit shortage persists, export traders are almost certain to overcome this bottleneck by the adoption of various money substitutes. Moreover it should be noted that since “export products” enter into domestic consumption directly (or even indirectly—i.e. embodied in imports) only on a very minor scale, export-price fluctuations will have only a limited direct impact on the domestic price level. For instance, in the Colombo Consumers' Price Index, “export products” account only for 5 per cent of the total weights which means that export-product prices must change by as much as 20 per cent to cause a one per cent change in the overall index. The effect of export-price fluctuations on the domestic price level—being mainly an indirect one operating through income change—will be subject to various time lags.

To summarize, if we abstract from fiscal operations, changes in export receipts are the dominant moving force behind short-run income fluctuations in Ceylon. Export prices are determined externally and are largely a function of the level of income in Ceylon's major export markets. The level of export receipts will depend on export prices and domestic export supply. Short-run changes in export supply will be partly autonomous and partly induced by other variables in the system. Abstracting from autonomous changes, the magnitude of induced changes is unlikely to be large in ordinary times. When export prices increase, export receipts will usually increase provided sufficient bank credit is available to finance the movement of exports. The converse process will operate when export prices fall except that an insufficiency of credit

5. *Economic Progress of Ceylon 1948-60*, Dr. W. Rasaputram, Paper presented before Section F, Ceylon Association for the Advancement of Science—May 1961.

6. Such a shortage of credit is unlikely to occur normally during an export boom.

—if it occurs—will merely intensify the contraction of export receipts. But how will the various strategic variables in the domestic economy react to short-run fluctuations in exports if there is no state intervention aiming at stabilization? The remainder of this article is devoted to this problem.

Two situations will be considered here—one of rising export prices and one of falling export prices. In order to make the problem manageable, we make the following simplifying assumptions:—

1. The rise or fall in export price is assumed to occur from an initial position which satisfies the following conditions—viz.
 - (a) exports = imports; government expenditure = government revenue; investment = saving; and
 - (b) the supply of money = the demand for money at existing interest rates.
2. Tax rates and the level of government expenditure are fixed;
3. All taxes are in the form of a progressive income tax;
4. There is no time lag between the receipt of income and the payment of taxes;
5. The exchange rate is fixed, and
6. No autonomous changes occur in any of the strategic variables in the system other than in export prices.

Let us now assume a period rising export prices. How will the key variables in the domestic economic system behave? A general and tentative answer to this question is provided below in a series of steps.

(1) As export prices increase, the aggregate level of export receipts will expand mainly because of the rise in prices and partly because of some induced and (and lagged) expansion in the physical volume of exports. Even a relatively modest increase in export price could be expected to cause a relatively significant primary increase in national income, because exports are large in relation to national income. With the increase in their disposable income, export producers will expand their consumption and this will set off a multiple expansion of national income. Given the size of the primary increase in income, the ultimate increase in income will depend on the size of the multiplier. In economic systems such as Ceylon, even though the marginal propensity to consume is high,⁷ the real-income multiplier⁸ and the employment

7. For most economic systems for which reliable data are available, the marginal propensity to consume is between 0.6 and 0.8. For Ceylon appears to be in the region of 0.8—0.9.

8. The money-income multiplier in Ceylon will of course, be much higher than the real-income multiplier.

multiplier are likely to be quite low not merely because of the high marginal propensity to import, but also because of the exceptionally low short-run output elasticity of home industries.

(2) Subject to various time lags, the rising level of national income can be expected to cause an expansion of investment. Depending on the size of the income-investment lag and the duration of the export boom, this may cause income to increase still further. That is to say, an accelerator effect may be superimposed on the multiplier effect. However, because of the small size of investment expenditure in relation to national income—a basic structural property of underdeveloped systems—the degree of instability generated by induced investment will be quantitatively small.⁹

(3) Since the tax rates and the level of government expenditure are assumed to be fixed, part of the increased income will leak into taxes. A budgetary surplus will develop. The magnitude of the “built in” compensatory effect of fiscal policy, on our assumptions, will depend on the rupee change in tax revenue resulting from a given change in national income—that is to say, upon the marginal tax rate.

(4) A part of the profits of corporations engaged in export production and export trade is paid to—or temporarily accumulated on behalf of—foreign shareholders. The outflow of such dividends can be expected to increase (subject to time lags) when income is rising and conversely. This is one of the structural properties of the system which helps to (a) damp down domestic oscillations set up by export price fluctuations, and (b) bring about a more rapid adjustment in the balance of payments. It should be noted that the quantitative significance of this “built-in” stabilizer has diminished over time with the progressive expansion of Ceylonese ownership of the export industries.

(5) Part of the increased income will leak into corporate and personal savings. If the consumption function remains stable during the export boom, then only a small proportion of the increase in disposable income accruing to residents is likely to be saved in this system. This, of course, does not imply that over each unit of time during the export boom, consumption will bear the same relationship to income as indicated by the statistical value of the consumption function. The presence of lags will ensure that consumption will trail some steps behind income. Consumption is likely to move rather tardily in the initial stages of the boom and to gather momentum as the boom progresses. The lags are likely to be most in evidence at the turning points of the cycle.

9. In a system where uncertainty is high, where private gross investment amounts to only about 10 per cent of the gross national product, where the supply of entrepreneurship is notoriously scarce and where only about 2.3 per cent of income earners are engaged in the building and constructional industries, it is virtually certain that the extent of income instability generated by induced investment is likely to be small.

But it seems certain that the income of the wealthier classes—particularly of those connected with the export industries—will fluctuate over the cycle much more widely than those of wage earners and other low-income groups. As the upper-income groups possess lower marginal propensities to consume¹⁰, cyclical changes in income distribution will cause shifts in the consumption function favourable to consumption when increase is falling and favourable to saving when income is rising.

Of course, the greater cyclical instability of non-wage income is a property common to most economic systems. But if we compare Ceylon with more developed systems, we are likely to find two significant differences. First, in developed economies where workers are strongly organized and where the capital equipment is adequate to provide employment for the entire work force during the boom, the ability of workers to raise wage rates during the boom is certain to be greater than in an underdeveloped, over populated system such as Ceylon. That is to say, the relative share of profits in national income is likely to increase much more sharply in Ceylon than in developed systems. Second, income disparities are probably much wider in Ceylon than in more advanced countries¹¹ and consequently, there is reason for supposing that the marginal propensity of different income groups to consume may decrease much more steeply in Ceylon as we move up the income array. We may, therefore, regard cyclical shifts in income distribution as an important structural property which reduces the sensitivity of the economic system to export-price fluctuations.

While the increase in the inequality of income distribution will no doubt raise the proportion of resident household disposable income that is saved during the boom, the larger proportion of any addition to disposable income will still be spent on consumption. Data obtained from questions to consumers in the *Survey of Ceylon's Consumer Finance (1954)*¹² suggest that other things (such as relative prices, expectations, etc.) remaining unchanged consumers will wish to allocate about 35 per cent of any increase in consumer expenditure associated with any addition to their disposable income on imports and about

10. The hypothesis that the marginal propensity to save increases in Ceylon as we move up the income scale is consistent with cross-section relationships estimated from the adjusted consumer-survey data of 1952-53. If we take away one rupee from a member of the top income brackets and give it to someone in the bottom income layer, consumption will increase at least by about 15—20 cts. and conversely. That consumption is not invariant with respect to changes in income distribution is also supported by data for other countries. For instance see L.R. Klein: *Economic Fluctuations in the United States, 1921-1941* (Wiley, N.Y. 1950), pp. 68-75; T.M. Brown, Habit Persistence and Lags in Consumer Behaviour, *Econometrica*, Vol. 20, 1952, pp. 355-71.

11. Myrdal stresses the fact that the distribution of income is much more unequal in the poorer countries than in the richer countries. *An International Economy, Problems and Prospects* (Routledge & Kegan Paul Ltd., London, 1956), pp. 133-34.

12. *op. cit.*

65 per cent on home goods. Not much significance can be attached to these particular figures because of serious limitations inherent in this part of the survey. But in so far as they provide any indication at all, they suggest that while the demand for both imports and home goods will increase when income rises, the major immediate impact of the increase in demand is likely to be on home goods.

(6) On the assumption that the import function is not subject to cyclical shifts, we can expect a lagged increase in imports along a stable import schedule whenever resident disposable income increases. But a quick and complete adjustment in the balance of payments cannot be expected to occur in this way if only because of the lagged adjustment of imports to income, and of income to exports. It was argued earlier that the inequality of income distribution is likely to increase sharply at higher levels of the gross national product. Whether this in turn will shift the import function depends on whether different income classes have significantly different marginal propensities to import. Cross-section estimates¹³ derived from consumer-survey data for 1952-53 suggest that the proportion of total marginal consumer expenditure on imports (a) declines as we move up the income scale, and (b) is twice as great for the lowest income group as for the highest income class. These findings, taken in conjunction with the fact that the marginal propensities to consume for different income classes fall markedly as income increases, hold out disturbing possibilities. It appears that the import function is even more dependent on income distribution than the consumption function. Sharp shifts in the import function caused by cyclical changes in the distribution of income may seriously interfere with the adjustment of the balance of payments. This would not matter during an export boom but may drive the economy to exchange crises when export prices slump. In any case it will seriously limit the scope for domestic income stabilization via monetary-fiscal measures during the slump. The issues involved are of an importance that cannot be exaggerated and deserve more searching investigation than they have hitherto received.

It is true that, to some extent, there will be a tendency for the income-effect on the balance of payments adjustment to receive some co-operation from the relative-price effect which will work in the opposite direction from the income-distribution effect. For, the price level of home goods will increase during the boom while changes in the domestic level of aggregate demand will have no significant effect on import prices because the supply of imports to Ceylon must be regarded as being extremely—if not infinitely—elastic. Consumers will now try to substitute imports for home goods during the boom, and home goods for imports during the slump. Even though it is true that consumers in

13. Peter Newman: *Studies in Import Structure of Ceylon* (Planning Secretariat, Colombo, 1958), pp. 66-88.

underdeveloped economies can ill afford to ignore even small differences in relative prices, nevertheless the relatively-price effect in such systems is unlikely to be very significant because of the limited physical possibilities of substitution. Moreover, home-goods prices are certain to be much more flexible upwards than downwards. If home-goods prices do not fall significantly during the slump, the relative price effect may be much less important during the slump than during the boom. During the slump, the relative-price effect offers little solace to Ceylon's balance of payments problems.

(7) It was argued above that the larger proportion of any addition to disposable income during the boom will be spent on consumption, and that the larger proportion of any increase in consumer expenditure will be spent on home goods. In view of the short-run output inelasticity of home (non-export) industries—home production is mainly peasant production on tiny overcrowded plots of land—we can expect a sharp rise in the price level of home goods. This increase in the level of domestic prices will also receive some direct assistance from the increase in export prices, in so far as export products enter into domestic consumption. But this direct effect will usually be small because only about 5 per cent of home consumer expenditure is spent on export products. Further, even this limited direct effect will not operate unless the prices of coconut products are affected. The increase in the domestic price level, in turn, will have certain other consequences.

First, as already noted, there will be a relative-price effect on imports which, however limited in size, will be in the direction of hastening the balance of payments adjustment. It will also operate as a limited restraint on the upward movement of home-goods prices. Second, when domestic prices rise, the real-wage rate will fall if money wages remain constant. It is certain that wage-earners will attempt to prevent a fall in their real income at a time when export incomes are increasing. They will make higher money-wage claims. It is important to note that claims for higher wages are likely to be made even if the cost of living were to remain perfectly stable because (a) with the increased demand for labour, the bargaining power of labour will increase, (b) on grounds of distributional justice, labour will be in a stronger position to demand higher wages at a time when the income of the wealthier sector of the economy is increasing, and (c) workers will probably attempt, in any case, to secure for themselves some part of the gain in real income resulting from the change in the terms of trade. But in addition if there is a rise in the cost of living, there will be a further case for higher money-wage claims.

(8) In so far as wage rates increase, it would mean on the one hand, an increase in the cost of production, and on the other hand, a rise in the level of domestic aggregate monetary demand. As a result, the domestic price level will be pushed upwards on two counts. In this way, there is the possibility

of the emergence of a spiral of prices and wages. The speed of the spiral will depend on the length of the price-wage lag and the wage-price lag. The extent to which the spiral will tend to be widened or narrowed down will depend on (a) the ratio of the increase in the wage rate to the preceding increase in the price level causing it, and (b) the ratio of the increase in the price level to the preceding increase in the wage rate causing it. While statistical estimates of these relationships are not yet available for Ceylon, certain facts clearly stand out. First, the ability of workers in any system to raise wage rates will probably depend on the degree of political power possessed by labour. In Ceylon, the fact that the bulk of the hired labour force—as distinct from self-employed workers—is of alien (Indian) origin is probably a factor which tends to reduce the bargaining power of labour. Second, workers' bargaining power in any system will depend on the prevailing level of employment. When unemployment is decreasing, the bargaining power—and, therefore, the rate at which wages can be raised—will be increasing and conversely. The fact that the proportion of the work force involuntarily unemployed in Ceylon is undoubtedly large even when the capital stock is more or less fully employed suggests that the ability of workers to raise wage rates is likely to be much less than in developed systems. This is a consequence of demographic factors and limited plant capacity. The fact that workers are less organized than in advanced economies points to the same conclusion.

Third, while the export industries are organized on capitalist lines, production for the home market is undertaken to a large extent by peasant farmers, few of whom are employers of wage labour. This remains true even though the extent to which hired labour is employed in peasant cultivation appears to have increased significantly in recent years. In such a system, a rise in the money-wage rate means for the most part a rise in the wage rates of the export industries. Now, in the export industries, wage cost is probably the most important element of marginal cost. But export prices are determined externally. It follows that the maximum rate at which wages can be raised in the export sector without causing unemployment will be limited by the rate of increase in export prices. For instance, if the increase in export price is confined to tea, the ability of workers in the rubber and coconut industries to increase their money-wage rates without causing unemployment will be small.

Fourth, since money-wage costs are not an important element of marginal cost in peasant production, an increase in the money-wage rate will not greatly influence the cost of production of home produced consumer goods in the short run. Fifth, the prices of an important group of consumer goods entering into the cost of living—viz. the prices of imports—will not be appreciably affected by changes in the domestic economic situation in the absence of import restrictions. Sixth, the ability of consumers in an open system to substitute (within limits) imports for home goods will operate as a limitation

on the ability and willingness of home producers to raise the prices of their products. Finally, in any economic system, over any short period of time, some prices and wages are likely to remain fixed by contract, custom, convenience, etc. These considerations suggest that the price-wage spiral in this system is likely to be damped down quickly—and much more quickly than in advanced economies—unless inflationary pressure is being continuously renewed from outside. In a period of rapidly rising export prices, of course, such pressure will be continuously renewed.

(9) In the absence of reliable statistical data, we can only arrive at some tentative conclusions on cyclical variations of employment and unemployment. First, in view of the limited size of the capital stock in relation to the labour force, it is quite safe to assume that given existing technology and the existing degree of substitutability between factors of production, a large proportion—a much larger proportion than in developed systems—of the workforce is likely to be unemployed (or underemployed) even when the capital stock is working at full capacity. It is also virtually certain that the bulk of such unemployment is concentrated in the extremely overcrowded peasant sector. The system can never expect to achieve full employment of the work force even at the peak of an export boom in the present stage of the country's economic development.

Second, as export prices increase, we can expect two types of employment effects. The direct effect is that output and employment may increase in the export industries as marginal plantations come into operation and as intra-marginal plantations are worked more intensively. The indirect effect is that output and employment may increase in the non-export industries in response to the increase in domestic aggregate demand induced by the rise in export income. In Ceylon, the direct effect will be reflected in a decrease in the volume of unemployment and underemployment (*a*) in the resident labour force of the plantations, and (*b*) among the peasant labour which finds supplementary employment on the plantations. The indirect effect is likely to be confined in the main to the thin layer of secondary and tertiary industries catering to the home market. The non-export output of the peasant sector is certain to be highly insensitive to changes in the level of aggregate home demand. If the "median size of (land) holding for agricultural families is only 0.82 acres for all purposes"¹⁴ it is clear that these holdings will be more or less fully worked irrespective of the level of aggregate demand. The alternative would be starvation. In view of the large volume of surplus labour concentrated in the peasant sector, the argument that cyclical variations in the volume of supplementary employment available to the peasant work force on the plantations are likely to have important effects on its output for the home market

14. *Six Year Programme of Investment, 1954/55 to 1959/60*, Planning Secretariat, p. 200.

appears to be of doubtful validity. If cyclical changes in employment are largely (though by no means solely) confined to the export industries,¹⁵ it is clear that the size of the increase in employment will be primarily determined by the existing volume of surplus capacity in the export sector at the commencement of the boom. Since such surplus capacity is likely to be small in ordinary times, only a limited increase in aggregate employment can be expected during the boom. In a word, in normal periods, the export boom is likely to be primarily a boom in real and money income than in real output and employment.

(10) The behaviour of the monetary and banking mechanism during the boom will be relatively simple. When exports are increasing, imports will lag behind exports and the resulting surplus in the balance of payments will increase the country's foreign exchange reserves, the quantity of money, and the liquidity of the banking system. The budgetary surplus that will emerge on our assumptions will offset part of the increase in the quantity of money, but it will have no direct effect on the liquidity of the banking system if the budget surplus is used to increase government cash balances with commercial banks. The demand for currency is a positive function of income, and as income rises, currency circulation will expand. This will operate as a limited check on banking liquidity. The effective demand for bank credit in this system is limited in amount and confined largely to the export and import trades. As the value of foreign trade increases, this will automatically cause a limited increase in the demand for bank accommodation, which will be easily met by the banks which are now burdened with excess liquidity.

If we abstract from government operations, the net result is clear. Because of the highly open character of the economy, and the limited role played by the banks, the direct balance of payments effect will swamp all other effects. Exchange reserves will increase by the full amount of the balance of payments surplus. The quantity of money will increase sharply in absolute terms. It will also probably increase in relation to national income. At least some interest rates are likely to fall, although a general decline is unlikely because of institutional rigidities and the low mobility of funds between different loan markets. These indirect changes in internal liquidity and interest rates may exert some independent expansionary influence on domestic consumption and investment. But the expansionary effect generated in this way is likely to be quantitatively small. The money factor in the Ceylon economy is more income-determined than income-determining.

So far, the analysis has been confined to the export boom. Given the identical initial position of equilibrium, the analysis of the export slump is

15. It may be noted in passing that in a modern industrial society, cyclical fluctuations in employment are always much larger in the investment-goods industries than in the consumer-industries group.

simple. The slump is, for the most part, the opposite of the boom. But certain qualifications must be made. First, while the downward flexibility of money wage rates (and prices) is probably greater in Ceylon than in developed systems, it is extremely unlikely that money-wage rates will fall very far during the export slump. It will certainly be a mistake to assume that there would be a downward spiral of prices and wages analogous to the upward spiral characteristic of inflationary periods. Further, if the slump is a severe one, there is a real danger that the Ceylon economy may run into two special types of difficulties.

The first is the danger, already referred to above, that exchange reserves may get rapidly depleted. Given the level of reserves at the commencement of the slump, the slower and the more incomplete the adjustment of domestic income to the fall in exports, and of imports to the fall in income, the more rapidly will the system run into an exchange crisis. The larger the compensatory effect of fiscal policy, the smaller will be the adjustment of domestic income to the fall in exports. Given the fall in income, the sharper the shift in income distribution in favour of low income classes, and the smaller the fall in home-goods price in relation to import prices, the slower will be the adjustment of imports to the fall in income.

The second danger is that the decline in bank liquidity and the deepening climate of business pessimism that accompanies the slump may jolt bankers out of their customary passivity into an actively deflationary role. Banks may raise interest rates sharply, resort to credit rationing, and recall their advances well before repayment dates. At the very least, this may aggravate deflationary pressure. At the very worst, it may lead to (a) a general and serious decline in capital values, causing a general flight from other assets into money, and (b) a flight from bank money into currency, causing bank failures and business bankruptcies. Of course, in normal periods, the possibility of banks in Ceylon playing such a deflationary role is very small because (i) banks usually have adequate liquid resources even at the bottom of a slump, (ii) expatriate banks can borrow from their head offices abroad, and all banks can borrow from the Central Bank of Ceylon, and (iii) all banks usually have large portfolios of "governments" which could easily be shifted to the Central Bank.

Nevertheless, the possibility of banks playing an actively deflationary role during the slump is greater than the possibility of their playing an actively inflationary one during the boom. At least three arguments can be adduced in support of this view. First, given the high conservatism of the banks, there may be no short-run increase in their liquidity which will tempt them to a deliberate credit expansion if that process requires the lowering of their customary security canons. But there is some minimum beyond which they will

not allow their liquidity ratios to fall. For banks working on the British model, this minimum limit is relatively high. Second, while there are a large number of legal, structural and conventional obstacles¹⁶ which severely limit possibilities of short-run banking expansion, these factors will not be an obstacle to a reduction of outstanding advances in a situation of general panic. Third, the very spirit of caution which insulates banks in Ceylon from the boom climate of business optimism may render them all the more vulnerable to an attack of nerves during the slump.

In a relatively closed and developed system, the monetary mechanism tends to become over-extended during the boom so that there is some possibility of the boom being broken by a monetary contraction. Even if we abstract from this possibility (which occupies a central place in the trade-cycle theories of R.G. Hawtrey), there is a strong possibility that monetary deflation may reinforce real forces during the downturn when banking illiquidity combines with a collapse of confidence. But in our system, the boom is a period of increasing monetary ease. The downturn in export prices may fill bankers with gloom. But it is still a period of exceptionally high bank liquidity. However as the slump deepens, increasing pessimism merges with decreasing liquidity. We have an explanation why deliberate monetary deflation is likely to occur—if it occurs at all—during the latter part of the slump rather than at any other stage of the cycle.

So far, we have described in a general way the response of the income and monetary mechanism to a changing level of export prices. The analysis suggests that if we abstract from the possibility of an exchange crisis and a banking crisis—in practice an exchange crisis is a much less remote possibility than a banking crisis—towards the bottom of the slump, the response of the domestic economy to a movement of export prices is likely to be far from explosive because of the presence of important structural properties which will damp down oscillations set up by external shocks. That is to say, if export prices stop changing (or reverse direction) the fluctuations in domestic economic variables will probably tail off (or reverse direction) over a short period of time. Of course, in the extreme case of a high rate of change in export prices extending over a considerable period, the system may not achieve a new equilibrium if export prices cease to change. If the market, on the basis of recent price behaviour, expects prices to change in the near future, the expected change is likely to be realized at once. This may lead to further revision of expectations and so on. The process may quickly get out of hand. The boom may generate a flight from the currency. Similarly the slump may explode into social revolutions. These are conceivable but unlikely. But some expec-

16. e.g. The low branch density of the banking system, the dearth of local assets which can serve as collateral security acceptable to bankers, etc.

tational elements are bound to be present during any export boom or slump. However, it is a major point made in this article that once a change in export prices sets up a rise in domestic prices and/or wages, the possibility of this giving birth to a significant price-wage spiral unaided by further increases in export prices is small. This is one of the most important stabilizing properties of the Ceylon economy.

Finally, it is necessary to point out that the preceding analysis suffers from a number of limitations. First, it is based on the assumption that no autonomous change will occur in the strategic variables of the system other than in export prices. In practice, some autonomous changes in other variables may be superimposed on the cyclical process here described. But they can be easily allowed for within the basic framework of this analysis. Their effect will be either to intensify or to moderate the cyclical savings. Second, we have drawn attention to the role played by some of the more important lags which are likely to be present in the system. Nor is it correct to assume that the lags will remain constant over the cycle. Theoretically, there is reason to suppose that they will shorten themselves as the boom progresses. A comprehensive analysis must not only take account of all significant lags, but also establish their length in each phase of the cycle. Third, our aggregative approach may be somewhat misleading because the intensity and the rapidity with which the domestic economy responds to a given change in export receipts may differ markedly with the particular export price that is causing it because of the existence of important inter- (export) industry differences.¹⁷ Fourth, many of the hypotheses presented here require careful statistical appraisal and measurement. Briefly, even in the field of short run fluctuations, the area or our ignorance is still very large.

In spite of these limitations, our analysis does reveal some significant features of the cyclical process in Ceylon which have important implications

17. For instance, foreign ownership is extensive in the tea industry, substantial in rubber and negligible in coconut. Consequently, a given increase in aggregate export income caused by a change in tea prices may lead to a larger outflow of dividends from Ceylon than one caused by a rise in coconut prices. Moreover, the bulk of the tea industry is owned by people from high income classes while much of the coconut industry is owned by small holders. Coconut producers probably possess higher marginal propensities to consume than tea producers. Hence the multiplier effect resulting from a given aggregate increase in export income may be significantly greater during a coconut boom than during a boom in tea prices. Indeed the length of the income-consumption lag (and, therefore, the speed of the inflation or deflation) may also differ markedly in the different cases. For instance, the time lag between the earning of profits and their distribution may be significantly shorter during a coconut boom because, unlike in tea and rubber, corporate organization is virtually unknown in the coconut industry. Again, will a given increase in domestic aggregate demand, generated by a change in coconut product prices, be distributed between different home goods—and between home-goods and imports—in the same way as one generated by an increase in rubber or tea prices? If the increase in aggregate demand is distributed differently, and if different home-goods industries have different elasticities of output and employment, the results may differ markedly.

for the formulation of stabilization policies. It appears that the domestic mechanism of the Ceylon economy is basically a stable one largely devoid of any intrinsic cyclical pattern. But an oscillatory outside force of periodic and powerful character is impressed deeply upon it in the form of a fluctuating external demand for its exports. Even so, there are important structural properties in our economy, which greatly reduces its sensitivity to these external shocks. From another angle, inflation in this system is seen as a reflection of the struggle of different economic classes to maximize the increase (or to minimize the decrease) in their share of real income or real consumption made possible by changes in the terms of trade. More specifically, it is the struggle by peasants and wage earners to secure for themselves some part of the windfall increase in real income accruing to export producers. But the struggle is rarely a very intense one. The groups who are most likely to suffer in this process are the fixed income groups such as salary earners and pensioners.

Interestingly, our analysis also sheds some light on the theoretical definitions of inflation in this type of economic system. In a closed system, when the elasticity of output has been reduced to zero, any further increases in aggregate demand merely inflate money income without adding to real income. In our system, when the elasticity of domestic output is reduced to zero, any further increases in domestic aggregate demand generated by a rise in export prices spend themselves partly in raising the domestic price level and partly in increasing imports. That is to say, there is no critical point "... at which we can draw a definite line and declare that the conditions of inflation have set in"¹⁸, at least as long as imports are not rising faster than exports. Since the price level in our economy is unlikely, in the absence of import restrictions, to rise in proportion to the increase in domestic aggregate demand in most practical situation (unless assisted by our exogenous increase in import prices) during the export boom even if the domestic output elasticity is zero, what degree of price increase constitutes inflation must necessarily be a matter of practical judgement.

In the preceding discussion of cyclical fluctuations it was necessary, for analytical purposes, to abstract from certain secular changes that appear to be taking place in the Ceylon economy. There seems to be some evidence that under the pressure of changing social *mores*, demographic factors, consumer aspirations and forces making for a redistribution of income, the relationship between aggregate income and aggregate consumption is itself changing in a way unfavourable to saving. The pressing need for stepping up the growth rate of the economy and the expanding demand for a variety of social, relief and welfare services are introducing new rigidities into government expenditure

18. J.M. Keynes: *General Theory of Employment, Interest and Money*, Macmillan & Co., London, 1951), p. 303.

which are eroding away the contra-cyclical potentialities of fiscal policy. In addition to the temptation, ever-present in the underdeveloped economies, to push up investment levels beyond the limits imposed by their capacity to save, we may also have to contend with new sources of instability in the future. Workers may demand increases in wage rates in excess of gains in productivity. Moreover, as bottlenecks emerge in the process of growth, it may become necessary, in the absence of a regime of direct resource allocation, to offer sectional price (or wage) increases in order to attract scarce resources from less to more urgent sectors of production, and it is too much to hope that it would be possible in practice to introduce compensating sectional price decreases so as to neutralize their effect on the general level of prices. Hoarders of imported articles and other monopolistic elements may take advantage of exchange difficulties to create new artificial scarcities. Briefly, domestic sources of inflationary pressure are assuming greater importance. While this uncharted territory lies outside the ambit of this article, it would no doubt prove a challenging field of exploration for future research.