MANUFACTURING, THE BALANCE OF PAYMENTS AND CAPACITY

ESRC Centre for Business Research
Working Paper No. 12

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This Working Paper relates to the CBR Research Programme on Technical Change, Manufacturing Strategy and Industrial Policy

Abstract

The paper examines the contribution manufacturing industry must make if Britain is to restore full employment in the foreseeable future. The main contribution will be to create a more favourable trade-off between growth and external deficits. Estimates are given of the likely improvement in manufacturing net exports which would be necessary to bring a sustained reduction in unemployment without persistent external deficits. The paper provides estimates of the extra growth of output and manufacturing investment expenditure in additional capacity necessary to accompany faster growth of manufacturing production.

Key Words: Investment, capacity, employment, balance of payments.

JEL Classification: E17, E22, F40, L60

Acknowledgements

The authors are grateful to the ESRC for financial support of the project underlying this paper. It forms part of the Technical Change, Manufacturing Strategy and Industrial Policy programme of the ESRC Centre for Business Research at the University of Cambridge.

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Introduction

This paper examines the contribution manufacturing industry must make if Britain is to restore full employment within the foreseeable future and estimates the investment in capacity required if that contribution is to come about. It must be emphasised from the outset that the *direct* contribution of manufacturing in terms of more jobs is likely to be small. The manufacturing sector has been shedding jobs for the past 30 years: over 3.5 million jobs have gone since 1971, mostly during the 1980s. The result is that manufacturing accounts for about 20% of GDP whilst employing about 15% of the workforce. But Britain's small manufacturing sector is highly integrated into international trade. Manufactured exports are over 80% of Britain's total exports of goods, and account for 60% of trade in goods and services. The primary contribution of manufacturing will be *indirect*; by creating a more favourable trade-off between growth and external deficits, it will raise the overall level of activity and employment which it is possible to sustain. By increasing domestic and export sales, it will also generate jobs in industries which supply manufacturing with inputs and services.

The scale of job generation required over the next decade is very large. To restore full employment in the next five to ten years - even in the limited sense of reducing the economically unemployed to the levels experienced in the 1970s - will require the creation of around three million jobs. This is what is required to reduce the currently unemployed, to provide for a rising labour force and provide jobs for the disguised unemployed who would become economically active if more jobs were available (Coutts and Rowthorn, 1995). A necessary condition for this to happen is a sustained growth of output, avoiding the kind of short-lived boom which quickly leads within two years to enormous balance of payments deficits or rising inflation.

We assess the possibility of achieving such a sustained growth by using a model of the UK economy to explore the consequences of alternative

scenarios. This enables us to quantify both the outcome of projections based upon the continuation of existing trends and the magnitude of the changes to these trends which would be required in order to achieve a sustained improvement.

The model is used to show that if existing medium term trends continued, unemployment could only be reduced at the expense of an unsustainable rise in international indebtedness. On the other hand, growth which is compatible with an acceptable external position brings an unacceptably slow reduction in unemployment. We conclude that an expansion of capacity in manufacturing is essential if the economy is to achieve a sustained recovery without running up against a balance of payments constraint. The paper begins by setting out the historical context for the assessment of these changes.

Manufacturing Output, Investment and Capacity Utilisation

The manufacturing sector has an impact on the balance of payments which is far more dominant than its importance in terms of national production. The well-known changes of fortune of the manufacturing sector since 1948 are summarised in Figure 1. Up until the first oil crisis at the end of 1973, output increased at a trend rate of about 3.2%p.a. Between 1973 and 1979 output increased slowly. The great 'shake-out' occurred between 1979 and 1982 when output fell by 16% and 1.4 million jobs were shed. This was followed by a slow recovery in output but further loss of jobs. During the Lawson boom output grew rapidly, reaching by 1988 the level of production last achieved in 1979. After the recession of 1990-92 output has begun to recover and as of the first quarter of 1995 is just back to the level last reached in 1990.

Figure 1 shows two alternative trends. One is a linear proportional trend estimated from 1948 until the second quarter of 1973 (the last period before the oil shock) and extrapolated to 1995. It shows what growth of manufacturing output might have been expected on the basis of the average growth rate achieved during the 'golden age' of post-war economic history if the various structural changes and shocks to the manufacturing sector

had not occurred. The second is a stochastic trend[1] in which large shocks to manufacturing output have a permanent impact by changing the trend. Both trends are entirely descriptive statistical summaries of the historical data for manufacturing production. The stochastic trend can be interpreted as having an upward component of about 3.2% p.a. with 'random' shocks to output modifying this trend. After the shake-out of the early 1980s manufacturing output recovered towards a lower and more slowly growing trend of output. In the Lawson boom output and trend were close together. The recent recovery in output once again brings output close to this trend.

The underlying position of 'full capacity' output for manufacturing may lie somewhere between these two trends. Figure 2 suggests that since 1980, manufacturing investment has been no higher on average than during the previous decade in absolute terms - in each decade investment spending at 1990 prices averaged £11.8 billion. There is also substantial evidence of the loss of industrial capacity during this period through capital scrapping. The CBI indices[2] of capacity utilisation in Figure 3 suggest, despite the low level of output from which production recovered after 1982, that 'normal' rates of capacity utilisation were restored by the mid 1980s. The boom of 1987-89 raised capacity utilisation rates to abnormally high levels. This is consistent with the rapid growth of manufactured imports during this period.

This evidence is consistent with the view that though the small manufacturing sector which survived the shake-out may have been more efficient, there was a serious shortage of capacity caused by scrapping and chronic under-investment since the 1980s, making it difficult for the sector to maintain growth rates of output above 3.5%p.a. As of the first quarter of 1995, utilisation rates suggest that the sector is once again nearing capacity shortages. The consequences for the whole economy of this constraint on manufacturing output are explored in the next section.

Manufacturing and the Balance of Payments Constraint

The recovery from recession has been under way since 1992 led by exports, with growth of consumption constrained by phased tax increases.[3] The

main macroeconomic factors which might make it impossible to permit continued steady growth of GDP, at a rate which is fast enough to keep unemployment falling, are the risks of growing balance of payments deficits and rising inflation as shortages of capacity put upward pressure on profit margins and wage settlements respond to anticipated rising prices.

To gain some idea of the extent to which the balance of payments might limit future growth of the UK economy we use a small macroeconomic model.[4] In a regime of internationally mobile capital flows, the external balance of payments constraint takes the form of an insolvency constraint. The UK has at present net external assets of about 5% of GDP, but if current account deficits of the order of 3% of GDP persisted (which is less than during the Lawson boom), it would within a few years result in a substantial accumulation of external debt (and a rising burden of property income payments).

We must stress that the projections we use are not forecasts: they are conditional projections of what is feasible given the past performance of the economy. The model provides a detailed analysis of: visible trade, including oil, food and manufactures; invisibles such as shipping and civil aviation services, tourism, financial and consultancy services; and interest, profit and dividend flows from UK net assets invested abroad. Given assumptions about the growth of world trade, domestic spending growth, external competitiveness and real interest rates, the model generates the feasible growth of GDP, employment and unemployment consistent with these assumptions. It also generates the implications for the current account balance and net external wealth or debt.

The model is first used to provide a base projection by assuming that the behaviour of the key parameters will be in line with the past medium term performance of the UK economy. Table 1 sets out the main assumptions of the base projection from 1996 until 2005. World trade is projected over a ten year period to grow at about the average rate achieved during the 1980s. Relative cost competitiveness is maintained from 1995 and domestic spending is allowed to grow at 2.5%p.a.

Table 2 and Figures 4-9 summarise the main features of the base projection. On these assumptions GDP can grow at an average of 2.4% p.a. over the ten year period. This is consistent with an increase in employment of 2.2 millions over ten years, and, given the assumption about the growth of the workforce shown in Table 1, implies a reduction in unemployment of about 1 million. However Figure 4 shows that the projected current account balance deteriorates at a rate which is not sustainable in the medium term and we need to analyse this further.

There is considerable uncertainty surrounding these calculations. They are based on macroeconomic data which are themselves estimated with significant error, and the model employs the standard methodology of estimating structural econometric relationships with all their pitfalls. Whether the projected growth does turn out to be inconsistent with medium term external balance will depend mainly on trade in manufactures, financial services and net property income, these being the components of the current account balance with the greatest potential for better future performance than in the past. The division of the current account balance between manufactures and other sectors is shown in Figure 6 for both the historic and projected period. It shows a worsening of the balance for both manufactures and for non-manufactures components of the current account over the decade to 2005.

A more detailed analysis of these other components is shown in Figure 7. The projection for financial services takes account of the abnormally low earnings from insurance underwriting from which the industry is just emerging. The projection assumes that financial service earnings will continue to be a buoyant and dynamic part of invisible earnings, increasing as a share of GDP at a faster rate than recently.

The disaggregation shows that the overall upturn in 1994 was dominated by net property income which increased sharply that year. This appears to be an exceptional change with most of the improvement arising from net earnings from direct investment. If this heralded a permanent increase in the share of net IPD income in GDP, it would relax the balance of payments constraint for at least the next five years and would make possible a more

rapid creation of jobs. Part of the improvement, however, arises from unusually low outward income flows from overseas investments in banking, insurance and security trading which are likely to be reversed. Moreover as Figure 7 shows, the sector is characterised by sharp short run fluctuations of this sort. The base projection therefore assumes that this cause of the high surplus on net property income will gradually decline. However the *continued* decline in net IPD stems from the swing from surplus into deficit of the UK's net external assets position, shown in Figure 8, which is itself a result of the worsening manufactures trade position. Therefore, even if the exceptional features of the 1994 IPD position were assumed to be maintained, this would merely delay by about 5 years the time at which the net IPD balance would become negative.

It is therefore evident that the performance of the current account in this base case is critically dependent on the performance of trade in manufactures. An earlier study using this model has shown that the alternative of the spectacular transformation of the other sectors' trade performance required to alleviate the balance of payments constraint is beyond what could reasonably be expected (Cosh, Hughes and Rowthorn, 1993). Therefore we must look carefully at the conditional predictions for the trade in manufactures shown in Figure 9, which assume that the long term trends towards slower growth of exports compared with imports will reassert themselves.

Although the base case increase in jobs would represent a substantial step towards restoring full employment, it takes no account of the likely change in participation rates of the labour force as the increased availability of jobs encourages the economically inactive to seek work. Even so it is still well short of full employment in the limited sense of restoring unemployment rates to the average of the 1970s. Furthermore, whilst the projected growth of GDP is sustainable for a few years, the trend deterioration in the balance of payments would ultimately require the growth rate of GDP to slow down.

Sustainable medium term growth

The base case yielded an improvement in unemployment which was unlikely to be sustained in the medium term due to the external position. We now explore the possibilities for sustainable growth through an improvement in manufacturing performance. Our procedure is first to modify the base projection, so that the balance of payments, although in deficit, shows no trend deterioration after 1997. The reason for this is that we wish to compare the output and employment effects of improved trade performance (brought about, for instance, by an increase in manufacturing investment) with a projection which, although it generates slower growth than in the base case, is sustainable in the medium term with a supportable balance of payments position. This slow growth scenario is achieved by domestic spending growth being cut to 2% p.a. compared with 2.5% p.a. in the base projection. The other assumptions identified in Table 1 remain unchanged and the consequences of the slower growth are shown in Table 3. This reveals that the growth of GDP at 2.2% leaves unemployment at over 2 million at the end of the decade and the current account deficit remains at its 1997 level of just under 2% of GDP throughout the period. This modest sustainable growth scenario is a realistic assessment of the medium term growth potential of the UK economy on the basis of past trends and in the absence of the windfall gain provided by North Sea oil in the 1980s. It is used as the basis for a comparison with a scenario in which we postulate improved manufacturing trade performance based upon an expansion of manufacturing investment. We proceed first by investigating the likely order of magnitude of the growth of manufacturing output which would be necessary to supply the required increase in net exports. We then turn to estimate the likely scale of investment which the manufacturing sector would need to undertake to meet the output requirement, based on past relationships.

From export-led recovery to investment-led expansion

The recovery of output and employment from the recession of 1990-92, has so far not been matched by much rise in investment. As Figure 2 shows, investment in manufacturing has only just begun to increase in

1994 and has a long way to go to before reaching the previous peak of 1990. However several factors are favourable to prospects for a rise in investment. The first is that the balanced recovery of aggregate demand provides a reasonable basis on which to expect continued growth, so that investment projects begun now can expect to be profitable when they are completed. Profits of industrial and commercial companies have begun to rise sharply, and companies' balance sheets and financial surpluses are much improved compared with 1990. Firms have larger sources of funds from which to finance a major investment programme. Although monetary policy has begun to tighten since the second half of 1994, interest rates are lower than during the 1990-92 period. So long as interest rates are not increased sharply, the prospects for investment are good. The CBI intentions survey for the first quarter of 1995 suggests that investment in manufacturing industry will increase strongly during the course of 1995 (CBI 1995). The pressure on capacity, reported by the CBI, will also provide an incentive to invest, not only for replacement or to incorporate technical innovation into the existing capital stock, but to add to production capacity.

One feature which caused the prolonged high unemployment of the 1980s was the loss of capacity which turned Keynesian unemployment (caused by the restrictive fiscal and monetary stance of governments to control inflation in their economies after the second oil shock) into structural unemployment.[5] This is an example of hysteresis where sustained low demand gradually brings capacity utilisation back to normal rates through adjustment to lower capital stock and loss of jobs.

Loss of capacity through the closure of plants or entire firms is not quickly reversed. But when firms become confident of conditions in which to re-invest in capacity one may expect several beneficial effects on productivity and trade performance to follow. It is reasonable for example to expect that investment in new capacity will introduce best practice technology and raise average productivity. In addition, in manufacturing markets dominated by trade in differentiated products, an expansion of capacity associated with product, as well as process innovation, may generate more export sales *at given levels of world demand* by increasing the variety of

products on offer. Firms with more capacity may thus expect to capture more export orders as a result of improvements in non-price competitiveness. Investment in capacity will also have a direct effect on employment as labour is recruited to work with new plant and equipment (unless extreme assumptions are made about the short run elasticity of substitution of capital for labour).

These factors are plausible as microeconomic hypotheses at the level of the firm and industry, but it is notoriously difficult to find econometric evidence of their effects on trade and employment at the macroeconomic level. (For a review of the relevant macroeconomic evidence see Rowthorn, 1995). It is also notoriously difficult to quantify the additional potential supply of output generated by a given amount of investment in increased capacity. We can however make some progress in assessing the magnitude of investment that would be associated with significant changes in employment prospects in the medium term. We can do this by using our model to work backwards from the trade improvements necessary for sustained expansion in the medium term, to the employment and output changes with which they would be associated and then to the investment programme that would be implied.

Suppose that from 1995 the manufacturing sector begins a programme of investment to expand the capital stock. Then as a result of a combination of improved non-price competition and increased product variety, suppose that the competitive position of UK manufacturing gradually increases over the next ten years. We can model this by modifying our slow growth scenario to generate a great enough improvement in the UK's manufactured trade performance to bring the current account deficit into approximate balance by the end of the period. Let us call this the 'investment in capacity' scenario.[6] The improvement in the current balance which this produces is illustrated in Figure 10. It is important to remember that the slow growth and investment scenarios share common assumptions on the projected growth of world trade, domestic spending and relative cost competitiveness of internationally traded goods and services. They differ as we have seen because the equations for the volume of manufactured exports and imports are modified in the 'investment in capacity' scenario to accelerate the

growth rate of exports and diminish the growth rate of imports on a scale which is sufficient to hit the target of a zero balance in the current account of the balance of payments by 2005. The effect on the trends in the manufactured export and import volumes is gradual as shown in Figure 11, where the improvement in favourable trends is greater after 2000. This is consistent with the assumption that the trade benefits of an investment programme would be small in the short term. The current account initially moves into deficit by about 1%-1.5% of GDP, but the improved manufactured net export growth gradually restores the current account to zero balance by 2005. Better net export growth, compared with the slow growth scenario, improves the trade-off between GDP growth and the balance of payments and permits a faster sustainable growth of GDP and total employment.These improvements are shown in Table 3 in comparison with the estimates for the slow growth scenario.

From improved trade performance to output and investment

The next step is to calculate the likely increase in manufacturing output which would be required to supply the additional exports and to displace imports in domestic sales of manufactures. Figure 12 shows the ratio of the volume of manufactured exports to the volume of manufacturing production since 1970, scaled so that the ratio in 1990 is the value of exports as a share of gross output (derived from input-output tables). The proportion of manufacturing production which is exported has risen steadily and approximately doubled between 1970 and 1995. For comparison, the trend in the export propensity between 1970 and 1980 is extrapolated to 1995. The export share fell relative to trend between 1980 and 1983, following the decline in world trade after the second oil shock. This was despite the large drop in UK manufacturing production which occurred during this period. An important feature of the collapse of the manufacturing sector was the high overvaluation of the exchange rate, which would have reduced export demand in particular. Thereafter, the share resumed its upward path and by 1994 had returned to the long-term trend. For the projection period in Figure 12 we make the heroic assumption that the share of exports in manufacturing production will continue to rise on trend as the economy becomes further integrated into European and World markets[7]. From the

projected growth of export volumes and the projected rise in the export/ production ratio we can derive a path for the growth of manufacturing output in the decade to 2005 which is about 3.7% p.a.

An alternative approach is to use the ratio of imports to domestic expenditure to provide an estimate of domestic expenditure on manufactures. Figure 13 shows the ratio of the volume of imports to domestic sales of manufactures (supplied from domestic production and imports). We assume that this import propensity will increase at a slower rate than under the slow growth scenario as imports are displaced in domestic sales because of better non-price competition and increased product variety[8]. From the projected growth of import volumes and the projected rise in the import-demand ratio we calculate a path for the projected growth of manufactured sales. From this and our projected trade balance for manufactures we derive an alternative path for the growth of manufacturing production which averages about 2.9% from 1995-2005.

If the export-output ratio were to increase more slowly than we have assumed, the required growth in output would be higher than 3.7% p.a. Similarly if the import-demand ratio increased by more than we have assumed, the resulting growth in output would be less than 2.9% p.a. The tentative conclusion we draw from these calculations is that the likely range of output growth consistent with achieving the required improvement in net exports is about 3%-4% p.a.

The central projection for manufacturing output of a 3.5% p.a. average growth rate between 1995 and 2005 derived from these two estimation procedures is shown in Figure 14, which plots annual manufacturing output between 1948 and 1995. For comparison the post-war average trend rate of growth up to 1973 of 3.2%p.a. is extrapolated to 2005. This shows that the required growth of manufacturing output would have to be only a little faster than the 'golden age' average growth rate, although considerably better than the miserable growth rate of 0.8% p.a. achieved between 1979 and 1995. From this middle estimate we calculate the growth rate of investment, given the growth rate of output, based on the past statistical relationship between the two over the period 1956-94[9]. The final calculation

is the annual investment expenditure (at constant prices) implied by the growth in manufacturing output. This is shown in Figure 15.

The ten year programme of investment implies a substantial increase in capital stock and by the end of the period capital formation would be over £20 billion per annum compared with investment of about £12 billion in 1995. But the increase in investment spending needed over the first five years is only what is required to bring investment back up to the peak of 1989. As Figure 15 shows this rate of increase in investment expenditure has been achieved in previous periods, e.g. between 1984 and 1989. The orders of magnitude which emerge from these calculations suggest that although manufacturing firms would need to spend substantially more on investment in the future, the sums required are not impossibly large.

Conclusions

We have shown that with slow but sustainable growth of GDP in the range of 2%-2.3% p.a., the increase in employment eventually matches the projected growth of the workforce and unemployment does not fall much below 2 million. The simulated effect of the manufacturing investment programme[10] allows steady growth of about 2.3%-2.5% p.a. with sufficient improvement in manufactured trade to alleviate the balance of payments constraint. The increase in employment might allow unemployment to fall to about 1.4 millions. The growth rate of manufacturing output consistent with this simulation would be about 3.5%p.a. While growth at this rate might be fast enough to reverse the thirty year decline in employment, most of the increase in private sector employment would take place outside manufacturing.

A number of factors might improve the prospects for unemployment beyond those identified in the model. The current balance might be allowed to remain in deficit with some expansion of domestic spending. If the economy could sustain this higher demand without inflation, the prospects for unemployment would be improved. If the growth of trade in European Union economies or in the rest of the World were better than assumed in these projections then the sustained growth of the UK economy could be

higher with attendant greater job creation. If the job creation made possible by GDP growth without external constraints were supplemented by special employment measures such as more young people staying on in further education and training, more public sector employment and shorter hours[11] it might be possible to reduce the unemployment rate to about 3% of the workforce. This estimate takes no account of increased participation of the labour force as employment increases. But it shows that in combination with 2.2 million jobs and special employment measures creating another 0.8 million jobs, a target of 3 million could be achieved. This would probably reduce recorded unemployment to less than one million people. Even if this can be achieved in the next five years, by the end of the twentieth century the British people will have lived through a quarter century with unemployment continuously over 1 million.

To achieve the kind of sustained investment and improved competitive performance which even this would imply will require a major and credible policy commitment. The extent of the investment expansion will be strongly influenced by the specific macro and fiscal policy environment within which manufacturing firms must make their investment decisions. In addition to maintaining a tight control on consumption it will be necessary via interest rate and fiscal policy to create and maintain attractive conditions for manufacturing investment. In this context consideration should be given to fiscal incentives to encourage longer term investment in innovation enhancing activities such as R&D expenditure, as well as to raise the relative expected return on manufacturing investment generally. A more focussed approach here could be built on the various technology foresight exercises currently under way or completed in a variety of manufacturing and related sectors. These could form an important input into an industrial policy oriented towards enhancing capacity and efficiency in manufacturing. Important too will be policies aimed at the longer run improvement of the nation's stock of human capital through the reform of education and training systems and policies directed towards the enhancement of corporate and personal saving. Here too fiscal policy has a role to play in the encouragement of retentions in large and small firms and the expansion of venture capital provision.

Notes

1. The trend is estimated using the Beveridge and Nelson (1981) decomposition of a time series into a random walk component and a cyclical component, using a low order ARIMA representation.

2. Figure 3 plots the percentage of manufacturing firms in the CBI Survey reporting that they are *not* working below capacity, i.e. a rise indicates that output is increasingly being constrained by capacity limitations.

3. The recovery has also been helped by the fall in interest rates made possible by Britain's exit from the ERM, which helped alleviate households' and companies' balance sheets and reduce debt payments.

4. This model was originally developed by the Cambridge Economic Policy Group led by Professor Wynne Godley. Recent development has been under the auspices of the ESRC Centre for Business Research.

5. See Rowthorn (1977) and Rowthorn (1995).

6. The assumption of the investment in capacity scenario is that export volume growth will increase relative to world **demand** for manufactures (compared with the slow growth scenario) and that import volumes will grow more slowly relative to domestic **demand** for manufactures. Neither of these effects can easily be included in the equations for exports or imports on which the projections are based because we lack direct historical evidence of the size of the effects. In principle the improved trade performance should have a symmetrical impact on higher domestic sales by UK producers, causing import substitution to rise. The improvements are therefore simulated as an *exogenous* acceleration of the growth rate of exports and some diminution in the growth of imports.

7. The trend line is constrained to have an upper limit of 50% in the projection. The trend line increases but at a slightly decelerating rate described by a logistic curve.

8. This is achieved by constraining the trend line to an upper limit of 60% and extrapolating a logistic trend from 1995.

9. We assume that skilled labour will not pose a constraint on this expansion - for a discussion of this issue see Michie J. and Grieve-Smith J. (forthcoming 1996)

10. In practice the investment in increased capacity would be widespread across most sectors of the economy and not confined to manufacturing industry.

11. An estimate of the impact of these measures is discussed in Coutts and Rowthorn (1995).

FIGURES AND TABLES

Figure 1 Manufacturing Output and Trend

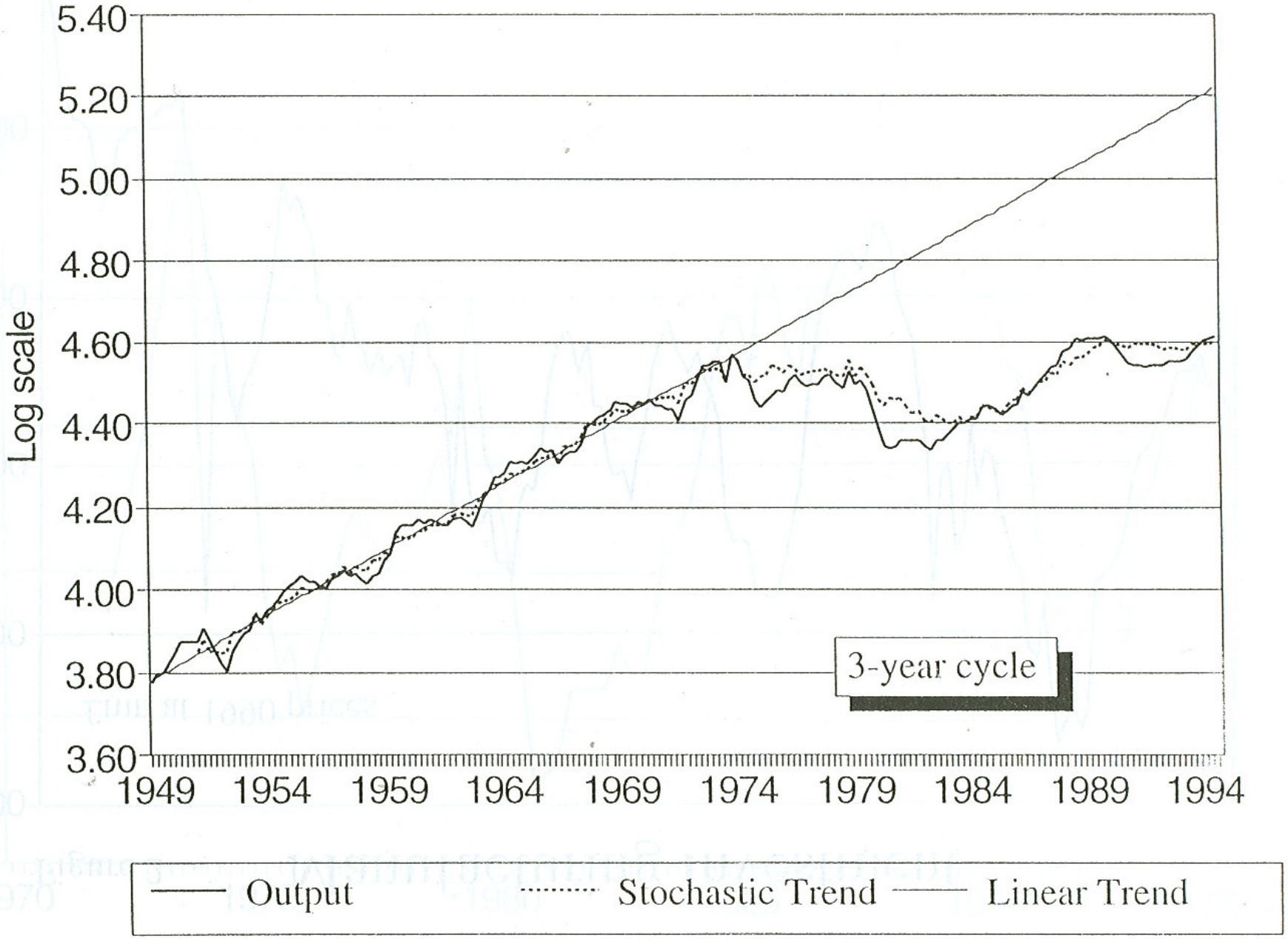


Figure 2

Manufacturing Investment

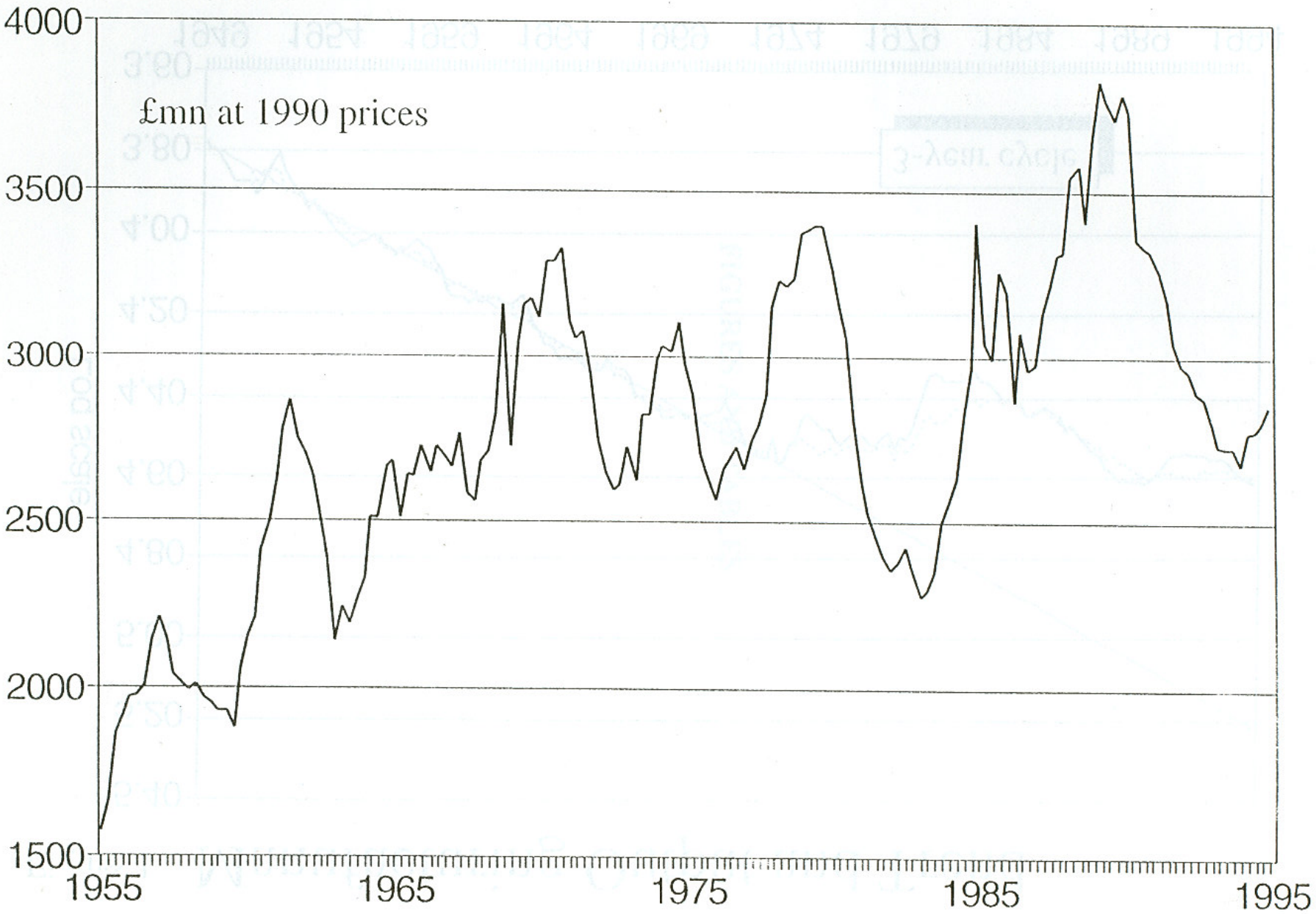


Figure 3

CBI % Capacity Utilisation

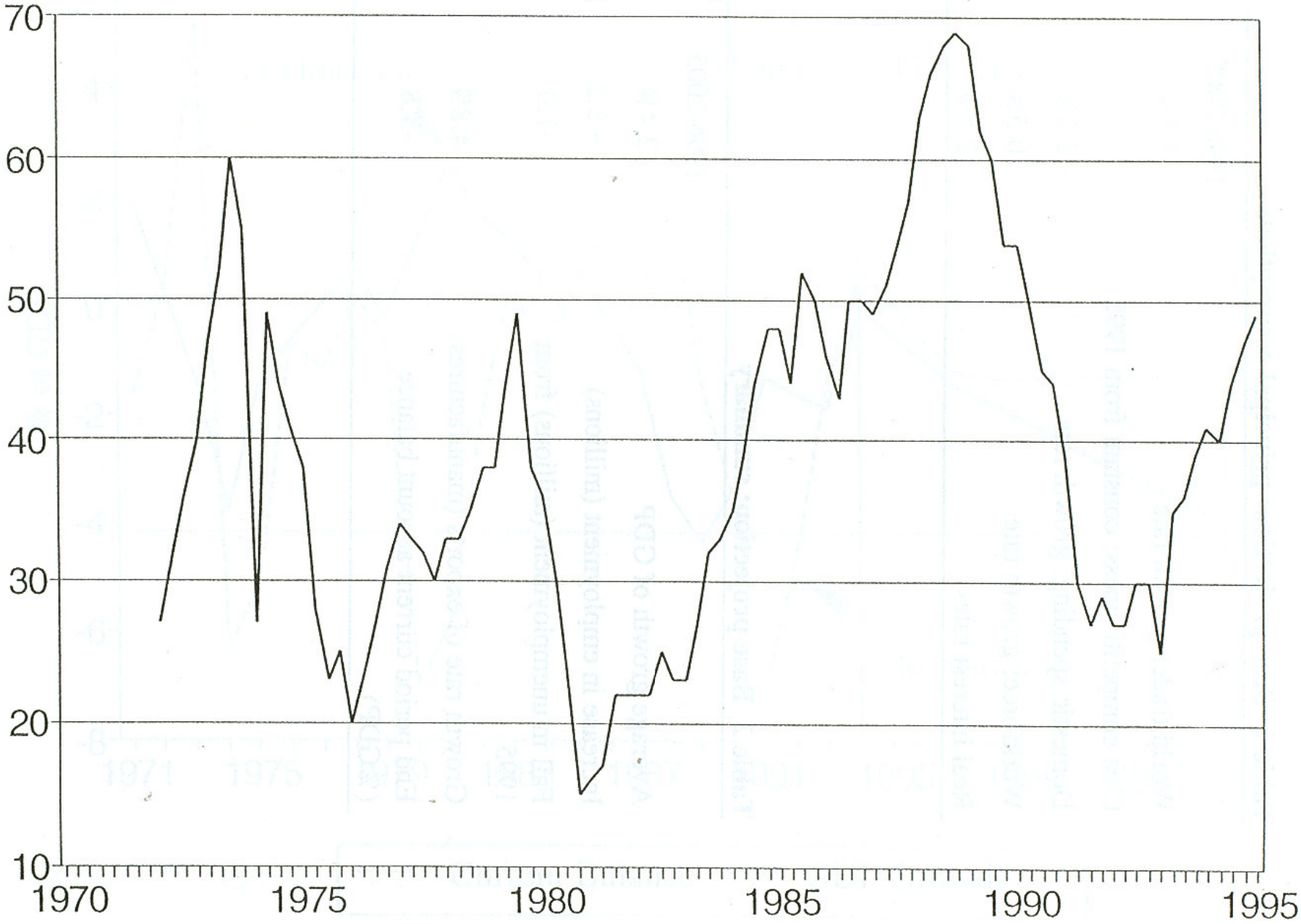


Table 1 Base projection: principal assumptions

	1996-2005
World trade: growth rate	5.5%
Cost competitiveness: constant from 1995	
Domestic spending: growth rate	2.5%
Workforce: growth rate	0.5%
Real interest rates	2.5%

Table 2 Base projection: summary

	1996-2005
Average growth of GDP	2.4%
Increase in employment (millions)	+2.2
Fall in unemployment (millions) from 1995	-1.0
Growth rate of exports (manufactures)	4.8%
End period current account balance (%GDP)	-3.8

Figure 4 Base Projection: Current Balance and GDP Growth

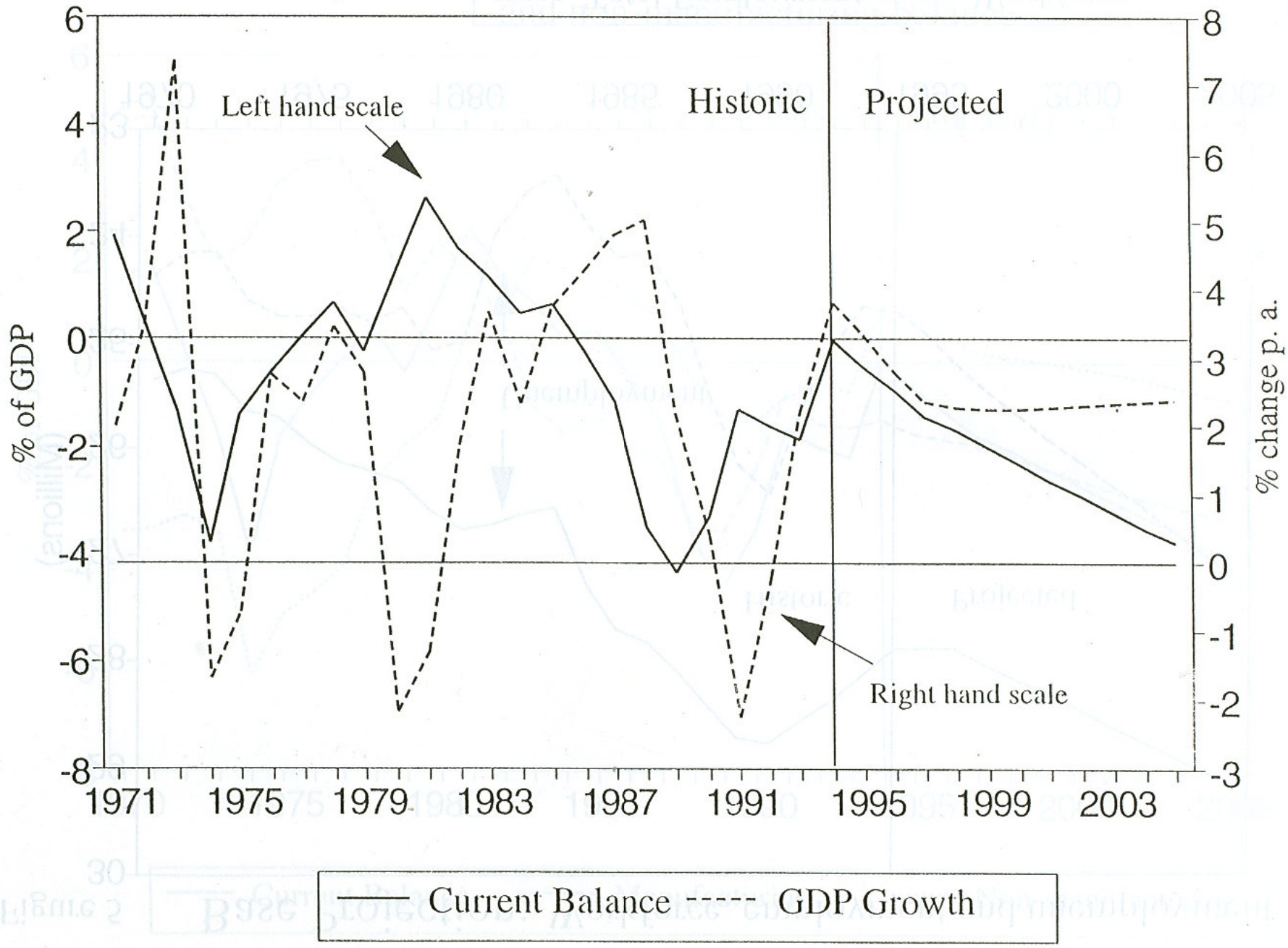


Figure 5 **Base Projection:** Workforce, employment and unemployment

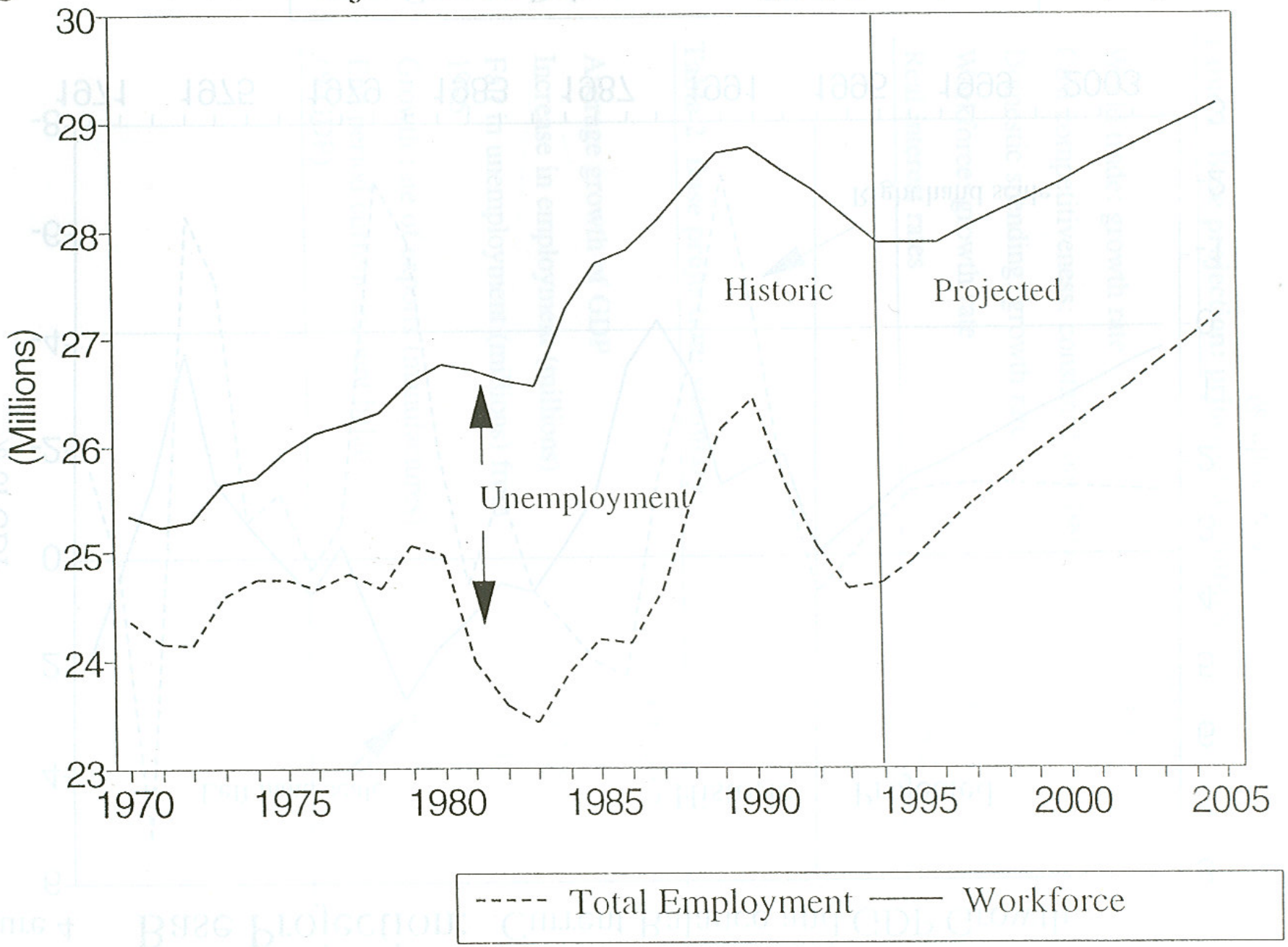


Figure 6 **Base Projection:** Current balance, manufacturing balance and non-manufacturing balance

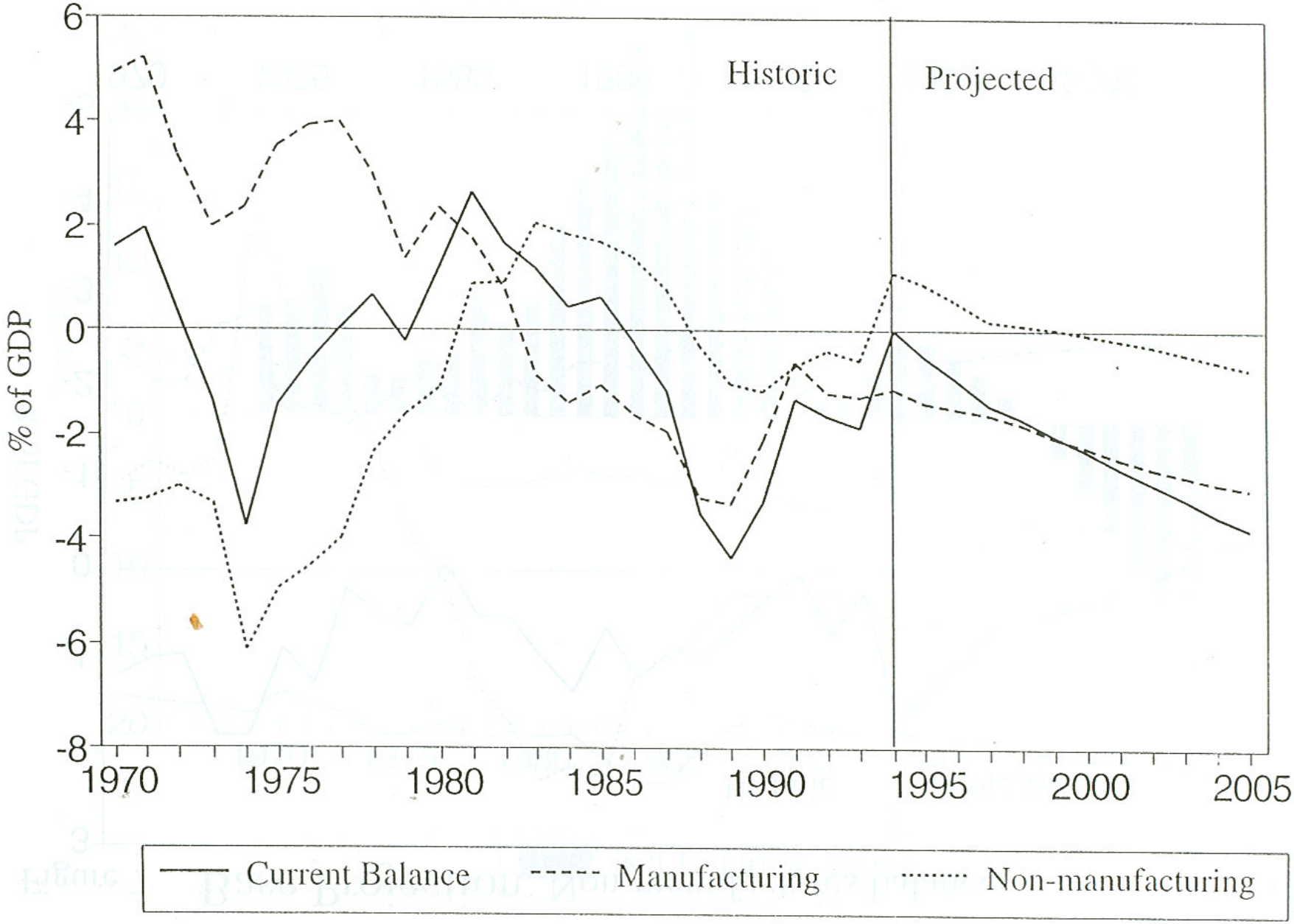


Figure 7 **Base Projection:** Non-manufactures balance

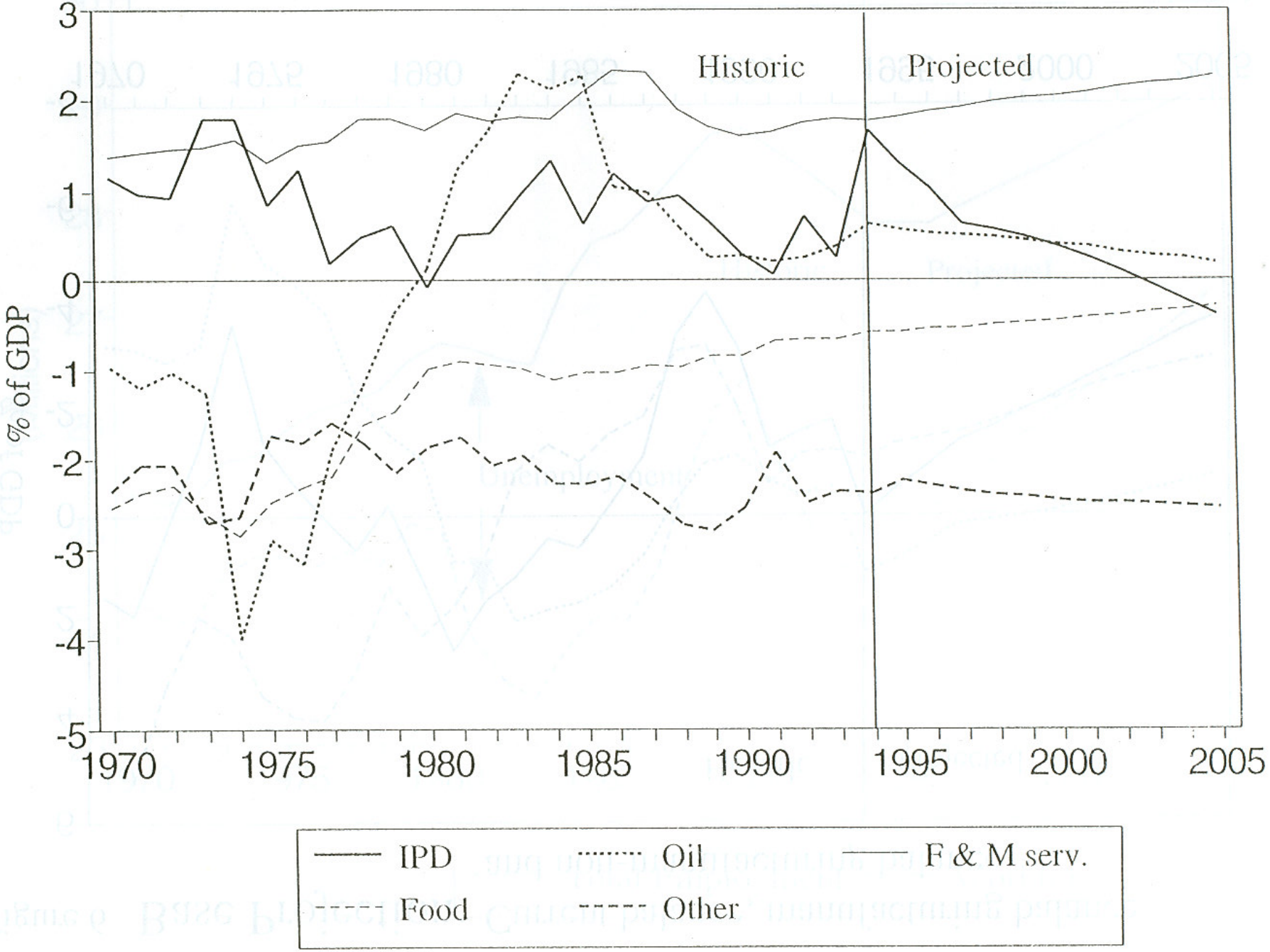


Figure 8 **Base Projection:** Net external assets

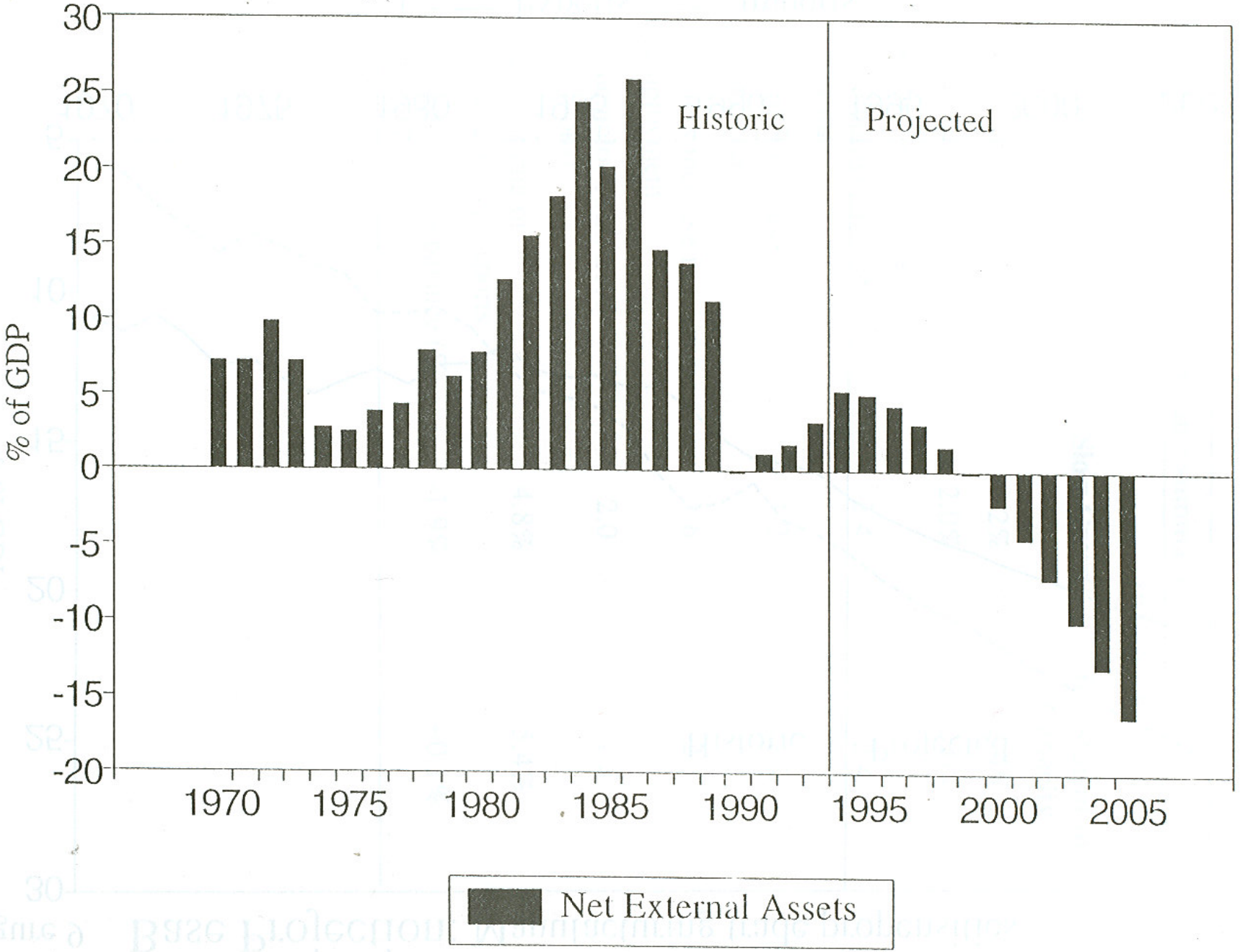


Figure 9 **Base Projection:** Manufacturing trade propensities

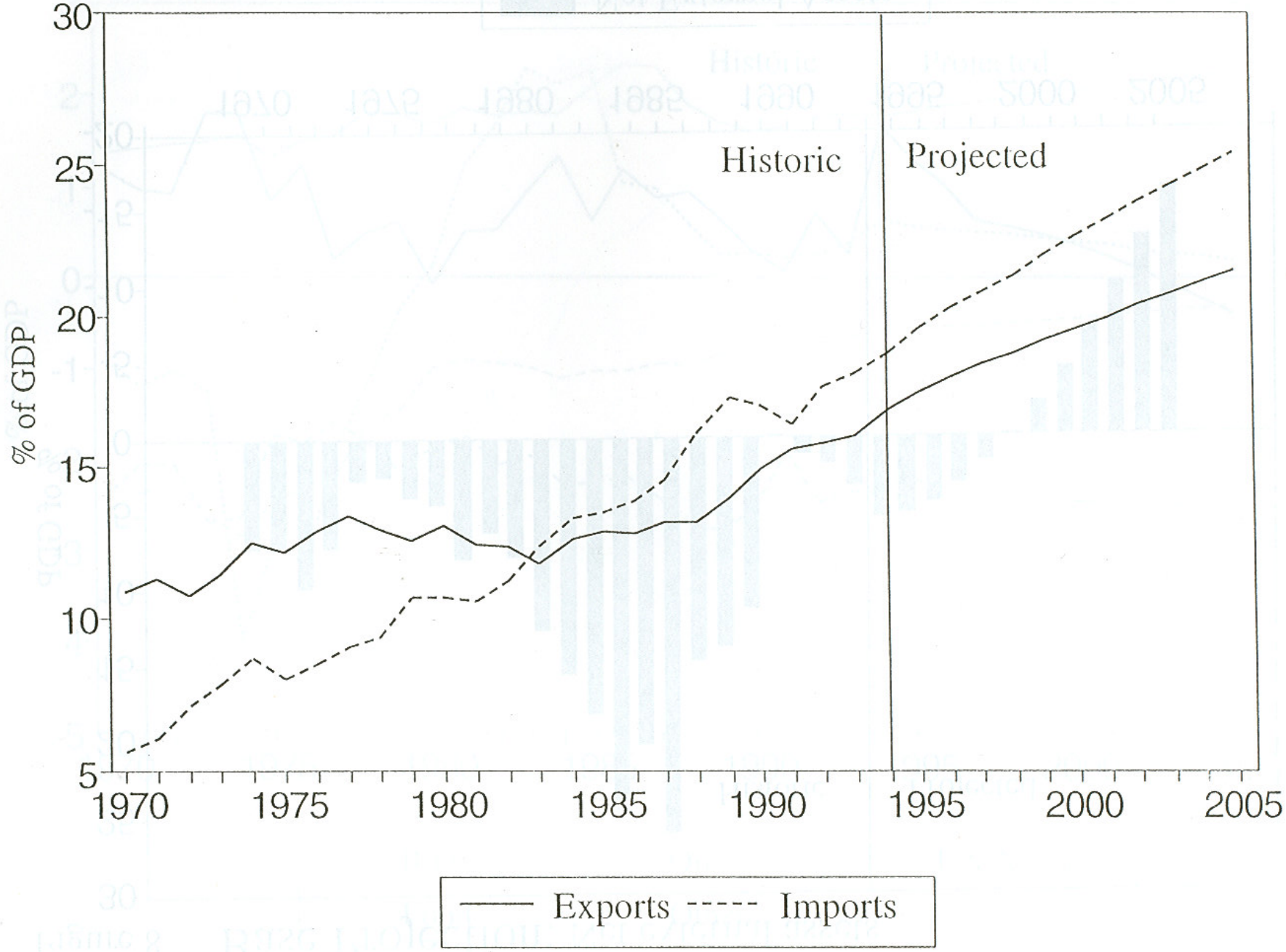


Table 3 Alternative projections: summary

	1995-2005	
	Slow Growth	**Investment in Capacity**
Average growth of GDP	2.2%	2.4%
Average growth of domestic spending	2.0%	2.0%
Unemployment: 1995 (millions)	2.4	2.4
plus increase in workforce	1.2	1.2
less increase in employment	1.6	2.1
Unemployment: 2005 (millions)	2.0	1.5
Growth rate of manufacturing exports	4.8%	5.4%
End period c/a balance (% of GDP)	-1.9%	+0.1%

Figure 10 Investment in Capacity Scenario: Current account, manufacturing and non-manufacturing balances

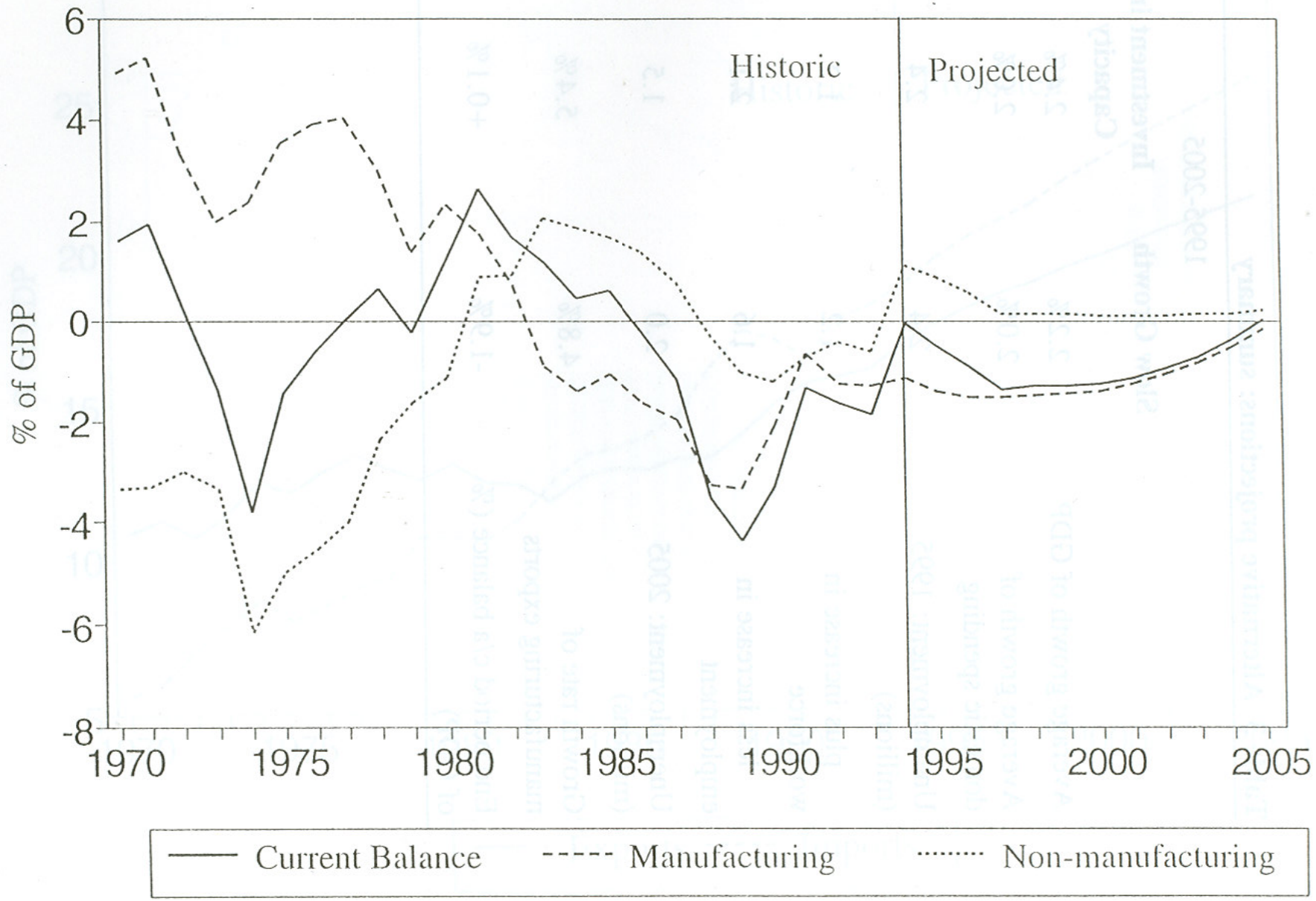


Figure 11 Investment in Capacity Scenario:

Manufacturing trade propensities

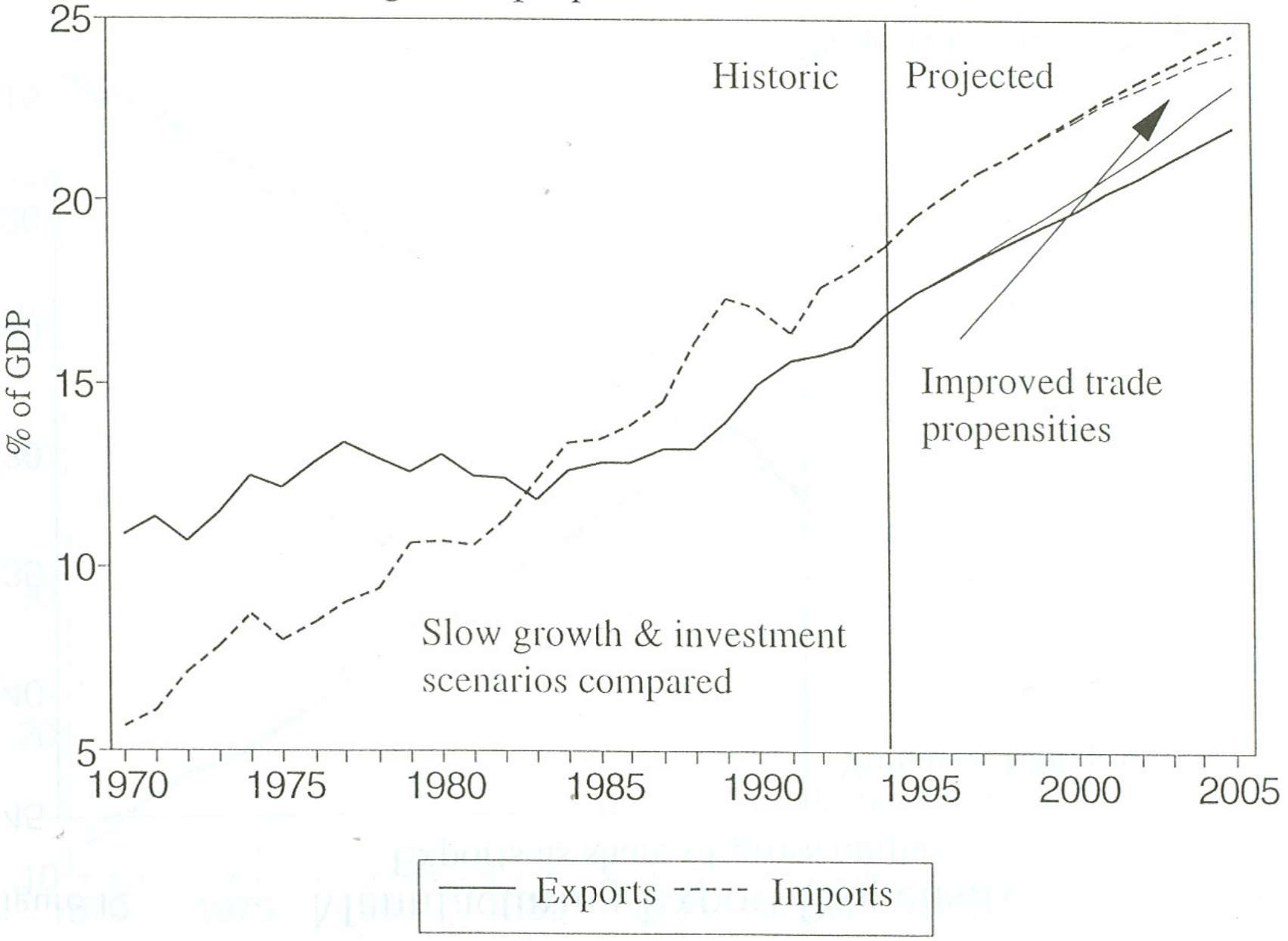


Figure 12

Manufacturing Export Propensity

Exports as share of gross output

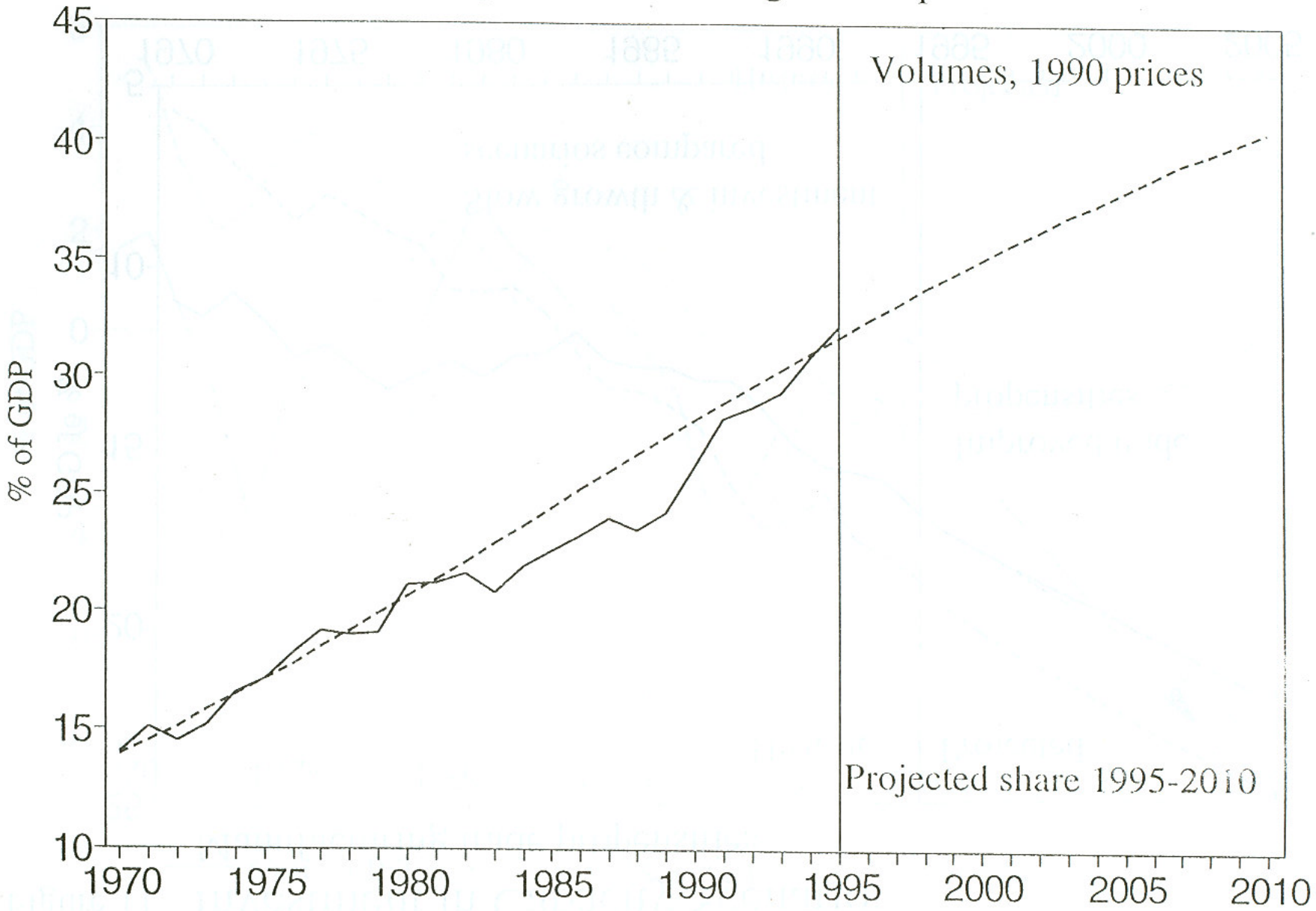


Figure 13

Manufacturing Import Propensity

Imports as share of Demand

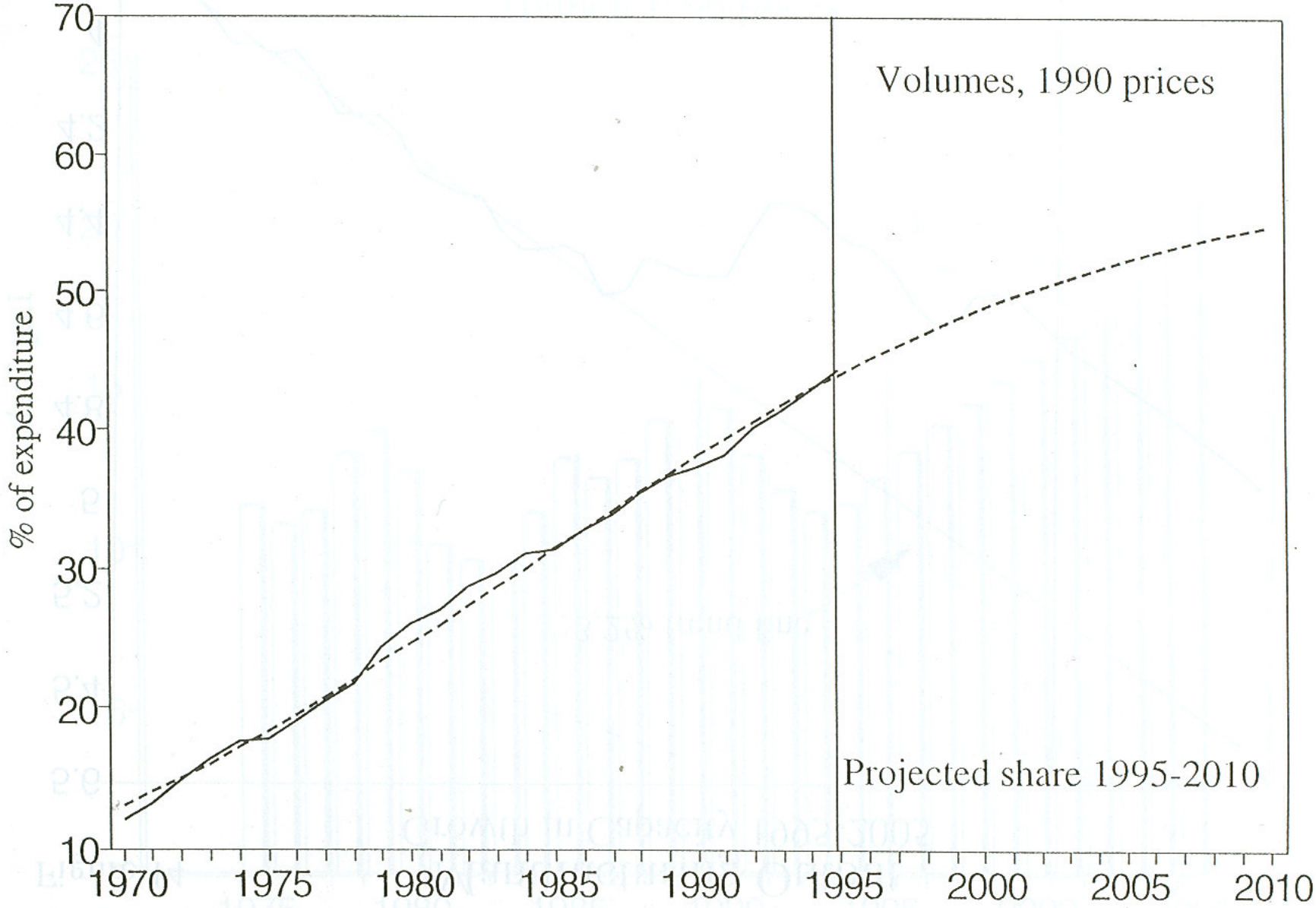


Figure 14

Manufacturing Output
Growth in Capacity 1995-2005

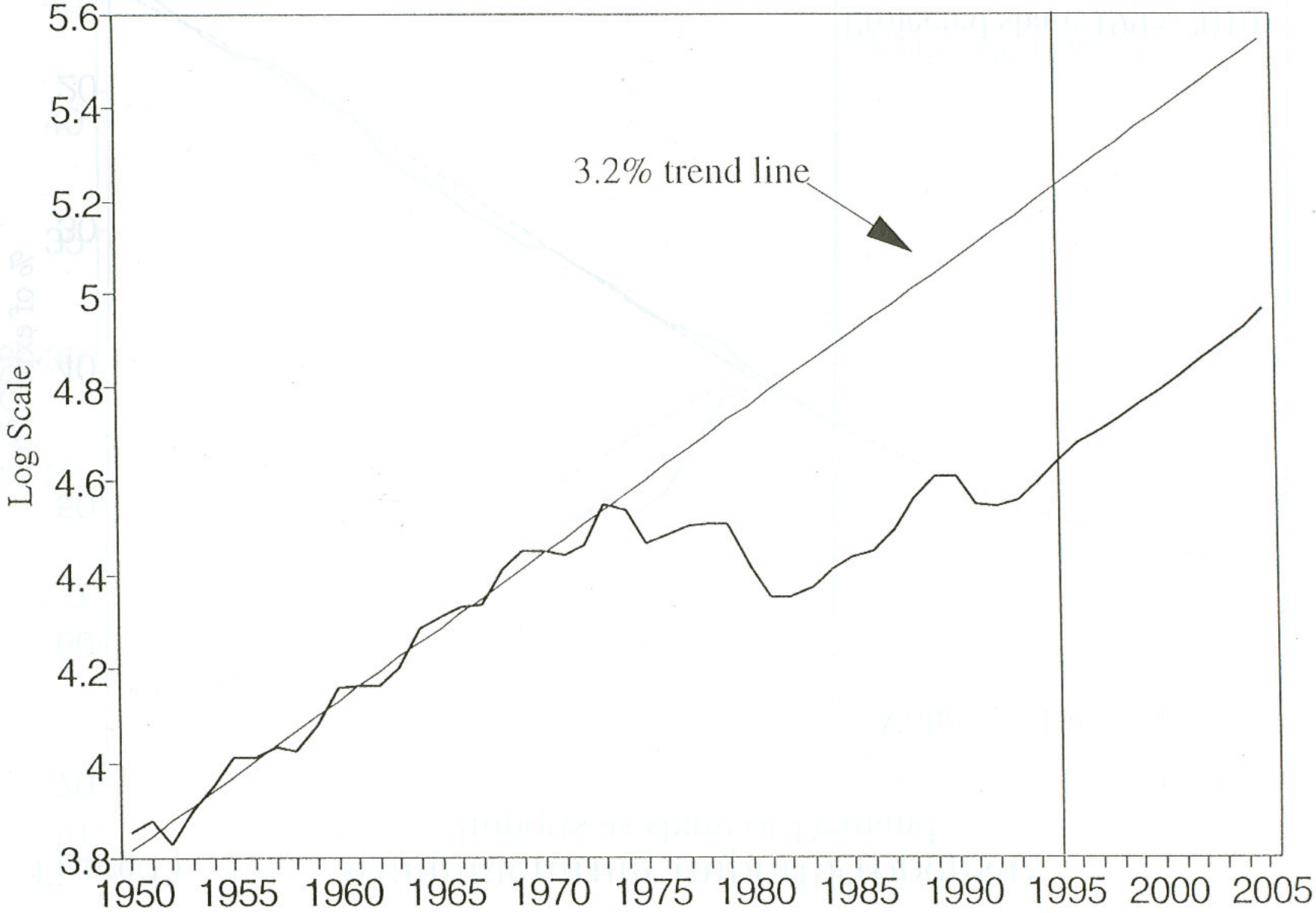
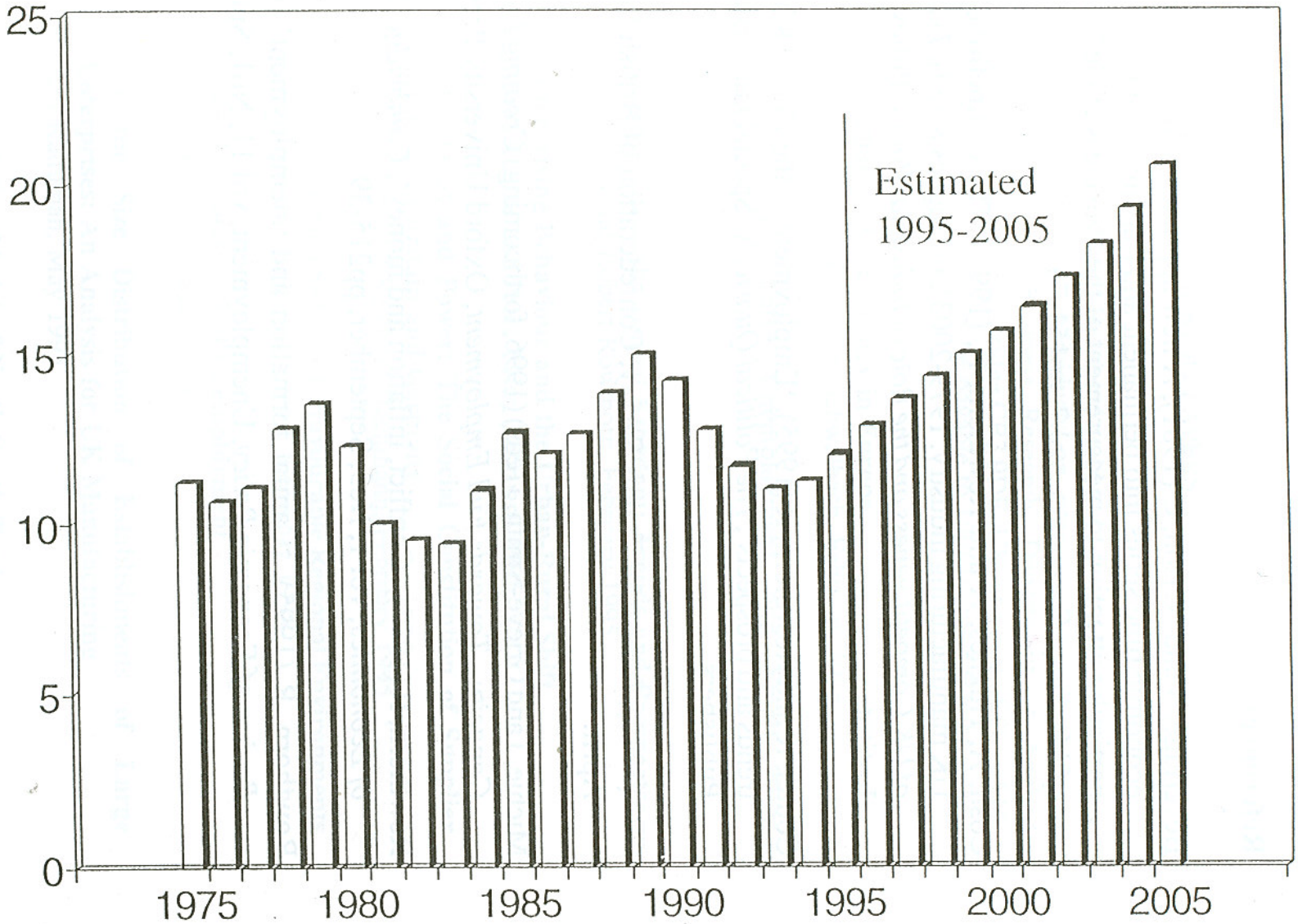


Figure 15

Manufacturing Investment

£billion 1990 prices



References

Beveridge, S and Nelson, C (1981), A new approach to decomposition of economic time series into permanent and transitory components with particular attention to measurement of the "business cycle"', *Journal of Monetary Economics*, vol 7, pp151-74.

Cosh, A, Hughes, A and Rowthorn, R, (1993) 'The competitive role of UK manufacturing industry: 1979-2003', in Hughes K (ed), *The Future of UK Competitiveness and the Role of Industrial Policy*, Policy Studies Institute.

Coutts, K and Rowthorn, R (1995), 'Employment in the United Kingdom: trends and prospects', *The Political Quarterly*: Special Issue, Blackwell Publishers.

CBI (1995), *Industrial Trends Survey*, Confederation of British Industry, April.

Michie, J and Grieve-Smith, J (eds) (1996, forthcoming) *Creating Industrial Capacity - Towards Full Employment*, Oxford University Press.

Rowthorn, R (1977), 'Conflict, inflation and money', *Cambridge Journal of Economics*, vol 1, No3, September, pp215-39.

Rowthorn, R (1995), 'Capital formation and unemployment', *Oxford Review of Economic Policy*, Unemployment, vol 11, No1, Spring.