Week 6. Deindustrialisation.

What is "deindustrialisation"? Why is it occurring in the UK? Is it desirable or possible to reverse the process?

Readings.

Rowthorn, R. E., and J. R. Wells, *Deindustrialisation and Foreign Trade*. [Chapters 1, 10 and 11]. Thorough overview.

Thirlwall, A., *Balance of Payments Theory and UK Experience*. [Chapters 11 and 12]. Very readable classic papers.

Singh, A., 'Industry and the World Economy: a Case of Deindustrialisation,' *Cambridge Journal of Economics* (1977). Reprinted in Feinstein, C. H., *The Managed Economy*. A committed exposition of Verdoorn's Law.

Note: some of the arguments regarding growth and deindustrialisation clearly overlap. You should at least mention all those which are relevant, even if you do not discuss them in detail.

ROWTHORN AND WELLS,
Deindustrialization And Foreign Trade.

Chapter 1.

1. Rowthorn and Wells define "deindustrialisation" as a decline in the share of industry (mainly manufacturing) in total employment. It is determined by:

a) the level of economic development.

b) the phase of the business cycle.

c) the structure of foreign trade. (p5).

2. Rowthorn and Wells distinguish between "positive" and "negative" deindustrialisation. The former occurs when labour is shed as a result of manufacturing productivity rising faster than output: the displaced workers find new jobs in the service sector. Negative deindustrialisation (i.e. UK experience) is characterised by rising unemployment and stagnant real incomes. A third kind of deindustrialisation occurs due to changes in the structure of foreign trade. (p6). [This typology implies that the causes of "positive" and "negative" deindustrialisation are distinctively different - one is the product of "natural progression" and the other of "failure". But surely whether or not a country manages to absorb the labour released from manufacturing may be entirely unrelated to the *causes* of deindustrialisation? The Rowthorn and Wells argument seems to confound causes and effects].

3. In general, advanced countries either concentrate on manufacturing (whilst importing raw materials and services); or they concentrate production on services and raw materials (whilst importing manufactures). These differences between countries are largely a product of trade specialisation [or do they *cause* trade specialisation?]. However, changes within a country (i.e. deindustrialisation) are rarely the result of a changing pattern of trade - they are usually the result of natural economic development. (p7).

4. The change in the structure of employment over time has been virtually the same in all advanced economies. Agricultural employment declines (eventually to a very low level) as employment in services and manufacturing rises. Eventually, employment in manufacturing also begins to fall and the labour which is shed moves into services (or becomes unemployed!). (p8).

It should be noted that services include some sectors which are quasi-industrial - such as transport and public utilities. In the early stages of industrialisation, employment in the

service sector is also boosted by domestic service (even by 1891 nearly 10% of the UK workforce was in domestic service). In the later stages service employment tends to be pushed up by the expansion of the government sector (education, health, etc). (p9).

5. The process of deindustrialisation can therefore be seen as perfectly "natural". The continuous increase in services first reduces employment in agriculture, then domestic service and finally in the industrial sector. (Note: it is only the *share* of each sector which begins to decline. For example, there has been a rise in the absolute numbers employed in US industry but a decline in its share of employment). (p11).

6. The reason that the proportion of employment in agriculture falls is that technological progress and productivity increases are very great whilst the demand for food is income inelastic. (p14).

 The switch from industry to services occurs for a similar reason. The productivity increase in manufacturing is generally very high, whereas the scope for productivity increase in services is more limited. Yet the real output for both sectors grows at a similar rate, so the result is that labour must shift into services. (p15).

7. It is important to realise that it is not the *demand* for each sector's output which is the driving force of structural change. Demand is often erroneously assumed to be the prime mover towards services because the output share of services (measured in *current prices*) rises more rapidly over time - indicating that demand is growing strongly. But if we measure sectoral changes in *constant prices* then we find that the real output shares of industry and services rise at the same rate over time. The share of services only appears to have risen because the price of services rises more quickly (because there is a higher proportion of wages in total cost). This implies that the productivity of industry must have risen faster than services (output has risen by more than prices); but the income elasticity of demand for each sector is the same.
 From this we can conclude that productivity is the prime mover in the changing structure of employment, rather than demand. (p22).

8. The role of trade can be important in determining the degree of specialisation (services versus manufacturing) but generally it is quantitatively small. The exception to this rule is the UK (p23).

9. Superimposed on the long term trend is the influence of business cycles. Usually the share of employment in industry declines during recessions because investment falls (and most investment is in physical capital rather than services). Also, although there is downward pressure on the level of employment in services, there are also countervailing

forces in that sector. For example, public services may be maintained for political reasons (and may even be increased); unemployed industrial workers may take up jobs in the service sector (either in low-paid tasks such as cleaning or perhaps as new-business start-ups). (p23)

10. Deindustrialisation can be positive (high employment, high income growth) or negative - or somewhere in between, such as Belgium. This distinction is merely an empirical observation, however, and does not imply causation nor ultimate outcome. (p25).

11. Foreign trade can influence industrialisation in two ways - through the level of demand (macroeconomic effects) and through the structure of demand (microeconomic effects).

a) *Macroeconomy.* If a country is constrained by the external balance then it may grow slowly. But a country which is successful in foreign trade (usually manufactures) will not be constrained by the BOP. Hence the government can reflate and output will grow rapidly. Ironically, the very success of the manufacturing sector may lead to its diminution in the long run (even though in the short run the industrial sector may expand as the government increases aggregate demand). This is because economic growth is unerringly associated with a reduction in manufacturing employment. (p26).

By contrast, if the trade performance of a country is poor (or deteriorates) then investment may decline and push down manufacturing employment. Efforts to keep up employment will have to be curtailed when they become excessively expensive and then employment will fall dramatically, associated with stagnant incomes. This is negative deindustrialisation. (p27).

  [This is a neat explanation - but is it backed up in all its subtlety by the empirical evidence? For example, it is unlikely that the employment protection schemes always fall prey to austerity measures; incomes need not always fall. Even though an overview can be useful, we must ask at what point its divergence from reality makes it useless].

b) *Microeconomy.* The international experience of trade specialisation varies dramatically. Some countries have specialised in manufactures, some in services and others in neither (i.e. they have a rough balance on both accounts). Successful economies are to be found in each category. (p28).

  Generally, the share of industry or services in total employment is significantly influenced by the type of trade specialisation (partly because there are ancillary trades et cetera which develop as a result of specialisation in one sector or another). Hence the share of industrial employment in Germany has always been much greater than Norway (which specialises in the export of shipping services and oil), although they are both now deindustrialising.

Such trade specialisation is the primary cause of cross-country variations in the sectoral shares of employment. (p29).

c)   *Net effects*. In practice, the microeconomic and macroeconomic effects work simultaneously, and often in opposite directions - so the net effect on industrial employment of any change is ambiguous *a priori*. For example, a sudden discovery of oil in an underemployed economy will boost national income; this will help to reconcile competing claims on output; both of these effects will raise growth. They will also put downward pressure on inflation and enable yet higher growth through a loose macroeconomic stance. All of these macroeconomic factors will raise employment in manufacturing. But the effect on trade will be to encourage specialisation in the production of raw materials (through exchange rate effects et cetera). The net effect is not clear and will depend on government policy *inter alia*. (p30).

12.   These general arguments are supported by the econometric evidence. Rowthorn and Wells run a regression of the following form:

$$M = a + b\log Y + c(\log Y) + dU + eBm$$

This specification is justified on theoretical grounds covered in the previous discussion. (p31).

As expected, the share of employment in manufacturing (M) depends strongly on per capita income to begin with (b is large and positive) but negatively as income rises substantially (c is large and negative). The net effect of per capita income appears to become negative around $3800 (the level of income achieved in Britain in the early 1960s).

Unemployment (U) is a proxy for recessions and is negatively related to industrial employment (although the coefficient is not significant in cross-sectional analysis). (p32).

The balance on manufactures (Bm) is positively related to the share of employment in industry. It is noteworthy that Bm is very important in cross-sectional analysis (i.e. explains inter-country differences) but much less important for time series analysis (indicating that changes in the share of employment in industry are generally not caused by changes in the structure of foreign trade). In general, a rise in net manufactured exports equal to one percent of GDP is correlated with a rise in the share of employment in manufacturing of 0.69%. (p33).

Chapter 10.

1.   The share of the "production industries" in employment (i.e. manufacturing plus construction, utilities and mining) rose until 1966, although after the 1950s the rate of expansion slackened. The change in trend was prompted (although not necessarily caused)

by the deflation following the 1967 devaluation. The general increase in the share of the production industries disguises the fact that throughout the 1950s it was only the strength of construction and manufacturing which offset the persistent job losses in mining. It might be argued that a downturn in construction was inevitable as the post-war boom came to an end, so that the early growth in employment was masking a fundamental deterioration. This is particularly true if we consider exporting to be one of the essential attributes of the production industries - clearly, construction is a non-tradable good. (p207).

2. The UK experience is similar to other nations but a little more extreme (in Britain the peak occurred earlier and was slightly higher). (p209, 210, 211).

3. There are three theses to explain UK deindustrialisation:

a) The Maturity Thesis. There is some evidence that UK development since 1955 has been due to her early maturity. Countries can be divided into two groups: those which had 10-20% of their workforce in agriculture in 1955 and those with more than 20%. Then there is the UK, with only 5%. Of the immature economies, nearly all of the subsequent labour transfer into services came at the expense of agriculture; of the mature economies, roughly one half of the labour transfer came from agriculture. In Britain virtually none of the transfer came from agriculture (i.e. it all came from industry). (p214).

b) The Specialisation Thesis. In 1950-2 the deficit on UK non-manufacturing trade had risen to 13% of GDP (raw material and food prices were high in the face of inelastic demand; income from overseas had shrunk dramatically; exports of coal and services had plummetted). This deficit had to be offset by a surplus in manufacturing trade, which averaged 11% of GDP in 1950-2 (this was a deliberate act of policy and it was possible to achieve it because the capacity of our competitors was out of action). (p218).

This early trade structure has been transformed by the following *autonomous* factors. Firstly, the non-manufactures balance has moved into surplus (the real cost of raw materials and food has fallen; exports of oil and services have risen dramatically). Secondly, the balance on manufactures has turned into a deficit (industrial performance has been poor; the export of services and raw materials has adversely effected the competitiveness of manufacturing through the exchange rate). (p219).

This process need not be seen as threatening. The extreme changes in UK economic structure are merely a result of historical accident. The UK had to specialise far more than other countries after the war (for example, less US aid was channelled to Britain so there was more pressure to balance the external account). Hence the subsequent move towards a more "average" structure requires more extreme transformation. (p220). [But it may still be problematic in the future - Verdoorn's Law, hysteresis].

c) The Failure Thesis. Britain's economic performance has been poor by international standards (low growth, low productivity, low employment). Her manufacturing sector has been particularly unimpressive and, whereas UK manufacturing output fell by 18% in absolute terms 1973-82, in the other six largest OECD countries it has risen by 15% (on average). (p223).

If Britain's performance had been better (i.e. higher manufacturing productivity) then clearly output would have been greater. Britain may have had a stronger balance of payments position and this may have allowed looser macroeconomic policy and higher growth. It is not clear that employment would have risen in manufacturing (either absolutely or a as a proportion of total employment) since the increased demand for labour may or may not have been greater than the shedding of labour due to higher productivity. (p225).

Chapter 11.

1. Rowthorn and Wells examine the impact of various hypothetical changes to the UK economy in the post-war period. Their main conclusion is that if the UK economy had performed much better (industrial productivity had grown faster and full employment had been maintained up to 1983) then unemployment in 1983 would have been reduced by three million. However, only one tenth of these extra jobs would have been in manufacturing: employment in the industrial sector would still have declined both absolutely and relative to other sectors. The primary reasons for this pattern of development are that the UK economy was already mature by the 1950s and the UK's subsequent change in specialisation was inevitable. (There is also some support for the failure hypothesis, however, and it is possible that the UK could have experienced positive rather than negative deindustrialisation). (p228).

2. The counterfactual scenarios constructed are as follows.

a) *Scenario I*. Assume that:

Per capita income growth is 3% per annum from 1950 to 1983 (compared to the actual average of 2%). This is comparable to other advanced economies and would make the UK the second richest country after the US by 1983.

Unemployment is at 1% up to 1966 and then rises gradually to 3.5% in 1983. This is quite accurate up to 1966 and is comparable to the experience of Japan, Austria et cetera after that date.

Total employment rises by about one million in 1983 as more people are tempted onto the jobs market. (p229).

Faster growth, combined with movement in autonomous factors, pushes down the trade

deficit on non-manufactures (although at a slower rate than its actual value). Rowthorn and Wells assume that the volume of exported manufactures in the long run would have responded so that the balance of payments remained in equilibrium. If that were true then there would have been a surplus on manufactures in 1983 equal to 1.3% of GDP (as opposed to a deficit). Rowthorn and Wells then adjust the size of the manufacturing sector accordingly. (p231).

Note: Under this scenario the UK manufacturing sector will be "efficient" in the sense of Singh (1977). The *surplus* on manufacturing exports declines (although the actual volume increases); this is because it is no longer necessary to provide so many manufactured exports in order to finance the import of non-manufactured goods "at a socially acceptable level of cost" (in terms of unemployment et cetera). (p232).

b) *Scenario II.* Assume that:

Output growth et cetera are as in Scenario I. The only difference is that the surplus in manufactures is assumed to still be 11.2% of GDP in 1983 as it was in 1950. I.e., there have been no autonomous factors altering the UK's specialisation.

3. The results are as follows:

a) *Scenario II.* Manufacturing employment rises rapidly until the 1960s and then falls persistently (in absolute and relative terms) until 1983. By 1983 the share of manufacturing in employment is 30% - midway between Germany and Japan. (p234). The reason that manufacturing still declines is that the expansion of the service sector draws many workers away after the agricultural supply is exhausted in the 1950s (p235). This is made possible by substantial productivity growth in manufacturing (which rises faster than output).

b) *Scenario I.* All of the same forces are at work in Scenario I as in Scenario II - but superimposed upon them is the effect of trade specialisation. As a result the balance on non-manufactures improves more rapidly and manufacturing shrinks accordingly, so that the rise in the 1950s is less pronounced and decline sets in earlier. (p237).

The similarities between Scenario I and actual UK experience are striking. The assumption of higher manufacturing productivity improves the UK's hypothetical growth performance and puts it much closer to full employment (giving it a higher per capita income in 1983). However, the rise in productivity enables manufacturing to dispense with more workers and the hypothetical share of manufacturing in 1983 is *slightly* less than the actual share. All of the displaced workers (and the additional workers attracted onto the market through improved growth performance) find work in the service sector. (p239).

The pattern of change is rather different between the two cases. In Scenario I the decline of manufacturing is much more steady, being faster than reality up to 1979 and

slower thereafter (the early decline means that there is no need for such a severe shake-out in the Thatcher years). (p240).

4. It is noteworthy that the postulated rise in manufacturing productivity would have had little net impact on manufacturing employment. Instead, the rise in output and incomes would have been channelled into services and it would have been employment in the service sector which would have grown substantially. (p244).

5. We can use the two counterfactuals to assess the relative merits of the three theses - maturity, specialisation and failure. Comparing Scenario II and actual development reveals the importance of maturity (i.e. we can see what would have happened *if* UK manufacturing could have continued to grow at its preceding rate). Comparing Scenarios I and II shows the effect of specialisation (it compares a specialised successful economy with an unspecialised successful economy). Comparing Scenario I and actual development is a test of the failure hypothesis (if the UK economy had responded optimally to exogenous changes then what would have been the outcome).

It appears that the specialisation effect is by far the most important in determining the change in manufacturing employment (measured in absolute terms). It is followed by the maturity effect, which becomes more important over time (particularly after 1966). The net failure effect is relatively small, for reasons discussed above. (p245, 247).

6. Overall, it appears that the poor performance of UK manufacturing has significantly reduced growth and incomes. However, even if performance had been much better then the decline of manufacturing itself would not have been averted - it would merely have created a larger service sector. (p248).