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Is Manufacturing Still Special in the New World Order?

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The momentum is building for a global economic transformation. But the symptoms that are starting to appear are being misdiagnosed as an old disease: deindustrialisation. This is partly because attention is focused more on the immediate losers than the winners, especially during a global slowdown. It is partly because, at a time of economic hiatus, historical averages are poor indicators of future possibilities. However, if the old policy remedies are applied the pain of transition will be greater and will last longer. This transformation is a condition—like adolescence—that will be uncomfortable while it lasts but must be allowed to run its course. Fighting the symptoms will fail and will result in worse problems to come.

The Structural Shifts

There are two interrelated shifts taking place: geographic and sectoral. Over the postwar period the geographic centre of gravity diffused outward from the United States to encompass Western Europe and then Japan. In 1950 the US alone produced more than half of world output. By 1990 its share was less than a quarter but the above Triad accounted for almost three quarters of world GNP, measured in the conventional way. A reversal of this pattern of OECD dominance is imminent. Using non-conventional measures of world GNP (as explained below) it becomes clear that it is already happening. By the turn of the century many of today's big firms—if they are to remain big—will have more customers and more employees in poor countries than in rich ones.

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The second, closely related, shift is in the sectoral pattern of employment. In nearly all rich countries the share of the labour force employed in manufacturing has passed its peak and, in countries such as Germany where it is still high, it is likely to go into steep decline. The pace and degree of change will vary across countries depending on their past structure of employment, on the flexibility of their labour markets and on the level of competition in their service industries. But the trend is universal; it is a consequence partly of the increasing demand for services but mainly of the transformation in the developing countries which is shifting both their demand patterns and their comparative advantage in international trade.

A dual shift of this magnitude raises stark concerns, especially in the rich (OECD) countries. Where will all those displaced factory workers find jobs? With productivity growth so low (historically) in the service sectors, won't incomes stagnate with a shift into services? Without manufactured exports how will countries pay for increased imports? Without a manufacturing base of big, capital-intensive, firms to develop new technology and generate spinoffs in skills and jobs for smaller firms, how can an economy prosper?

Some of these concerns are retreads of the deindustrialisation debate that flared in Britain in the 1970s, and in the US and Japan in the 1980s. They have recently resurfaced in all three countries and we believe—because of the structural shifts to come—they will soon spread to other countries and intensify. They will provoke misguided industrial policies and protectionism unless the concerns are addressed and the changes underway are better understood.

In the next section of this paper we examine the historical analogy of the shift of modern economies out of agriculture. We then assess the three main concerns of the 'Manufacturing Is Special School' (MISS). We follow this with a review of the key forces driving the structural change and the early evidence of its strength. The final section summarises the implications for businesses and governments.

An Historical Analogy

The European emigration to the Americas, the industrial revolution, the rise of mass production, the abolition of slavery, and the decline of domestic service, are examples of geographic and sectoral economic shifts over the past 300 years. Indeed, over the broad sweep of eco-

nomic history, such transitions are more the norm than the exception. It would be surprising if the current period of unprecedented technological and political change did not produce something similar.

Only for the past century, however, are recorded data sufficient to permit quantitative comparison of historic and current trends. Data on six large economies show that the employment shift away from agriculture has been the most dramatic structural change this century (Figure 1). Although starting points were very different, the cross-country pattern and degree of convergence are striking. At the beginning of the century, 68% of the labour force in Japan were employed in agriculture, compared to 44% in the United States, and just 19% in Britain. Those shares were halved by 1940 in the US and UK; it took until 1960 in Japan. Despite heavy postwar protection of the sector in all three countries, the pattern of convergence continued and by 1990 the shares were 7% in Japan, 3% in the US and 2% in Britain. In Germany, France and Italy (where comparable data are available only since 1950), the share of agricultural employment fell from an average of 32% just after the war to 6% by 1990.

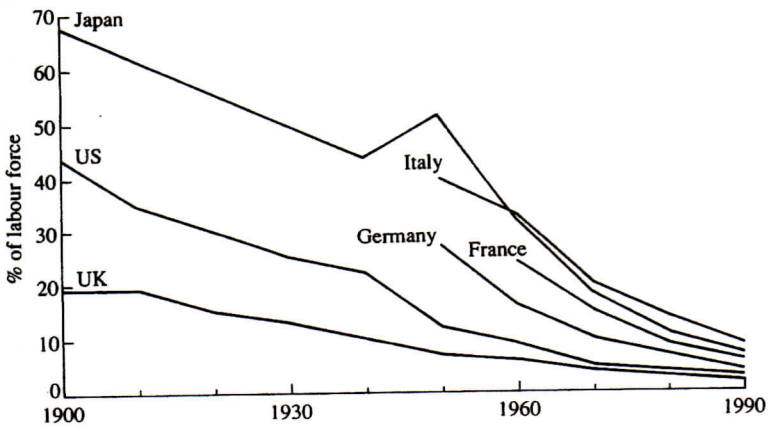

Fig. 1 Share of Agricultural Employment
Source: Liesner (1985)

This much of the story is fairly familiar. What is more surprising is that over this period the shares of employment in manufacturing did *not* show a corresponding rise. The structural shift in employment was *not* from agriculture into manufacturing. In the US the share of manufacturing employment peaked at 27% of the labour force in 1920

when 30% still worked in agriculture) and then fluctuated between 21% and 26% for the next 60 years. The more industrialised UK had 33% of its work force in manufacturing in 1900 and, after various ups and downs, the same percentage in 1960. In neither country was there a systematic tendency for the rate of unemployment to rise during 1900–60 despite the growth of the labour force and the shrinkage of farm jobs.

Where did the displaced agricultural workers and the new entrants to the workforce find jobs? Predominantly in the service sector. Its share of employment has been growing without interruption in each of the six countries with available data: in the US and UK since 1900 and in the other four countries since 1950 when their data begin. Again, the starting points and rates of change differ, but the trend of rising service employment is common to all.

Thus the expansion of the service base of modern market economies has been underway for most of this century. It has been absorbing agricultural labour and, in recent decades, manufacturing labour (Figure 2). Left to market forces and assuming continued technological progress, there is little reason to suppose that manufacturing employment should follow a very different path over the next 50 years than agricultural employment has over the past 50. Both exhibit rising productivity through labour-saving technological change. Both produce easily tradable output so that incremental productive capacity can migrate to low-cost locations. In their basic forms, both account for a shrinking share

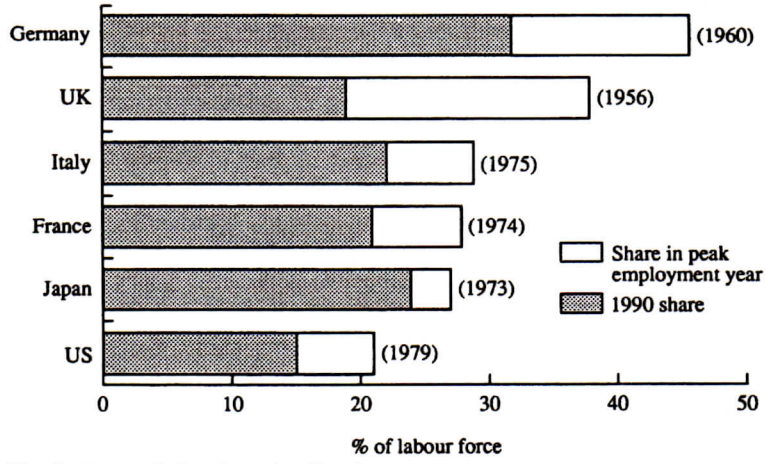

Fig. 2 Share of Manufacturing Employment
Source: Liesner (1985)

of consumer expenditure as incomes rise from subsistence to saturation levels. Although spending on food or goods may not fall, an increasing share of it will be on the service component of its value added (e.g.: restaurant and ready-to-serve meals, customised consumer products and computer software).

If the agricultural analogy is correct, we may expect to see:

(i) manufacturing employment continuing to fall across the OECD, reaching levels of 10% or below in most countries within 30 years. This is the average period over which agricultural employment fell from the current manufacturing share to below 10% across the sample countries.
(ii) faster employment falls in those countries where manufacturing employment is currently highest: Germany (a real outlier at 32%), Japan (24%) and Italy (22%). The biggest falls so far have followed this pattern—they have been greatest in Germany and the UK, at their peak the two most industrialised countries of our sample.

In fact, projections from the agricultural anology are probably too timid. The emerging manufacturing prowess of the developing countries, discussed below, will accelerate these trends.

Is Manufacturing Special?

For supporters of what we call the Manufacturing Is Special School the trends identified above are of critical concern. Their case draws on an apparently simple fact—the high growth developed economies (e.g. Germany and Japan) have been those with large and buoyant manufacturing sectors. Three main arguments have been put forward to explain this:

- manufacturing jobs have higher productivity and higher wages; hence a shift to the service sector reduces the growth of GDP and incomes;
- manufactured goods have a higher export content; a shift to services creates a balance of payments constraint on faster growth;
- the manufacturing sector possesses externalities that create spinoff growth and jobs in other sectors—for example, through economies of scale and a greater rate of technical progress.

These propositions boil down to the claim that manufacturing has special growth-inducing characteristics not to be found in services (see, for example, Thirlwall (1982)). Our claim is that even if this were true

in the past it will become progressively less true in the future. We take each point in turn.

Jobs

Service sector jobs conjure up an image of a 16 year-old flipping hamburgers at MacDonalds. However brain surgeons and bankers are also service providers. So are most managers and sales people in large manufacturing companies. The statistical confusion between types of job and types of company has meant that the growing trend for big firms to contract out services that were once supplied in-house masquerades as job losses in manufacturing. Actually this is correcting a statistical error. Meanwhile the US Bureau of Labour Statistics predicts that executives, managers, professionals and technicians will account for 41% of all US job growth to 2005.

On the issue of productivity the statistical dice are again loaded in favour of manufacturing (not surprisingly, given that this is the old-established sector which historically has paid the wages of the statisticians). For example, a lot of service sector data ignores differences in hours worked thereby underestimating the productivity of the services sector which makes more use of part-time workers. The data also fail to capture quality improvements—a dental filling today is very different from ten years ago. In most national accounts the output of the non-market services sector (e.g. public education) is calculated as the cost of inputs thereby excluding by definition any improvements in quality or productivity. All this means that the inflation component of the growth in spending on services tends to be overestimated and hence productivity growth understated.

However even if service jobs were on average less productive and lower paid than manufacturing this would not be the end of the story. As countries get richer an increasing portion of income is spent on services such as travel, health, and education. This increased demand bids up their value. On the supply side, some prefer jobs which are less stressful or more social and these tend to be the lower paid service jobs. A recent survey of employment in Britain found that assembly-line workers had the lowest level of job satisfaction, followed by those working with machines and monitoring equipment. Workers dealing primarily with people scored the highest job satisfaction (see Gallie, Duncan and White (1993)). Many of the growing number of women entering the labour market prefer part-time jobs and are willing to

tradeoff income for flexibility. Thus some of the claimed falling-off in growth following the shift to services is more apparent than real (the under-recording of quality and productivity improvements in services) and some the natural accompaniment of increased demand for leisure and flexibility.

Finally what counts is what is happening at the margin. Here there are two changes to note. First, many of the new service sector jobs are both high value added and high paid. A recent survey of the largest 100 firms in Manchester, a city in the manufacturing heartland of the UK, found that employees in the leisure and media sectors were the highest paid and those in manufacturing the lowest (see KPMG Peat Marwick study (1993)). Second, for reasons discussed below, prices and wages in manufacturing are likely to be in relative decline.

Exports

Here the MISS argues that services have a low export content and/or a low income elasticity of demand. Thus if a country experiences deindustrialisation (i) its share of world export markets will fall and (ii) its demand for imports will rise as its residents turn increasingly to foreign markets to satisfy their demand for manufactured goods. As a result growing trade and current account deficits will emerge. To avoid sustained depreciation the country will have to deflate domestic demand to bring imports back into line with exports—this in turn will hurt domestic output, including in the service sector.

What is at issue is whether services are the 'wrong' goods in this context. This is far from clear—services already account for a substantial share of world trade (albeit not as high as manufactures) and trade in services is growing faster than trade in manufactures. Invisible earnings accounted for one third of total current account receipts of industrial countries in 1983; the IMF estimates that this share has increased by 4 percentage points since then (see World Economic Outlook (1992)). Furthermore this is taking place against a background of much greater impediments to trade in services than in manufactures. Partly reflecting this, countries with a comparative advantage in the service sectors (e.g. the world's largest service exporters, the US and the UK) are increasingly supplying these to other countries via the medium of international direct investment (IDI), with the eventual benefits of repatriated profits and dividends (some 40% of the stock of outward IDI from the five major economies has been in the service sector).

Again we conclude that the future will be different from the past. With service-oriented shifts in demand, widespread de-regulation of service industries, and growing IDI in services, manufacturing will lose its past pre-eminence as the fountain of all foreign exchange.

Externalities

Finally we come to the third of the MISS concerns, namely that large, capital intensive, manufacturing firms are the key to the generation of new technology and jobs throughout the entire economy. The chemicals, automobile and computer industries are classic examples where rapid change in product or process technology brought high returns to a small number of large firms. However that phase has probably peaked for those industries. Economies of scale have been reaped, new competitors are driving down prices, and the market for some of these products is reaching maturity in the OECD countries.

Many of today's high-technology industries are in the service sector and they are driving research in new products. The communications industry creates the market for the fax machine and the cellular phone. The health industry shapes the research of pharmaceutical companies. The transport industry drives aerospace development. These examples further illustrate the growing interdependence between manufacturing and services—large corporations are contracting out important activities such as marketing and computing to the service sector, and are buying high-technology intermediate inputs such as just-in-time distribution systems and computer-aided design (hence the rapid growth of business services). The growth of services is a natural and necessary concomitant to increased economic specialisation and sophistication.

Thus during the coming decades breakthroughs in productivity and wealth creation are equally likely to spring from the service sectors. Economies of scale were at the root of the step-change advances of the 1950s and 1960s in chemicals, automobiles and consumer goods. There are already signs that economies of scope may bring similar cost savings, quality enhancement and new service products in telecommunications, finance, air transport and entertainment in the 1990s.

The New World Economic Order

Meanwhile in the developing world, change is also afoot. For many such countries the 1980s were a lost decade in terms of economic growth.

There are two important reasons for believing that the future may be rather different. First, the spectacular collapse of communism shook the last vestiges of belief in centrally planned, highly redistributive, models of economic growth. Now there is no alternative to the market economy. Second, the seeds of reform are falling on well-prepared soil. As the 1991 World Development Report noted, investing in people is a key complement to good economic policies. Between 1965 and 1988, secondary school enrolment increased from 26% to 55% of the school-age population in the 58 middle-income developing countries, and tertiary enrolment jumped from 7% to 17% (see World Bank (1991)). By 1988 a larger percentage of Korea's 20–24 year olds were in higher education than were their French or German counterparts (see World Economic Forum (1992)).

Sustained annual growth in the region of 5–6% for developing countries as a group, as suggested in two recent studies (see World Bank (1993) and Shell (1993)), is thus an entirely plausible outcome. This will have remarkable consequences for the world economic order: the centre of gravity of global consumption and production will shift from rich to developing countries. This shift will reflect in part the rapid growth in productivity (and in population) in the latter. It will also reflect changes in relative prices, wages and exchange rates.

The last point is a complex but central element in the structural shift to come. At present the use of market exchange rates can grossly understate the economic size of poor countries because the former can diverge significantly from purchasing power parity (PPP) rates. In 1990, using conventional (market) exchange rates the combined GDP of the rich countries was 2.7 times larger than that of the non-OECD world. Using PPP estimates, it was only 1.1 times larger. Over time, however, more rapid growth in the developing world will increase wages and prices in the tradeable sectors, dragging in their wake costs and prices in the less-traded sectors. Such forces will gradually move the exchange rates of developing countries towards their PPP levels, further increasing their consumer power. The consequences are far reaching. For example, it has been estimated that by 2020 there will be more cars in today's poor countries than in today's rich ones (Figure 3).

The mirror image will be seen in the OECD countries. Although productivity in manufacturing will continue to rise there, the relative price of manufactured goods will fall with increased competition from developing countries. The current large differences in manufacturing

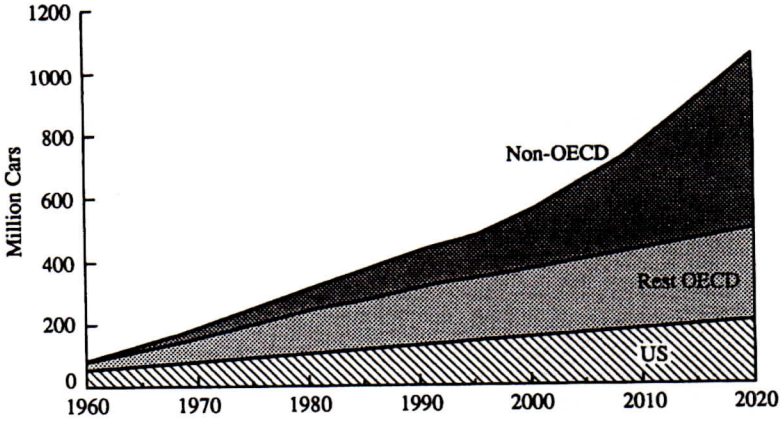

Fig. 3 World Passenger Cars
Source: Shell (1993)

labour costs will be eroded (Figure 4). Just as in agriculture, despite high productivity growth, the typical manufacturing job will no longer be high wage in the OECD.

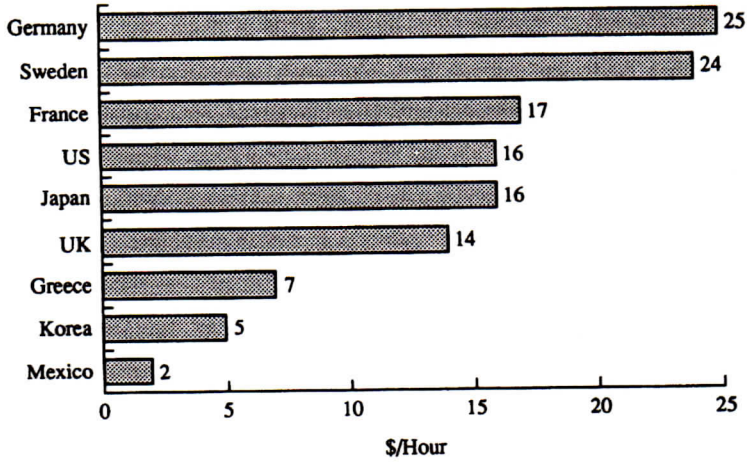

Fig. 4 Hourly Compensation in Manufacturing: 1992
Source: DRI (1992)

Implications

Our first set of implications is for businesses (and hence for investors). More and more manufacturing companies will find themselves in highly competitive commodity-style markets. If they choose to compete on costs they will have to shift production to developing countries. If they choose to compete in high value-added niches they will have to raise the service intensive customisation of their products. Either route will hasten the employment shift to services in the OECD.

Our second set of implications is for policy makers. They will face great pressure to subsidise, or failing that, to protect, the manufacturing sectors under threat. It would be a critical mistake to yield to this pressure. The agricultural experience shows that such a reaction would be costly and ultimately fruitless in stopping job erosion in the OECD. For the developing countries, being squeezed out of their export markets would stymie their growth potential. Such a setback would expose the vulnerability of new democracies in East Europe, Latin America and Asia. It would be deeply dissillusioning for those who have endured the pain of economic reform in order to compete and grow through linking into world markets. Instead of providing growing markets for OECD exports and investment, the developing world would become the source of greater political instability and migratory pressures.

Rather than focusing on jobs OECD governments should focus on people. Only by upgrading and broadening their education systems will they have workers whose productivity and flexibility will underpin their expanding service sectors. On the international front they must press for free trade in services and greater freedom in international investment. In the traditional areas of industrial policy and direct support to industry, we are asking politicians to do what they find most difficult: nothing!

Comments

Lord Roll: Given the large number and great intensity of economic and financial problems of current concern, it is not surprising that economists, let alone policy makers, rarely stop to ponder broader world developments of secular interest. These are only too often left to sociologists and historians whose work in these areas may lack the pre-

cision of the economic scientist. It is, therefore, particularly pleasant to be able to welcome this study by economists with a business interest of structural changes in the world economy.

The main thesis of this essay is that a double shift is occurring in the world economy, each closely connected with the other: a shift of economic weight from the rich OECD countries to the developing countries; and a shift within the OECD countries from manufacturing to services. Economic growth in the developing countries is stimulated by greater emphasis on the role of the market and by better education; and the problem of the OECD countries is aggravated by the increasing ability of the developing world to engage in manufacturing, aided by the greater ease of transfer of modern technology.

This thesis is argued with great skill and carefully chosen evidence, particularly on the latter point which tends to go against traditional views on the subject. The authors conclude that both shifts are inevitable, and that the relative decline of manufacturing in the more developed countries will not only continue, but is not to be a matter of regret. The argument is cogent, though there may be a tendency to underrate the political consequences of (and obstacles to) the ready acceptance of these developments, including the significance of migration—past and future—in producing a new equilibrium.

Richard O'Brien: The appeal of this essay is its broad scope, bringing together a number of the structural changes and policy issues faced by all economies: the apparent decline of manufacturing in OECD economies, the shift of employment to developing countries, the dependence on services for job growth, the competitiveness between low wage and high wage economies, and the implications for the trade protection debate.

It makes a convincing case: to those worried about the hollowing out of their manufacturing there is good evidence of why this trend should not be resisted; for those already convinced that the growth of the service sector was acceptable but found it difficult to convince the sceptics, the essay marshals the case well. A short essay cannot attempt to harness much data but snippets such as Korea having more students in higher education than France or Germany forces those in the OECD to consider just where their future competitive edge is going to come from (even though some might ask about the comparability of such data).

The weakness of the argument, especially in convincing policy-

makers, is in the timing of these changes. The evidence of the long term shift out of agriculture since 1900 is used as a strong analogy to illustrate how these massive structural shifts do take place while economies and jobs somehow survive. But we already know that France, for example, has reduced its agricultural jobs significantly throughout the past 40 years, but the agricultural lobby remains powerful, threatening the GATT and all that it promises for future structural change in world trade. Trends may be inevitable but that does not prevent persistent opposition to the 'inevitable'. The GATT agenda indeed represents the attempt to develop a world trading system that addresses services, while being potentially held back by the remaining debates in agriculture.

Some readers would probably like to have seen further discussion of the third part of the 'manufacturing is special' school's argument, that economies benefit from the externalities created by their major industries such as chemicals, cars or computers, as such industries' R&D work creates jobs and spin-off activities and keeps a country 'ahead of the curve' in technology. The authors suggest that not only are these particular industries at the mature stage where such externalities no longer occur (economies of scale having been reaped etc.) but also that many of the high-technology industries with accompanying externalities are now in the service industry, such as the communications industry creating the market for the fax machine. But it is possible that all this means is that protectionists just need to replace the 'manufacturing is special' argument with a 'services is special' school, as the manufacturing/services distinction line become blurred. In fairness to the authors many of these points would require another essay and could not be easily incorporated in an already wide canvass.

This essay does give a useful focus on how these structural shifts interrelate and the ways in which the shift to services relates to other changes: e.g. it is in the services sector that companies can try to add value when the underlying product becomes 'commoditised'. It also highlights the analytical challenge facing economists in correctly valuing the size of the service sector and the long term relative valuation change that the authors forecast between rich and poor countries as the latter's currencies move closer to their purchasing power parity levels. Comparative measurement of economic output is hazardous in radically differing types of economy, especially where the service sector may be differently priced and structured.

Ultimately the strength of this essay is the powerful message it car-

ries on the importance of the service sector and brings home to policy-makers that the shift out of manufacturing will be far less painful if an economy is allowed to be broadly competitive, ensuring that the very real adjustments are made. The authors acknowledge that they may be ambitious in calling for politicians to 'do nothing' in the face of these trends. If the authors had wanted to cast their conclusions even wider they could have stressed that even in the aftermath of the free market 1980s and apparent excess of zeal for 'doing nothing', there remains a long term logic for freeing the supply side and allowing markets to force continuous adjustment in the new world order, an order which cannot be designed according to some ideal blueprint.

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