

INCOME INEQUALITY IN ADVANCED ECONOMIES: A CRITICAL EXAMINATION OF
THE TRADE AND TECHNOLOGY THEORIES AND AN ALTERNATIVE PERSPECTIVE

ESRC Centre for Business Research, University of Cambridge
Working Paper No 219

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December 2001

This Working Paper forms part of the CBR Research Programme on Industrial Organisation, Competitive Strategy and Business Performance.

Abstract

This paper critically examines the trade and technology theories which dominate the large and growing literature on the determinants of changes in income inequality in advanced industrial countries during the 1980s and 1990s. Both theories, despite their rather different approaches to the subject are shown to have a common premise: advanced countries have experienced a fall in the relative demand for unskilled labour and an increase in that of skilled labour. This single explanation for both phenomena has been dubbed the 'transatlantic consensus'. This paper argues that this consensus, together with the associated theories based on trade with the Third World and skill biased technological progress respectively, is analytically as well as empirically unsatisfactory. It puts forward an alternative analysis which emphasises the role of institutions (e.g. unions, minimum wages), macro-economic conditions and social norms. It naturally arrives at rather different policy conclusions from those of the orthodox economists.

JEL Codes: D3, F3, O3

Keywords: Income inequality, manufactured imports from developing countries, skill biased technical progress.

Acknowledgements

This is a revised version of a paper presented at the IDPAD Conference on Globalisation, Structural Change and Income Distribution held in Chennai, India, December 2000. I am grateful to the participants for their valuable comments. The paper draws heavily on the analysis and arguments presented in Singh and Dhumale (2000). As in the case of that paper, the present paper reflects my intellectual debt to Tony Atkinson's writings. The usual caveat applies.

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1. Introduction

For half a century or more, until about 1980, earnings distribution in the US was becoming more equal; the differentials between the highly and less highly paid employees were declining. The situation began to change in the late 1970s, and in the 1980s wage dispersion and income inequality rose substantially. This deterioration in earnings and income distribution occurred not only in the US but also in other advanced countries. Changes in the degree of inequality, however, greatly varied between countries. In general, the extent of worsening of earnings and income distribution among Western European countries in the 1980's was much less than in the US, the UK being a notable exception. Indeed, if income distribution is measured in post-tax and benefit terms, some leading West European countries showed hardly any increase in income inequality at all. On the other hand, these countries experienced a much higher level of unemployment than the US.

To account for the observed changes in income distribution and employment in advanced countries, a vast literature has sprung up. Most contributors have ascribed these phenomena to either trade with developing countries or to technology. However, despite the concentration on just two factors, even by the normal standards of controversies in economics, this literature is unusually fractious. There are major disagreements among, and between, trade and labour economists about the best methodology for analysing these phenomena and for interpreting the empirical results¹.

A correct analysis of these questions is, however, not only of academic interest but has much wider significance as these bear directly on issues of great public concern. Many workers and trade unionists, particularly in the US, attribute their stagnant real wages as well as increased wage dispersion to competition from products of sweatshop labour in developing countries. In contrast, much of the economic establishment

believes that liberalisation of trade and globalisation has been an important force in raising the standard of living of the people in the US. A guide to public policy in this area, whether it involves changing or maintaining the status quo, clearly requires a valid and robust analysis of the underlying phenomena.

The main purpose of this paper is to review the trade and technology theories and to suggest that neither of them is theoretically satisfactory nor empirically valid for explaining inequality and unemployment in advanced countries during the 1980s and 1990s. The paper outlines a broader alternative perspective, which leads to a rather different analysis and policy conclusions than those that follow from trade and/or technology stories put forward in the existing literature.

2. Income inequality, unemployment and de-industrialisation in advanced countries (1980s and 1990s)

During the last twenty years, labour markets in advanced countries have, to a greater or lesser degree, suffered from major deficits. The most important of these are: (a) increased wage dispersion and greater income inequality, particularly in the US and the UK; (b) mass unemployment in a number of countries and (c) de-industrialisation. The stylised facts concerning these phenomena which require explanation may be summarised as follows:

- i. It is best to start with the US case, partly because much of the recent literature concerns labour market conditions and their determinants in that country. The first important fact here is that real wages in the US stagnated in the period 1973 to 1995. This was a departure from a long-term historical trend. Blanchflower and Slaughter (1999) report that for nearly a century, until 1973, real average earnings in the US increased at a rate of 1.9 per cent per annum. However, between 1973 and 1993 real wages fell at a rate of 0.4% for the average worker, and at a substantially faster

rate for the lowest paid workers. It has not been until the late nineteen nineties that there has been any increase at all in the real earnings of the lowest paid US workers and this came only with tight labour markets towards the end of the longest boom in the country's history.

- ii. The second important fact concerning the US labour markets is that there has been a widening of earnings distribution for various classes of workers. Table 1 gives information on changes in earnings of different groups of US workers during the period 1979-1995. The table indicates that apart from the fact that the earnings of the top quintile of males rose marginally during this fifteen-year period, the bottom quintile experienced a decline of seventeen per cent. The earnings of male college graduates rose by one per cent compared with a decline in the earnings of high school graduates by seventeen per cent. Experienced college graduates did better than starting college graduates; high school graduates better than starting high school graduates; and professionals better than machine operators, labourers or clerical workers. Although women's earnings rose overall relative to men, the pattern of wage differentiation among women themselves was broadly similar to that observed for men.

It is also important to note that earnings inequality rose not only between skill groups but also within the groups themselves. In other words, even within the same occupation group (doctors or lawyers) or among employees with similar years of education, earnings inequality rose. Freeman (1999) reports that the top decile to bottom decile (D10/D1) ratio for college graduates increased from 3.46 in 1979 to 4.22 in 1995.

- iii. Although earnings as well as income inequality rose in many OECD countries, particularly in the 1980s, the nature and extent of

the changes varied greatly between countries. In general, the US and the UK recorded the largest increases in income inequality, whilst most continental European countries experienced relatively much smaller worsening of income distribution, if any (see, Tables 2 and 3). This is especially true of changes in income distribution after taxes and benefits, i.e. after taking into account the effects of the welfare state. However, in contrast to the US, many European countries experienced mass unemployment. This is attributed to the fact that relative to the US the labour markets of European countries were much less flexible owing to the greater strength of the welfare state in these countries². This inflexibility helped to achieve a superior outcome in terms of income inequality, but at the expense of high or mass unemployment, as Table 4 indicates.

- iv. The last, but by no means the least, important deficit in the advanced countries' labour markets during the last two decades (certainly in the perceptions of workers in these countries), has been that of de-industrialisation. There have been massive reductions in manufacturing employment or its share in the labour force in most advanced economies (See Table 5). However, the degree of de-industrialisation has varied between countries, with the UK recording the largest loss of manufacturing labour force during the period 1970 - 1993 - a fall of 45 per cent compared with the G7 average of about 15 per cent.

3. Trade and technology theories and The Transatlantic Consensus

There exists by now an enormous literature to account for these observed tendencies in the advanced country labour markets. The subject has naturally attracted the attention of both trade and labour economists. Although the two groups approach these issues from different perspectives and use different empirical methodologies, they agree on one crucial point. They concur that the fundamental underlying cause of both increased income inequality in the US and mass

unemployment in Europe is the fall in the relative demand for unskilled labour and increases in that of skilled labour. Trade economists, using the Heckscher-Ohlin framework and the Stolper-Samuelson theorem, note that because the US exports skill-intensive products and imports less-skill-intensive products from the South, this would lead to a rise in the wages of skilled workers relative to those of the unskilled. This in turn would increase wage dispersion, but importantly according to this theory changes in factor prices will materialise only through changes in relative product prices. Hence, for trade economists, the latter are the main objects of study.

The labour economists, who generally conduct their research in terms of trade volumes rather than prices, also believe that increased wage dispersion in countries such as the US is being caused by the relative fall in the demand for unskilled labour and increase in the demand for the skilled labour. However, they take the view that trade with the Third World can only account for a small portion of this fall in demand and that much the greater proportion comes from skill-biased technical change. Labour economists attribute a much smaller role to trade in their analysis because trade with the South accounts for only a small proportion of US economic activity. They point out that although developing countries' trade with advanced economies expanded at a very fast rate during the 1980s and 1990s, it started from very low levels. As a result, even in 1995 manufacturing imports from developing countries constituted only about two and a half per cent of the total demand in the OECD economies. Labour economists therefore assign to technology, instead of trade, the main responsibility for reducing the demand for unskilled labour and increasing that of skilled labour, and hence for the widespread increased inequalities in the US economy. However, in West European economies, the same phenomenon manifests itself in terms of mass unemployment because of labour market imperfections.

As Krugman (1994) observes:

“the upward trend in unemployment [in Europe] is the result of market forces that ‘want’ to produce greater inequality of earnings. The collision between these market forces and the attempts of the welfare state to limit inequality then lead to higher unemployment.”

Labour and trade economists thus have, despite all their differences, a single unified explanation for both increased income inequality in the US and the large rise in unemployment in Europe, which Tony Atkinson (1999, 2000) has termed ‘The Transatlantic Consensus’. The central premise of this consensus is, as indicated above, changes in the relative demand for skilled and unskilled labour. This, it is suggested, can explain most of the stylised facts about advanced country labour markets, outlined in Section 2. In addition, despite using different methodologies, both trade and labour economists seem to arrive at broadly similar empirical conclusions from their respective studies. As Blanchflower and Slaughter (1999) observe, “the methodological issues surrounding the proper way to gauge trade’s role have not been resolved. Nevertheless, what is important to emphasise is that the large majority of studies to date regardless of their methodology- find only a small role for international trade in rising U.S. income inequality. Product prices, labour shifts, trade flows: All these data have been analysed in different ways, and the recurring conclusion is that trade has not mattered much.”³

4. Imports of manufactures from the South and the North South manufacturing trade balance.⁴

Before we consider more closely the Transatlantic Consensus and the technology and trade stories as being the essential causes of earnings and income inequality and other labour market deficits in the North, it will

be useful to consider the nature of the changes in manufacturing trade patterns which have occurred between the North and the South during the last three decades.

First, it is indeed true that there has been a very fast increase in manufactured imports from the South to the North in the 1970s and 1980s. Between 1970 and 1990 the North's manufactured imports from the South rose in volume terms at a rate of about twelve per cent per annum. At the beginning of the period the South accounted for less than five per cent of the North's total manufactured imports; by 1990 this figure had increased to fifteen per cent. However, in terms of any overall employment effect on the national economy as a whole, it is important to observe that the North's imports of manufactures from the South (excluding China) accounted for no more than 1.5 per cent of GDP at the beginning of the 1990s. It is therefore legitimate to ask, as Krugman does, how the observed very large changes in inequality and unemployment in Europe and the US could be attributed to these small volumes of trading activity.⁵

Perhaps the answer is that it is not the absolute volume of trade that is important but rather the very fast rate of growth of imports. However, this argument also does not find much support in the data. As figures in Tables 6 and 7 suggest, import penetration of the advanced country markets between 1958 and 1975 by the then low-waged countries Italy and Japan had also increased very fast (Table 7) - almost as quickly as in the subsequent period (1975-1992) by today's developing countries (Table 6). The earlier fast increase did not, however, lead either to mass unemployment in Europe or to stagnant wages and greatly increased earnings and income inequality in the US.

It will be recalled that West European countries during this earlier fast penetration of their markets in the 1950s and 1960s and until 1973 nevertheless experienced more or less full employment. They also witnessed improved income distribution. Similarly, real wages in the US

rose at a rate of two per cent per annum between 1950 and 1973, and earnings and income inequality fell. The main reason for these differing labour market outcomes in the two periods is that during the 1950s and 1960s West European and US economies were growing at a much faster long-term rate than they have done subsequently⁶. This suggests, at the very least, that even if one were to accept for the sake of argument that the fast growth of imports from low-waged countries is causally associated with various labour market deficits, these adverse effects could be more than outweighed by other factors e.g. faster overall economic growth.

Is it, however, possible to establish a causal link between changes in the pattern of North-South trade in manufactures and the unfavourable labour market outcomes in the North on the basis of the timings of the two sets of changes? Wood answers this question in the affirmative and asserts, using the time patterns of changes in the two variables, a causal connection between falls in the share of manufacturing employment and the growth of manufactured imports from the South for a cross section of advanced countries.

This claim is, however, open to objections. To infer causality between trade and job losses, it is necessary to consider not only imports from the South and their timings, but also the North's exports to the South and their timings, as well as the effects on the trade and current account balances. UNCTAD (1995) has carried out this detailed analysis and finds that manufacturing job losses in the North are associated more closely with the fall in the North's exports to the South in the 1980s (due to the debt crisis) rather than to any trend acceleration in imports from the South during that decade. The UNCTAD authors point out that the North's manufactured imports from the South increased at a faster pace in the 1970s than in the 1980s but the difference between the two decades is that in the 1970s the North's exports to the South expanded at an even faster rate than its imports. However, in the following decade these exports were severely constrained by the South's debt crisis.

UNCTAD economists conclude their comprehensive analysis of the pattern of the US manufacturing trade and labour market outcomes in the following terms:

“Neither the evolution of manufacturing trade balances nor that of import penetration ratios suggests that there is any significantly close relation between North-South trade in manufacturing and unemployment. The tiny swing in the trade balance from 1970-1993 compares to (average) job losses of 15% (in the G7 countries, Table 4), and the timing of these losses did not systematically coincide with either declines in the North’s overall trade surplus with the South or with the rise in imports from the developing countries. Not only was the growth of manufactured imports from the South actually faster in the 1970s than in the 1980s, but also the most important influence on the trade balance in the 1980s came through a decline in Northern exports due to unfavourable economic conditions in the South” (parenthesis added, UNCTAD, 1995).

5. Trade and Technology Theories and Earnings Inequality: a Critique

Having examined the relationship between changes in the pattern of North-South manufacturing trade and manufacturing employment in advanced countries, we now turn to the other part of the Transatlantic Consensus i.e., the question of changes in earning and income distribution, particularly in countries with flexible labour markets such as the US. It will be argued below that both the trade and technology theories, as well as the underlying concept of a shift in the demand for labour from the unskilled to the skilled workers, are all open to serious theoretical and/or empirical limitations.

Consider first the trade story, the intellectual basis for which is provided by the Stolper-Samuelson Theorem. The latter is, however, a static

construct with highly restrictive assumptions, which makes its application to the Transatlantic Consensus problematical.⁷ The theorem assumes for example perfect competition in product as well as labour markets. The latter is ruled out by assumption in the Transatlantic Consensus since the consensus is based on the notion that West European labour markets are inflexible. Further it is a two-country, two-factors, two-products model, but as Davis (1998 a,b) notes, to provide a rigorous analytic basis for the Transatlantic Consensus in terms of the Stolper-Samuelson framework requires addition of at least another country (a European country with rigid labour markets, in addition to a US-type developed country and a developing country). However, when this is done by considering a three country model, the neat predictions of the Transatlantic Consensus of increased earning inequalities in the US and greater unemployment in Europe do not follow.

At a more elementary level the trade theory is unsatisfactory as an explanation for changes in income distribution as it considers only the question of earnings distribution and neglects altogether the distribution of profit and rents in the economy. There is considerable evidence to suggest that the latter have contributed significantly to greater inequality in incomes in the 1980's in many countries.⁸

At an empirical level the trade story is not convincing either as earnings dispersion has increased not only in the traded sector but also in the far bigger non-traded sector. This suggests some common forces at work other than trade. Moreover, as Krugman (2000) and others have pointed out, despite the relative rise in skills premiums in the 1980's, the demand for skilled workers rose rather than fell in most sectors of the economy. This again points towards a non-trade explanation, indeed, in the direction of a broad-based skill-biased technical progress.

Importantly, however, the latest available data on earnings and income distribution for the period since the mid-1990's does not support the underlying premise of both trade and technology theories i.e. changes in

the relative demand for skilled and unskilled labour. Evidence for the period 1995-1999 suggests that the bottom decile of wage earners in countries such as the US and the UK have gained at the expense of the average worker, thus calling into question the shift of demand away from unskilled and low paid workers to the skilled and the more highly paid. This is contrary to the predictions of the trade theory since imports from developing countries or foreign outsourcing by the large US companies, have not slowed down but have continued to increase throughout the 1990's.

The technology theory provides, in general, a better fit with some parts of the evidence than the trade explanation, but is subject to its own limitations as well as to some of the difficulties indicated above. Skill-biased technical progress would also for example be difficult to reconcile with the 1995-1999 evidence of the gains of the low paid workers at the expense of the average worker.

There are also other important difficulties with the technology story. As noted earlier income distribution has become more unequal not only between industries but also within industries and firms. It has also become more unequal in narrowly defined occupations such as lawyers, doctors, and cooks. It is difficult to believe that this increased dispersion is in each case due to skill biased techniques progress. There is little to suggest that the highest-paid lawyers are being paid relatively even more than before because (say) technical progress in the form of information technology has improved their skills more than that of the average lawyer.

Katz (1999), updating the work of Autor, Katz and Kruger (1998), presents further evidence against the technology hypothesis. His analysis of relative demand, supply and wages of college high school graduates between 1940-1998 suggests that the rate of growth of relative demand for college graduates has fallen substantially in the 1990's, compared not only with the 1980's but also with the 1950's and the subsequent

decades. If the technology hypothesis were valid for the last two decades, the data should indicate a trend increase in the rate of growth of relative demand for college graduates in the 1980's and 1990's, which Katz's figures do not.

Atkinson (2000) provides a telling example of the difficulties of the technology theory to explain the observed changes in the income distribution in France and in the US. He notes that in the US during the 1990s not only did the earnings of the lowest 10% improve relative to the median, those of the top decile also increased vis-à-vis the median recipient. In France, on the other hand, although the wages of the lowest paid rose relative to those of the median earner, there has been no change in the position of the top decile of income earners compared to the median. It could be argued that unlike the US the position of the lowest paid workers in France could have improved because of that country's minimum wage laws rather than because of market forces. There is, however, no legal maximum to what people can earn in France, suggesting that top earnings are market determined. These facts are not easily compatible with the notion that there is a skill-biased general purpose technology which is responsible for the highest paid American earners being paid, relative to the median, even more than before. The fact that the market forces, despite the availability of such technologies in all industrial countries, do not lead to a similar outcome to that of the US for the highest paid earners in France suggests that there are likely to be other factors at work.

6. Unionisation, full employment and social norms

In view of the theoretical and empirical deficiencies of the Transatlantic Consensus and the associated theories of trade and technology in accounting for the observed facts about changes in income distribution in advanced industrial countries, it is necessary to look at other plausible explanations. Indeed, the domination in recent literature by these two

theories, whose flaws have become particularly transparent with the availability of the data for the 1990's, has drawn attention away from other types of explanations. There are important empirical studies, based on solid theoretical foundations, which emphasise the significance of factors such as unionisation, minimum wages, de-industrialisation, the rate of un-employment and the broader macro-economic environment in influencing income distribution. The US research shows, for example, that the decline of the unions in that country since the 1960s (from 30% of the private sector work force at that time to 10% in 1996) has contributed about 20% of the observed rise in earnings inequality.⁹ Similarly, Galbraith (1998) reports, on the basis of his analysis of inequality in the US wage structure over the long period 1920 - 1992, that 70% of the inter-industry wage dispersion could be accounted for by a single variable, the rate of unemployment. At a theoretical level this conclusion is compatible with either models of competitive or segmented labour markets (McFail, 2000).

The role of de-industrialisation, quite independently of unionisation, as a causal factor in explaining increased inequality, has been emphasised by Bluestone and Harrison (1982). The reduction in better paid manufacturing jobs and increase in less well-paid service sector employment has normally an adverse effect on income distribution.

The proponents of the Transatlantic Consensus often draw attention to the case of Canada which, unlike the US, despite being closely associated with that country in the North American Free Trade Area, did not suffer a deterioration in income distribution in the 1980s. This is ascribed to the fact that, in contrast to the US situation, the Canadian government by subsidising higher education was better able to increase the supply of college graduates. This reduced their earnings relative to the unskilled workers, thus contributing to a more equal distribution of income than would otherwise have been the case. These Canadian/American differences in changes in income inequality in the 1980s are thus fully compatible with the technology theory and the

consequent increased demand for skilled labour. However, a comprehensive multi-variate empirical study by McFail (2000) suggests that the most important determinants of income distribution in Canada in the 1980s were the level of unemployment and the decline in unionisation. De-industrialisation and to a small extent technology (in the form of increased supply of male college-educated workers) were statistically significant but relatively much less important. The study found the trade variable to be insignificant.

Although these macro-economic and institutional variables (e.g. unionisation and minimum wages)¹⁰ are important as determinants of changes in wage dispersion and income inequality, they do not explain the significant variations at the top end of the distribution in countries such as the US and the UK. As seen before, in both countries there has been increased wage dispersion, normally within each industry and occupational category, as a consequence of very high incomes being earned by the top 10% or 5% of the income recipients. This characteristic of changes in income inequality which holds both for the 1980s and the 1990s cannot be explained without reference to changing social norms. Traditionally studies of income distribution used to pay a great deal of attention to the notion of a fair wage and differentials between and within occupational categories which are socially acceptable. Such analyses do not find much favour with modern economists. Nevertheless, following Atkinson (1999, 2000), Singh and Dhumale (2000), it will be argued below that an analysis of changes in inequality in industrial countries would be seriously incomplete without reference to changing social norms in this respect during the past half century. Atkinson provides an elegant game-theoretic analysis of changing social norms, while Singh and Dhumale complement that discussion by considering these norms in a historical perspective.

Singh and Dhumale trace the historical evolution of social norms concerning income inequality with changing economic circumstances and power-relations. During 1950-1973, in the Golden Age of western

capitalism, advanced economies expanded at an unprecedented rate of almost 5% p.a. compared with a long-term record of about 2% over the previous 150 years. This outstanding economic performance was, however, not simply a statistical artefact or an accidental occurrence. Glyn et al (1990) and Singh (1995a) suggest that the Golden Age was made possible by the adoption of a new economic model in advanced countries in the post world-war II period. This model, which differed significantly from the one that prevailed countries in these countries in the pre war period, emphasized co-operation both at the national level between government, employees and business as well as at the international level (between nation States). This co-operative economic environment of the Golden Age led to high rates of investment and productivity growth, and with relatively equal income distribution, also to high rates of consumption. The latter justified the initial investment and encouraged further capital formation in a positive feed-back loop. This model of a social market economy was, however, undermined by its own success, and after nearly 25 years of more or less full employment, it fell victim to the economic shocks of the 1970s. The continuation of the model would have required renewal of existing institutions as well as establishing new ones, particularly those which could help cope with the effects of a long period of continuous high levels of employment.¹¹

In the event, the Golden Age model of the social market economy was abandoned in the late 1970s and early 1980s in favour of the Reagan/Thatcher model of market supremacy. This evolution of a new economic model also involved significant changes in social norms towards acceptance of far more unequal income distribution than before. The new model involved huge institutional changes such as de-unionisation, de-regulation, privatisation and other components of market supremacy. These institutional and related changes in social norms were more readily embraced in the US and the UK than in the continental economies. This is the reason why in countries such as France and Germany, there continue to be much narrower differentials

between pays of workers and managers, whereas in the Anglo-Saxon countries the huge increase in such differentials since the Golden Age has become common place. As seen earlier, it also explains why, while being market determined, the French incomes in the top decile have not increased relative to those of the middle decile while they have risen appreciably in the US and the UK.

7. Policy implications

If this analysis is correct it has rather different policy implications than those suggested by trade or technology theories. The adherents of these theories emphasise policies for improved education so as to raise the skill level of unskilled workers. Importantly, they do not suggest protection to cope with the alleged adverse effects of the Third World manufacturing trade, as it is recognised that such trade through a number of other (unspecified) channels has overall been of benefit to industrial countries. These economists therefore advocate instead social safety nets and adjustment assistance for workers harmed or dislocated by third world competition.

The policy thrust of the analysis presented here is rather different. In addition to measures to increase unionisation and improve minimum wages, it would emphasise faster economic growth and full employment, as being important in themselves as well as leading to more equal income distribution. In other papers I have suggested that the main constraints on fast growth of the world economy lie today on the demand rather than the supply side.¹² The world economy expanded at a rate of nearly 5% p.a. during the Golden Age, but has only grown at a rate of little over 2% in the subsequent quarter century, despite the availability of new information technology. This technology is regarded by scholars of technical change as being at par with the two or three most important technological revolutions of the last two centuries, e.g. the steam-engine and electricity. The full potential of this technology is not however being realised, mainly because of constraints on the rate of

growth of world demand. The analyses of Singh, and Howes and Singh, indicate that the demand constraint is not just a technical question of simply changing monetary and fiscal policies in leading economies, but is a deeply institutional barrier. To ensure faster, non-inflationary growth on a sustained basis would require new co-operative institutions at both the national and international levels, suitably adapted in the light of the experience of the Golden Age. The political processes involved in achieving this institutional renewal should also help change the social norms towards greater equality.

Notes

1. See for example, Krugman (2000) and Leamer (2000).
2. For an alternative perspective on this issue, see Singh (1995a, 1999).
3. Some economists do not subscribe to these consensus findings, notably Wood (1994) and Leamer (2000). Wood believes that most of the fall in manufacturing employment, as well as high overall unemployment together with increased inequality in the North, have been caused by the imports of less-skill-intensive manufactured products.
4. Most of the data used in this section comes from UNCTAD 1995.
5. See, however, Learner (2000); see also Singh and Dhumale (2000).
6. See further Howes and Singh (2000) and Singh (1999).
7. See further Cooper (2001).
8. For evidence of changes in the rates of return on capital in advanced countries during the last two decades, see Poterba (1997).
9. See Freeman (1999: p.46).
10. Positive effects of minimum wages on income distribution have not been discussed here, but see Freeman (1999).
11. For discussion on this issue see Singh (1995a), Eichengreen (1996).
12. See Singh (1995a, 1997 and 1999), see also Howes and Singh (2000).

TABLES

TABLE 1: Percentage Changes in Earnings in the U.S. by Skill Group, 1979-1995

| | Men (%) | Women (%) |
|------------------------------------|---------|-----------|
| Top quintile workers | 1% | 21% |
| Bottom quintile workers | -17 | -8 |
| College graduates | 1 | 20 |
| High School graduates | -17 | -4 |
| Less than high school graduates | -27 | -11 |
| Professionals | 6 | 18 |
| Administrative support (clericals) | -14 | 2 |
| Machine operators | -16 | -9 |
| Laborers | -21 | n.a. |
| Starting high school graduates | -27 | -19 |
| Experienced high school graduates | -21 | -4 |
| Starting college graduates | -11 | 3 |
| Experienced college graduates | -3 | 21 |

Note: Starting workers have 1 to 5 years of experience; experienced workers have 16 to 22 years of experience.

Source: Freeman (1999)

TABLE 2: Indicators of Earnings inequality in advanced industrial countries 1979-1989 and 1989-1994/95. Changes in D9/D5 to D5/ D1 ratios.

| | 1979- 1989 | | 1989- 1994/95 | |
|----------------|------------|-------|---------------|-------|
| | D9/D5 | D5/D1 | D9/D5 | D5/D1 |
| Australia | .02 | .02 | .06 | -.04 |
| Austria | .02 | .00 | .00 | .07 |
| Belgium | -.01 | -.02 | -.02 | -.02 |
| Canada | .03 | .08 | -.01 | -.13 |
| Finland | .03 | .00 | -.02 | -.10 |
| France | .02 | -.01 | .01 | .00 |
| Germany | .01 | -.12 | -.03 | -.08 |
| Italy | -.03 | -.23 | .19 | .32 |
| Japan | .05 | .00 | -.02 | -.07 |
| Netherlands | .03 | .00 | .02 | .01 |
| New Zealand | .04 | .05 | .02 | -.03 |
| Sweden | .02 | .01 | .03 | .00 |
| United Kingdom | .09 | .05 | .03 | .02 |
| United States | .12 | .11 | .06 | .07 |

Note: D9/ D5 is the value of the ninth decile over the first decile. D5/D1 is the value of the fifth decile over the first decile.

Source: Blanchflower and Slaughter (1999)

TABLE 3: Changes in market and disposable income inequality in industrial countries, 1980s

| Country | Source | Years change | Market income inequality | Disposable income inequality |
|----------------|---|------------------------|--------------------------|------------------------------|
| United Kingdom | Goodman and Webb (1994) Atkinson (1993) | 1981-1991 | +++ | ++++ |
| United States | US Bureau of the Census (1995) | 1980-1993 | +++ | +++ |
| Sweden | Gustafsson and Palmer (1993) Statistics Sweden (1995) | 1980-1993 | ++ | +++ |
| Australia | Saunders (1994) | 1980-1981 1989-1990 | + | + |
| Denmark | Aaberge et al. (1995) | 1981-1990 | + | + |
| New Zealand | Saunders (1994) | 1981-1989 | + | + |
| Japan | Tachabanaki and Yagi (1995) Bauer and Mason (1992) | 1981-1990 | + | + |
| Netherlands | Atkinson, Rainwater, and Smeeding (1995) Muffels and Nelisen (1996) | 1981-1989 | + | + |
| Norway | Epland (1992) | 1982-1989 1985-1992 | + | + |
| Belgium | Cantillon et al. (1994) | 1985-1992 | + | + |
| Canada | Beach and Slotsve (1994) Statistics Canada (1994) | 1980-1992 | + | 0 |
| Israel | LIS (1995) | 1979-1992 | + | 0 |
| Finland | Uusitalo (1995) | 1981-1992 | +++ | 0 |
| France | Concialdi (1996) | 1979-1989 | 0 | 0 |
| Portugal | Rodrigues (1993) | 1980-1990 | 0 | 0 |
| Spain | LIS (1995) | 1980-1990 | n.a. | 0 |
| Ireland | Callan and Nolan (1993) | 1980-1987 | + | 0 |
| West Germany | Burkhauser and Poupore (1997) Hauser and Becker (1993) | 1983-1990 | + | 0 |
| Italy | Brandolini and Sestito (1993) Eriksson and Ichino (1995) | 1977-1991 | -- | -- |

Source: Gottschalk and Smeeding (1997).

TABLE 3: Changes in market and disposable income inequality in industrial countries, 1980s (cont.)

Degree of change is coded as follows:

| Designation | Interpretation | Rate of change in Gini |
|--------------------|--------------------------|-------------------------------|
| -- | Small decline | -5% or more |
| 0 | Zero | -4 to +4% |
| + | Small increase | -5 to 10% |
| ++ | Moderate increase | 10 to 15% |
| +++ | Large increase | 16 to 29% |
| ++++ | Extremely large increase | 30% or more |

TABLE 4: Standardised unemployment rate in industrialised countries, 1964-1999 (average annual percentage changes)

| Country | 1964-1973 | 1974-1979 | 1980-1989 | 1990-1999 |
|-----------------------|------------------|------------------|------------------|------------------|
| United States | 4.5 | 6.7 | 7.3 | 5.8 |
| Japan | 1.2 | 1.9 | 2.5 | 3.0 |
| Germany | 1.1 | 3.2 | 7.0 | 9.0 |
| United Kingdom | 3.0 | 5.0 | 9.0 | 7.3 |
| Total of G7 countries | 3.1 | 5.0 | 6.9 | 7.1 |
| Total EU 15 | 2.7 | 4.7 | 9.0 | 10.3 |
| Total OECD | 3.0 | 4.9 | 7.2 | 7.4 |

Source: OECD, Historical Statistics.

TABLE 5: De-industrialisation - Employment in Manufacturing, 1970-93 in the G-7 countries

| Country | <i>Employment ('000s)</i> | | <i>Change 1970-93</i> |
|----------------|---------------------------|-------------|-----------------------|
| | 1970 | 1993 | Percent |
| Canada | 1638 | 1697 | 3.6 |
| France | 5196 | 3991 | -23.2 |
| Germany | 8203 | 7056 | -14 |
| Italy | 3289 | 2697 | -18 |
| Japan | 10880 | 10924 | 0.4 |
| United Kingdom | 7951 | 4312 | -45.7 |
| United States | 18213 | 16402 | -9.9 |
| Total G-7 | 55371 | 47081 | -15.0 |

*For Germany and United Kingdom the last available figures are for 1992

Source: UNCTAD 1995

TABLE 6: Import Penetration by Developing Countries of the Markets for Manufactures of the U.S., E.U., and Japan, 1970-92 (percentage)

| <i>Year</i> | <i>U.S.</i> | <i>E.U.</i> | <i>Japan</i> |
|-------------|-------------|-------------|--------------|
| 1970 | 0.4 | 0.5 | 0.2 |
| 1975 | 0.8 | 0.9 | 0.5 |
| 1978 | 1.4 | 1.1 | 0.6 |
| 1980 | 1.6 | 1.3 | 0.7 |
| 1985 | 2.7 | 1.7 | 0.8 |
| 1990 | 3.8 | 2.5 | 1.3 |
| 1992 | 4.3 | 2.8 | 1.3 |

Source: UNCTAD, 1995

TABLE 7 : Import Penetration by Italy and Japan of the Markets for Manufactures of the U.S. and E.E.C., 1958-75 (percentage)

| <i>Year</i> | <i>E.E.C. Imports from</i> | | | <i>U.S. Imports from</i> | | |
|-------------|----------------------------|--------------|--------------|--------------------------|--------------|--------------|
| | <i>Italy</i> | <i>Japan</i> | <i>Total</i> | <i>Japan</i> | <i>Italy</i> | <i>Total</i> |
| 1958 | 0.4 | 0.1 | 0.5 | 0.2 | 0.1 | 0.3 |
| 1960 | 0.7 | 0.1 | 0.8 | 0.4 | 0.1 | 0.5 |
| 1965 | 1.7 | 0.3 | 2 | 0.6 | 0.1 | 0.7 |
| 1970 | 2.4 | 0.5 | 2.9 | 1 | 0.2 | 1.2 |
| 1975 | 2.9 | 0.8 | 3.7 | 1.5 | 0.3 | 1.8 |

Source: UNCTAD (1995)

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