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Evidence from developed countries

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Sammanfattning

Unga arbetare har under senare decennier mött betydande svårigheter i många högutvecklade ekonomier när det gäller både sysselsättning och lön. En av förklaringarna är att teknisk förändring och globalisering har verkat till nackdel för mindre kvalificerade arbetare i allmänhet, och att unga har drabbats extra hårt genom sin bristande praktik. För att teorin ska kunna värderas måste trenderna isoleras från cykliska rörelser på efterfrågesidan och från storleksförändringar hos ungdomspopulationen och studiefrekvens på tillgångssidan. Artikeln beräknar för tretton OECD-ekonomier nationella förändringar av relativlön och sysselsättning för unga vuxna män, med hänsyn taget till efterfrågans cykliska karaktär och demografiska förändringar. Under beaktande även av förändringar i studiefrekvensen, kalkylerade med hjälp av en ²pseudoskattning² (där även vissa gymnasieelever och vuxenstuderande räknas in), framträder en negativ tendens i den relativa efterfrågan på yngre arbetskraft i sex länder, inklusive USA, Storbritannien och Frankrike, men inte i Tyskland eller Japan. Materialet från de andra fem länderna, däribland Sverige och Finland, medger inga bestämda slutsatser. De nationella institutionernas heterogena karaktär ifråga om både lönesättningen och övergången från skola till arbetsliv bidrar till såväl nationell mångfald som begränsad beviskraft.

There is nowadays a widespread sense that things have gone badly wrong for young workers in advanced economies, and that the difficulty is caused by a fall in their appeal to employers.

It is tempting to attribute the problem to a trend in labour demand that favours older, more experienced workers over younger, less experienced ones. The same line of interpretation has been widely favoured for the other major dimension of employee skill: educational attainment. The contemporary fall in the pay of less educated workers, as compared to more educated ones, in the US and the UK in particular, has been widely attributed to the spread of information technology and globalisation, both of which are taken to raise the productivity of more educated workers relative to less educated ones. An influential account of developments in the US claims that ‘relative demand shifts favouring more skilled workers are ... essential to understanding longer-run changes in the US wage structure’ (Katz and Autor 1999: 1513). The same factors might had similar effects in the experience dimension of skill, thereby impairing labour market prospects for young workers.

The validity of these propositions has however been contested. Doubts have been raised concerning the existence of skill-bias in technical change (Card and DiNardo 2002). Some commentaries deny the existence of an underlying trend unfavourable to youth (OECD 2002: 20-29).

This paper investigates the evidence concerning trends in youth relative pay and employment in developed economies since the mid-1970s, focusing on structural change on the demand-side of the labour market. It improves on previous research by including more countries, and by controlling for macroeconomic fluctuations, which affect youth employment particularly keenly. It then considers the growth of educational participation, as a further, supply-side, influence that complicates the interpretation of changes in youth outcomes.

Evidence of trends in youth outcomes

The marked deterioration in youth outcomes in the US labour market after the early 1970s was highlighted by Levy and Murnane (1992). Blanchflower and Freeman (2000: 3) subsequently affirmed that account, noting its relevance to other economies, and claiming that over the same period youth labour market outcomes had deteriorated in ‘virtually all OECD countries’. The evidence from which they generalised did not however include pay as well as employment and unemployment.

In my own work on the issue, I therefore considered changes in both youth pay and youth employment, and controlled on the supply-side for demographic swings in the size of the youth population. The resulting pattern showed marked differences across countries. Figure 1 shows the change in seven countries in the pay and employment of young males, relative to those of prime age adult males, during the longest period after 1975 for which data are available on both variables. The origin, in the upper right hand corner, represents no deterioration in youth relative outcomes in the labour market. Countries located towards the left of the diagram have experienced a decline in youth relative employment; those towards the bottom, a decline in youth relative pay.

The labour market position of young workers deteriorated significantly, relative to that of adults, in four of the seven countries – France, Sweden, the UK, and the US – but remained broadly stable in three others – France, Germany and the Netherlands. In the former four countries, the youth-related deterioration involved predominantly relative pay in the UK and the US, and relative employment in France and Sweden (Ryan 2001, Figure 2).

The data were confined to male youth, rather than all youth, in order to control for changes in adult labour force participation, which have been much larger for females; and to young adults rather than all youth, as data on pay were less complete for teenagers. Employment was measured as a share of the population in the relevant age group, in order to control for demographic swings in the youth and adult populations.

I interpreted the pattern in Figure 1 in terms of three factors. The first was skill-biased technical change: a general tendency in advanced economies for youth relative outcomes to deteriorate as part of a growing preference by employers for more over less experienced employees. The second concerned national school-to-work institutions. The exemption of Germany and Japan from the adverse trend in youth outcomes was attributed respectively to mass apprenticeship and school-employer hiring networks, as favourable influences on school-to-work transitions. The third was national institutions of pay-setting. More centralised and coordinated pay setting, which leads to mean narrower differences in pay between social groups and less responsiveness of pay differentials to conditions in the labour market, determined whether the effects of the deterioration in the demand for youth labour in the first four countries changed prices (a fall in relative pay) or quantities (a fall in relative employment).

These inferences were tentative, consistent with the small number of countries studied and the difficulty of explaining the trend in the Netherlands, which lacks any distinctively effective school-to-work institutions. The pattern in Figure 1 is striking, but it offers limited support to the hypothesis of a widespread demand-side trend to the disadvantage of young workers.

This paper adopts the same approach to the same issue, and takes it further. It examines the effects of including more countries and controlling for cyclical fluctuations on the demand side of the labour market. It then considers the implications of increased youth participation in formal education, which reduces the supply of youth labour, but may itself be caused by adverse trends in the demand for youth labour.

Analytical approach

The simple economics of youth outcomes in the labour market involves three components: the demand side, the supply side, and pay determination.

On the demand side, the central issue is the appeal of young workers to employers, as compared to that of adults. Employers are assumed to maximise profits. In doing so, they prefer to employ different categories of worker according to two attributes: relative productivity and relative labour cost. If the relative productivity of

young workers rises, or their relative pay falls, then, holding other factors constant, employers will demand relatively more youth labour. The relative demand for youth labour is then negatively related to its relative price. The easier it is for employers to substitute youth and adult employees in production, the more sensitive the demand for youth labour is to its price.

Changes in employers' relative demand for young workers may not become effective immediately. In countries with strong employment protection laws, it takes time for employment patterns to respond to changes in employers' desires – for example, if the price of youth labour falls, employers may find it difficult to lay off adult employees in order to replace them with young ones, and manage to adjust only as the other sources of labour turnover (quits and retirements) permit them to hire young workers. Employment protection law is however unlikely to be a major consideration for the trends considered here, which potentially disfavour young workers – for whom employment protection is generally weaker than for adults.

The position of the demand curve for youth labour is affected by changes in technology and trade. At any relative price, to the extent that technical change or the growth of international trade reduces the productivity of youth relative to adult employees, the relative demand for young workers falls.

Second, the supply of youth labour – i.e., the number of young workers available for employment, relative to adults – is assumed to be largely unresponsive to youth relative pay. It is however expected to vary strongly with two other factors. The first is the relative size of the youth population, as successive 'baby boom' cohorts enter and leave the youth labour market. The second concerns education – the share of young people who decide to remain in post-compulsory schooling, which varies strongly across time and country. Demographic swings are in principle independent of conditions in the youth labour market, but changes in educational participation are potentially influenced by them.

Finally, there is the way in which the relative pay of young and adult workers, and thus the relative price of youth labour, is determined. The 'supply-demand-institutions' approach considers two polar cases: competitive and coordinated pay setting, associated with market clearing and pay rigidity, respectively (Katz and Autor 1999).

In the competitive model of the labour market, price responds to the difference between demand and supply. If the (relative) demand for youth labour exceeds its supply, the relative pay of young workers falls. The same decline in relative pay reduces, and in the limit removes, the gap between demand and supply.

At the other extreme, in models of coordinated and centralised pay setting, the relative pay of young workers does not respond to changes in demand and supply. It depends on the preferences and bargaining power of trade unions and employers' associations. The outcome of their interaction is often seen as promoting narrow and stable pay differentials among social groups, as defined by age, as well as education, industry, and sex.

The effects on youth outcomes in the labour market of any trend decline in the demand for youth labour differ between the competitive and coordinated scenarios. In the competitive case, holding constant other influences, youth pay falls – and the less responsive are demand and supply to changes in the price of youth labour, the bigger the fall. In the coordinated case, youth pay does not change, and the decline in demand causes a fall in youth employment, whose severity depends on the size of the decline in demand relative to supply at the fixed relative price of youth labour.

In sum, the effects on youth outcomes of any adverse trend on the demand side depend on institutions of pay setting. The closer they are to the flexibility assumed in competitive theory, the more the effect is seen in youth pay rather than youth employment; the closer they are to the inflexibility of institutional theories of coordinated pay setting, the more the result shows up in youth employment than in youth pay.

The difference between the two scenarios relates to two contemporary analytical traditions. The first is the distinction between ‘liberal’ and ‘coordinated’ market economies, which corresponds broadly to that between the competitive and coordinated models of labour market adjustment (Hall and Sockice 2001). The second is policy debate over labour market ‘flexibility’. The advocates of increased flexibility, which include the OECD and many labour economists, advocate the liberalisation of pay setting in general, and relative pay flexibility by age in particular. Although few commentators advocate labour market rigidity *per se*, some have pointed to the discrepancy between the proposed and the realised benefits of increased flexibility (OECD 1994; Baker *et al* 2004).

Some limitations

The inferences derived from Figure 1 can however only be tentative. One limitation is that not much can be inferred concerning the effects of three variables (a trend in demand, school-to-work institutions, and pay-setting institutions) from just seven observations. A second is that, even were demographic effects effectively controlled by standardising for population size, changes in educational participation could still be expected to cloud the evidence.

Third, differences in the availability of pay and employment data across countries make it impossible to pick for all countries a single period for which the change in both youth outcomes – relative pay and employment – is measured. Although for most countries the available data span at least 20 years, those for Germany and the Netherlands cover only twelve years. The data in figure 1 cover therefore the maximum period for which data on both pay and employment were available. This approach has the advantage of maximising the cumulative size of any underlying trend in the demand for youth labour, but it has two disadvantages: different periodisations for different countries, and uncontrolled cyclical components in the demand for youth labour.

These deficiencies are now countered by three changes: first, including more countries; second, revising the choice of national measurement periods in order to remove cyclical effects; third, analysing changes in educational participation.

More countries and cyclically neutered periods

Changes in youth pay and employment can be measured across the same period in six other developed countries – Australia, Belgium, Canada, Finland, Italy, and South Korea – which are now included alongside the seven in Figure 1. The sample size increases substantially in relative terms, even if it is still small in absolute terms.

The second change responds to the lack of controls for cyclical effects on the demand for youth labour in the evidence in Figure 1. The tendency of youth unemployment to vary more with economic activity than does its adult counterpart is well established (Blanchflower and Freeman 2000). The changes in youth outcomes reported in Figure 1 may therefore be distorted by differences in the national economy's cyclical position in the opening year and in the closing year.

The measurement periods chosen for Figure 1 were the longest available, consistent with maximising the cumulative size of any trend in youth outcomes. That criterion is now replaced with that of maximising the visibility of the trend, by picking for each country the longest cyclically-neutral period available – which is taken to be the longest period, centred on the late 1980s, for which the adult male unemployment rate – the standard indicator of the cyclical state of the aggregate labour market¹ – was similar at both its start and its end.

The tendency of adult unemployment to rise in most economies after the mid-1970s means that the duration of the chosen period is shorter than is desirable, at between seven years (Italy) and twelve years (Australia, Canada and Japan).² The brevity of these periods means that any trend in youth outcomes will be correspondingly smaller and, on that count, harder to detect, than in the longer periods used for Figure 1. The benefit is the broad neutering of the cyclical component in youth labour demand.

Figure 2 shows the effects of these two adjustments.³ The pattern established by Figure 1 remains intact in particular respects. First, evidence of substantial youth-based deterioration now applies to eight countries, not just four – though, not surprisingly, shorter time periods are associated with smaller changes in pay-employment space than in Figure 1.

Second, the deterioration again involves either relative employment (in France and Belgium) or relative pay (with Canada, Australia, Italy and the Netherlands joining the UK and the US), but not both: i.e., no country shows a substantial decline in both the pay and the employment dimensions. Indeed, the contrast between 'liberal'

¹ The unemployment rate of adult males provides an imperfect guide to labour market slack over time, given changes in the frictional and structural components of unemployment, as well as in labour market policies and official definitions of unemployment.

² It was not possible to pick a start year and an end year with essentially the same rate of adult male unemployment for Finland or France, whose adult male rates were 2 points lower and 1 point higher, respectively, at the end than at the start of the period.

³ The change in youth outcomes in Canada and Italy are sufficiently close for the position of the two countries to coincide in Figure 2.

and ‘co-ordinated’ market economies in terms of the focus of adjustment – price or quantity – is sharpened by the arrival of Australia and Canada alongside the UK and the US in the former category, and of Belgium alongside France in the latter.

Third, in the other five countries, no significant deterioration occurred in either the pay or the employment dimension. This category now includes, in addition to Germany and Japan, Sweden, Finland and South Korea. In Korea, youth relative pay even rose, albeit only moderately.

Controlling for demand cyclicity alters particular details. The first is the absence for Sweden, and also for Finland, of any trend deterioration through 1990. The implication is that the large falls in relative youth employment that show up when the period for both countries is extended to the mid-1990s, as for Sweden in Figure 1, were caused by the severe cyclical downturns that both countries experienced in the early 1990s. The evidence suggests no trend deterioration in either case – through the 1980s, at least.

Institutional factors

The second effect of controlling for cyclical factors is some clouding of the distinction between pay and employment as modes of adjustment to labour market imbalances. Italy and the Netherlands – countries that are not typically classed as liberal market economies – join the English-speaking countries in the group of countries that show a substantial change in youth pay but not in youth employment.

Nevertheless, the role of pay-setting institutions in labour market adjustment is broadly strengthened by including more countries and controlling for economic fluctuations. A significant positive correlation is present between the change in youth relative pay (Figure 2) and the Hall-Gingerich (2004) index of national coordination of labour relations (Table 1).⁴ Countries with less co-ordinated pay setting institutions show lower rates of growth of youth pay, which in most cases means a larger fall in youth relative pay.

Separate indices of trade union membership, bargaining coverage, and bargaining co-ordination are also associated in the expected direction with the change in youth relative pay, but none attains statistical significance. These results parallel the associations found by OECD (2004) between labour market institutions and relative youth outcomes, and by Blau and Kahn (1999) between institutions and pay inequality.

The third issue is the role, if any, of national school-to-work institutions. The evidence for such effects is if passively strengthened by the departure of the Netherlands from the ‘no deterioration’ group – which removes the leading anomaly facing this interpretation of the evidence in Figure 1. At the same time, the absence of distinctive school-to-work institutions in Sweden and Finland – countries whose reliance on full-time upper-secondary education makes for difficult school-to-work transitions (Shavit and Müller 1998) – weakens support for the hypothesis that strong

⁴ The Hall-Gingerich index is based on a factor analysis of differences across 20 advanced economies around 1985-95 in the level and extent of coordination in pay-setting (three categories each) and the rate of labour turnover in the economy as a whole.

school-to-work institutions are what exempt countries from an adverse general trend in youth labour market outcomes.

Changes in educational participation

The evidence considered here is confined to young adults partly in order to reduce the obscuring effect of changes in educational participation, which increased after the 1970s more strongly for teenagers than for young adults. Had educational participation remained unchanged, Figure 2 would provide a potentially valid guide to trends in the demand for youth labour, given that cyclical fluctuations have been neutered on the demand side and demographic ones on the supply side.

However, as the educational participation of young male adults did increase in all countries, the interpretation of changes in youth outcomes must be pressed further. Comparable data on educational participation by age are available only from 1996. In that year, between one-quarter and one-half of 20-24 year old males were educationally active, according to country (Table 2, column 1).⁵ The extent to which the participation rate increased during the periods studied here can be estimated by constructing a ‘pseudo’ participation rate, which is defined as the ratio of enrolments in tertiary education to the young adult population (males only; columns 3, 5). It suggests that participation increased in all thirteen countries, and that the increase differed greatly from country to country: small (less than a six percentage point rise) in Germany, Japan, and Sweden, but large (more than a 25 point rise), in Australia, Canada, Finland, and South Korea.

The pseudo participation rate is a weak measure of the absolute level of young adult participation in any particular country or year, given that some young adults participate also in upper secondary and adult education, and that many participants in tertiary education are teenagers or adults, not young adults. It is however potentially more valid as a measure of national differences in the increase in educational participation.⁶

As youth educational enrolments increased in all countries, it is not possible to control for the effect on youth outcomes – as was done on the demand side for the effect of economic fluctuations – simply by comparing years with similar educational participation rates. Two alternatives are then feasible. The first is to estimate econometrically the effects of increased participation on youth outcomes and use the result to hold participation statistically constant. The second, less ambitious, option is to use the qualitative attributes of changes in youth outcomes to distinguish changes in demand-side influences from those in educational participation on the supply side. The latter course is adopted here.

⁵ The educational participation rate of 20-24 year old males averaged 34.6 per cent in 1996 in the fifteen advanced economies for which comparable data are available (OECD 1999: Table D1.2a).

⁶ In particular, the prominence of 18-19 year olds in tertiary enrolments, particularly in the English-speaking countries, means that the pseudo participation rate is seriously flawed as a guide to absolute enrolment rates. However, if the shares of 18-19 year olds and adults (25+) in tertiary enrolments change little as enrolments rise, the pseudo participation rate should provide a reasonable indicator of the change in the educational participation rate of young adults.

The simplest way to analyse the association between youth labour market outcomes and the change in educational participation is to assume that participation is the causal variable, and youth pay and employment the dependent ones. Thus, in human capital theory, if young people's expectations of the gain in future income resulting from acquiring additional schooling increase, and if no students are employed while enrolled in schooling, an increase in educational enrolments reduces the relative supply of youth labour on a 'one for one' basis.

The effect of the change is to reduce youth employment. In that respect it is indistinguishable from an adverse trend in the demand for youth labour. The role of the two factors may however still be distinguished because their implications for youth pay differ, under competitive pay setting at least: a negative trend in the demand for youth labour increases the oversupply of youth labour and lowers youth relative pay; a negative trend in the supply of youth labour reduces the oversupply of youth labour and raises youth relative pay. Thus, the rise in the relative pay of more educated workers, alongside that in their relative employment, in the US in the 1980s has been interpreted as evidence of a more rapid increase in the demand for than in the supply of skills (Katz and Autor 1999).

The difference in predictions means that any adverse trend in labour demand may still be visible in the evidence, despite the absence of controls for changes in educational participation. When both youth relative pay and youth employment decline, the implication is that an adverse trend on the demand side not only features, but is even strong enough to reverse the effects of an upward trend in educational participation on the supply side. This analysis is summarised in the first three columns of Table 3 (panels A and B), which show the divergent implications for youth outcomes of shocks – i.e., autonomous trends – in supply and demand under competitive market conditions.

Before proceeding with the analysis, three complications must be addressed. The first concerns institutions of pay determination. If competitive conditions are assumed, and demand conditions held constant, youth employment falls and youth pay does indeed rise. If, however, pay differentials are rigid, youth pay remains unchanged but youth employment falls and youth unemployment rises. The analysis must therefore consider changes in youth unemployment, and not just in pay and employment. Column four of Table 3 (panels C and D) summarise the expected effects of the two types of shock on youth outcomes under coordinated pay setting with a rigid pay structure. In this case, the two can be distinguished only in terms of the change in unemployment, as both predict no effect on pay and a negative effect on employment.

Second, as students are often employed while enrolled in schooling, an increase in educational participation need not mean a reduction in youth employment. Were student employment to increase faster than student numbers, e.g., as a result of a decline in public subsidies to university students, youth employment would be expected to rise, not fall, in association with educational expansion.

In 1996, in fifteen advanced economies, an average of 24 per cent of 20-24 year old male students were employed. The rate was low in continental European countries (except Finland), at between three and 15 per cent, and high in English

speaking ones, at between 38 and 65 per cent (Table 2, column 7). Data on changes in student employment rates are again scanty. Evidence that the 20-24 year old rate changed little in the US after 1989 (Juhn and Potter 2006: Table 6) may well apply to continental European ones as well, given that their rates remained low through 1996. I therefore take changes in youth outcomes in those countries to have been affected only marginally by changes in student employment. The same is however unlikely to apply to the other three English-speaking countries, whose student employment rates were high in 1996, with considerable scope for them to have grown since the 1970s.

Third, there is the possibility that the change in educational participation, instead of driving youth labour market outcomes, may itself be caused by them, if only in part. When unemployment rises and jobs become harder to find, more young people may opt to continue (or return) to studying than to seek work. In that case, instead of acting as an autonomous supply-side cause of declining youth employment, increased educational participation actually indicates the underlying youth-related deterioration in labour demand. Its expected effect would be to reduce the extent to which reduced youth employment leads to increased youth unemployment, and to reduce pressures for a decline in youth pay.

The importance of this factor depends on the extent to which young people's decisions to enrol in education depend on current labour market conditions, as opposed to future ones – an issue concerning which the evidence is limited and mixed.⁷ A strong contribution from youth joblessness to educational enrolments characterises discussions of the evidence for France (Verdier, 1993). National micro-data typically reveal positive relationships between youth unemployment and educational participation. The association proves however only modest in some contexts. Using time-series evidence for the period between the late 1960s and the mid-1990s in four countries – Germany, the Netherlands, Sweden and the UK – McIntosh (2001: 69) concludes that ‘the level of unemployment seems to play only a small part in the decision of whether to remain in education’.

That conclusion is particularly challenging for Sweden, where educational participation and youth unemployment both rose strongly in the 1990s. It appears however that educational participation depends much more on prior educational attainment, pay differences by educational attainment among adults, and household income, than on youth unemployment.⁸ I therefore treat changes in educational participation as largely, though not wholly, exogenous with respect to current employment and unemployment among young workers.

Inferences concerning trends in labour demand

⁷ A causal effect from youth unemployment to educational enrolment is suggested by the positive association across countries between youth unemployment and youth educational participation (OECD 1999: Chart D1.3). The relationship is particularly suggestive in view of the fact that any autonomous effect of enrolment on unemployment is expected to be negative. Such cross-sectional relationships are however potentially distorted by uncontrolled heterogeneity (differences) in unmeasured national attributes.

⁸ McIntosh's evidence for Sweden refers to the decision by 16 year olds to continue upper secondary education. His findings may therefore not translate directly to decisions by 20-24 year olds to participate in tertiary education.

Allowing for these three complications, what can be inferred about the trend in the demand for youth labour in developed countries? The framework in Table 3 is used here to classify some of the national experiences studied here. The assignment of countries to the four cells in Table reflects both their pay-setting institutions (Table 1) and their trends in youth pay and employment (Figure 2). Particular interest attaches to countries whose changes in youth outcomes suggest an adverse demand-side trend strong enough to dominate any opposing effects from increasing educational participation (i.e., Box B as opposed to Box A, and Box D rather than Box C).

Box B, which combines flexible pay setting with a preponderance of demand-side over supply-side trends, is potentially occupied by the four English-speaking countries (Australia, Canada, UK, USA). These economies saw little change in youth relative employment but a marked fall in youth relative pay.⁹

France and Belgium are assigned to Box D: co-ordinated pay setting, with a preponderance of demand over supply shocks. Their pay-setting institutions are mirrored in the broad stability of youth pay. The large fall in youth relative employment in both countries could have been caused either by an autonomous increase in educational participation, or by an adverse trend in the relative demand for youth labour that in turn increased educational participation – or, more plausibly, some mixture of the two. As the adjustment of youth pay is taken to be institutionally blocked, changes in that dimension cannot – in contrast to the previous countries considered – be used to identify the relative importance of demand side and supply side factors. Instead, it is the rise in youth relative unemployment that suggests that an adverse trend on the demand-side has dominated.¹⁰

The evidence for the other countries does not highlight any adverse trend in youth labour demand. That may be because, although such a trend exists, it is submerged by uncontrolled changes on the supply side. Alternatively, no universal trend may be present in the first place.

The principal candidate for Box A in Table 3, which indicates a predominance of supply-side trends over any adverse demand-side trend, under pay flexibility, is South Korea. A large increase in educational participation (Table 2) was accompanied not only by falling youth employment but also by *rising* youth pay (Figure 2). The low ranking of South Korea on indicators of labour market co-ordination is consistent with this interpretation (Table 1).

Trends in Italy and the Netherlands do not fit directly into the schema used here. The two countries show a moderate decline in youth pay, along with little change in youth employment. As educational participation increased moderately in both, student employment may be taken to have risen alongside educational participation. If so, the fall in youth pay might suggest, as for the English-speaking

⁹ This interpretation implicitly assumes that, in the four ‘Anglo-Saxon’ economies, employment increased among students at least as strongly as educational participation did among youth, given that youth employment did not fall, but even rose slightly.

¹⁰ The ratio of youth (20-24) to adult (25-54) male unemployment rose from 2.7 to 3.2 in Belgium (1985-94) and from 2.6 to 2.8 in France (1987-97; OECD Labour Force Statistics: http://stats.oecd.org/wbos/default.aspx?DatasetCode=LFS_D). The scale of these increases is only moderate, and potentially affected by changes in activity on labour market programmes.

countries, an adverse demand-side trend – but the fall in youth pay is unexpected, given the two countries’ moderately high rankings for the co-ordination of pay-setting (Table 1).

Finally, Germany, Japan and Sweden saw little change in youth pay, youth employment or educational participation during the periodisations used here. That suggests that any shocks on either the supply-side or the demand-side were weak. An alternative interpretation, as originally suggested for Germany and Japan, is that these countries also experienced an adverse trend in labour demand, but their school-to-work institutions counteracted it. The latter reading appears less promising for Sweden than for Germany and Japan.¹¹

Data limitations

The quality of the evidence used here also constrains the conclusions. The first limitation is aggregate nature: all types of young workers are lumped together. The result is that any youth-related trends in labour demand *within* the youth labour force are not captured. Murnane and Levy (1991) showed that the principal losers from the growth of pay inequality in the US in the 1980s had been young workers who had not completed secondary education. More recent data align with that in showing that the wage returns to education in the US have increased more strongly for younger than for older adults – a development that may reflect the more rapid growth in differences in computer usage at the workplace among younger than older workers (Card and DiNardo 2002). Their evidence suggests that adverse trends in labour demand have focused on less educated young workers, with the increasing computerisation of workplaces as a contributory factor.¹² The data used here do not permit any exploration of the interactions between experience and education within national trends in labour market outcomes.

The evidence is also potentially distorted by the increase in educational participation. To the extent that selection into education is positively related to intrinsic individual attributes, such as innate ability, the ability distribution of the youth labour force has been increasingly truncated from above – i.e., the ability of the average young worker has declined. Some part of the fall in youth relative pay may be explicable in these terms, particularly under decentralised pay setting, and that part does not denote any adverse trend in intrinsic youth outcomes. It is unlikely, however, that the greater fall in youth pay in the English-speaking economies than in France and Belgium could be explained in such terms, as educational participation rose substantially in all those countries.

Finally, the limited coverage of pay and employment statistics may distort the evidence – as notably in Japan, where the more rapid growth of non-regular employment contracts for young employees than for adult ones is not captured by official pay statistics. The threat is that the change in youth pay is then overestimated,

¹¹ Finland would be placed in this group had its large increase in educational participation been accompanied by a commensurate rise in student employment.

¹² Card and DiNardo note that the reversal over the period 1979-99 of the decline in computer use with age may help explain rising pay differences by experience – i.e., lower youth relative pay, in the approach used here. But the change in this respect within experience groups was much greater than that between them.

and that in youth employment underestimated (in absolute terms) . The damage done is however contained here by the focus on young adult males during 1987-97: the growth of non-regular employment was less for that category in that period than for teenagers, for females, and for all youth categories in the subsequent period.¹³

Conclusions

The evidence presented here is suggestive, but not conclusive, concerning the hypothesis of a youth-unfriendly trend in labour demand in all developed economies, such as might derive from skill-biased changes in production technologies and international trade patterns.

Prior evidence suggestive of such a trend has been strengthened by including more countries and controlling for cyclical effects in youth employment. The distorting effects of increases in educational participation could however be counteracted only selectively. Moreover, the data themselves are weakened by their limited coverage of youth employment, by the absence of breakdowns by educational achievement, and by compositional changes in the intrinsic qualities of the youth labour force.

More positively, the evidence does suggest a demand-led youth-related deterioration in the labour market in particular groups of countries – notably Australia, Canada, the UK, and the USA, on the one hand, and France and Belgium, on the other. The decline in youth relative pay in the former group, and the increase in youth relative unemployment in the latter one, penetrate the clouding effect of increases in educational participation, and provide evidence of substantial demand-side deterioration for young workers.

It is however not possible to explain in such terms the similar stability of youth outcomes in Sweden and – in particular, given its large increase in educational participation – Finland, two countries whose lack of distinctive school-to-work institutions discourages an interpretation that sees such institutions as potentially conferring immunity from adverse developments in technology and trade. Given also the youth-favouring developments in South Korea, the evidence does not permit us to infer the presence of any universally youth-unfriendly trend in the demand for labour in developed economies.

On related issues, the evidence is consistent with a significant role for national institutions of pay-setting in the evolution of youth relative pay. Greater pay flexibility, associated with more decentralised pay setting in the English-speaking economies, contrasts with relative pay stability in the continental European and Japanese economies, associated with more centralised and co-ordinated pay setting.

Finally, the part played by the distinctive school-to-work institutions of Germany and Japan in those countries' favourable trends in youth outcomes – if only for young male adults through the mid-1990s – remains unclear. It is true that none of the countries in which either youth relative employment or pay fell can boast any

¹³ The share of non-regular contracts male employment rose from 14.8 to 22.8 per cent for 20-24 year olds, as compared to 7.7 to 8.7 per cent for adults (25+) between 1987 and 1997 (Ministry of Internal Affairs and Communications, *Employment Status Survey*, various years).

equivalent to those institutions. But Finland and Sweden also showed no unfavourable trend in youth outcomes – if only through 1990 – and their school-to-work arrangements are not notably different from, let alone superior to, those of various other developed economies.

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Table 1. National pay-setting institutions and their correlation with the change in youth relative pay

	(1)	(2)	(3)	(4)	(5)
	Change in relative pay of young male adults (%)	Labour market co- ordination ranking (undated)	Pay-setting co- ordination index 1990-94	Trade union membership density (%) 1990	Collective bargaining coverage (%) ^b 1990
Australia	-7.8	4	2	40	80
Belgium	-0.3	7	4	54	90
Canada	-6.2	2	1	33	90
Finland	0.9	10	5	72	90
France	0.1	6	2	10	80
Germany	2.0	11	4	31	80
Italy	-6.3	8	3	39	20
Japan	0.0	12	4	25	20
Korea (S)	3.8	n.a.	1	17	20
Netherlands	-4.1	5	4	25	70
Sweden	0.8	9	3	80	80
UK	-9.4	3	1	39	40
USA	-6.4	1	1	15	18
Rank correlation with (1) ^c		-0.77*	-0.41	0.06	0.22

Sources. Column (1): as for Figure 2; (2): Hall and Gingerich (2004), Figure 1; (3)-(5): OECD (2004), Tables 3.3, 3.5.

Notes: asterisk indicates significantly different from zero (5% level of significance)

a. Correlations exclude Korea

b. Minima (e.g., '80+' is taken to be 80)

c. Rank correlation of variable with change in youth relative pay (column 1)

Table 2. Educational participation and student employment, young adult males (%)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	----- Educational participation rate ^a -----						Student employment rate ^b
	Survey-based ^c	Enrolment-based: pseudo-participation rate ^d					Survey-based ^c
	1996	Start year	Rate	End year	Rate	Change (5)-(3)	1996
						% pts	
Australia	31.7	1983	28.3	1993	63.4	35.1	64.7
Belgium	38.0	1985	29.5	1994	46.1	16.6	7.4
Canada	36.6	1983	46.5	1992	80.7	34.2	41.0
Finland	44.2	1983	32.5	1993	58.6	26.1	26.7
France	48.5	1987	30.7	1997	49.8	19.1	5.6
Germany	31.3	1984	40.5	1994	45.9	5.4	11.5
Italy	29.4	1987	28.2	1995	38.9	10.7	3.2
Japan	n.a.	1987	37.4	1996	43.0	5.6	n.a.
Korea (S)	n.a.	1984	67.3	1995	95.0	27.6	n.a.
Netherlands	n.a.	1985	36.9	1995	45.8	8.9	n.a.
Sweden	35.9	1984 ^e	31.0	1993	36.0	5.0	15.3
UK	27.2	1984 ^e	24.2	1993	38.4	14.2	37.9
USA	32.3	1983	59.4	1992	69.9	10.5	58.8

Sources: cols (1) OECD (1999), Table D1.2a; cols (3), (5): UNESCO, *Statistical Yearbook*, various years (Paris: UNESCO); OECD online education database (http://stats.oecd.org/wbos/default.aspx?DatasetCode=LFS_D)

Notes: percentages of young adult male population

a. Share of young adult male population

b. Share of young adult male student population

c. Taken from national household-based labour force surveys

d. Enrolments (part-time and full-time) in tertiary education (ISCED levels 5-7) as a percentage of 20-24 year old population; males only; taken from most recent edition in which data are available; where data are available for both years from OECD and UNESCO, the former are preferred.

e. Adjusted by one year from that in Figure 3 in order to avoid break in series (Sweden) or owing to gap in population series (UK)

Table 3. Predicted effect of demand and supply shocks on youth outcomes in the labour market, by type of shock, outcome, and pay-setting institutions

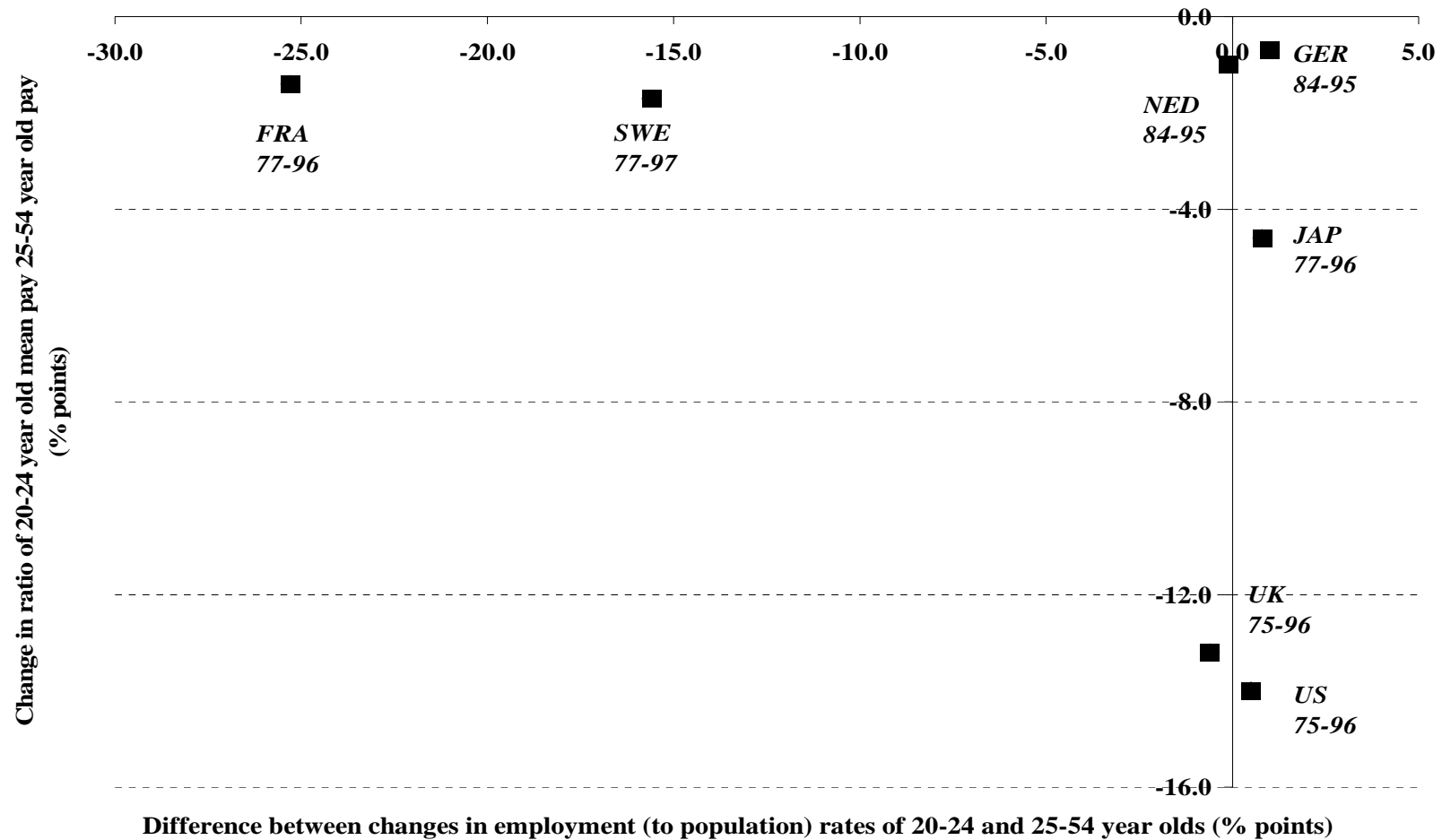
Negative shock ^a	Change in youth relative	Pay-setting institutions			
			Competitive		Co-ordinated
Supply (e.g. educational participation)	Pay		+		0
	Employment	(A)	-	(C)	-
	Unemployment		0		0
Demand (e.g., skill-biased technical change)	Pay		-		0
	Employment	(B)	0	(D)	-
	Unemployment		0		+

Notes: Wage-elasticity of supply is assumed to be zero

a. Autonomous leftward move in relative demand or supply curve

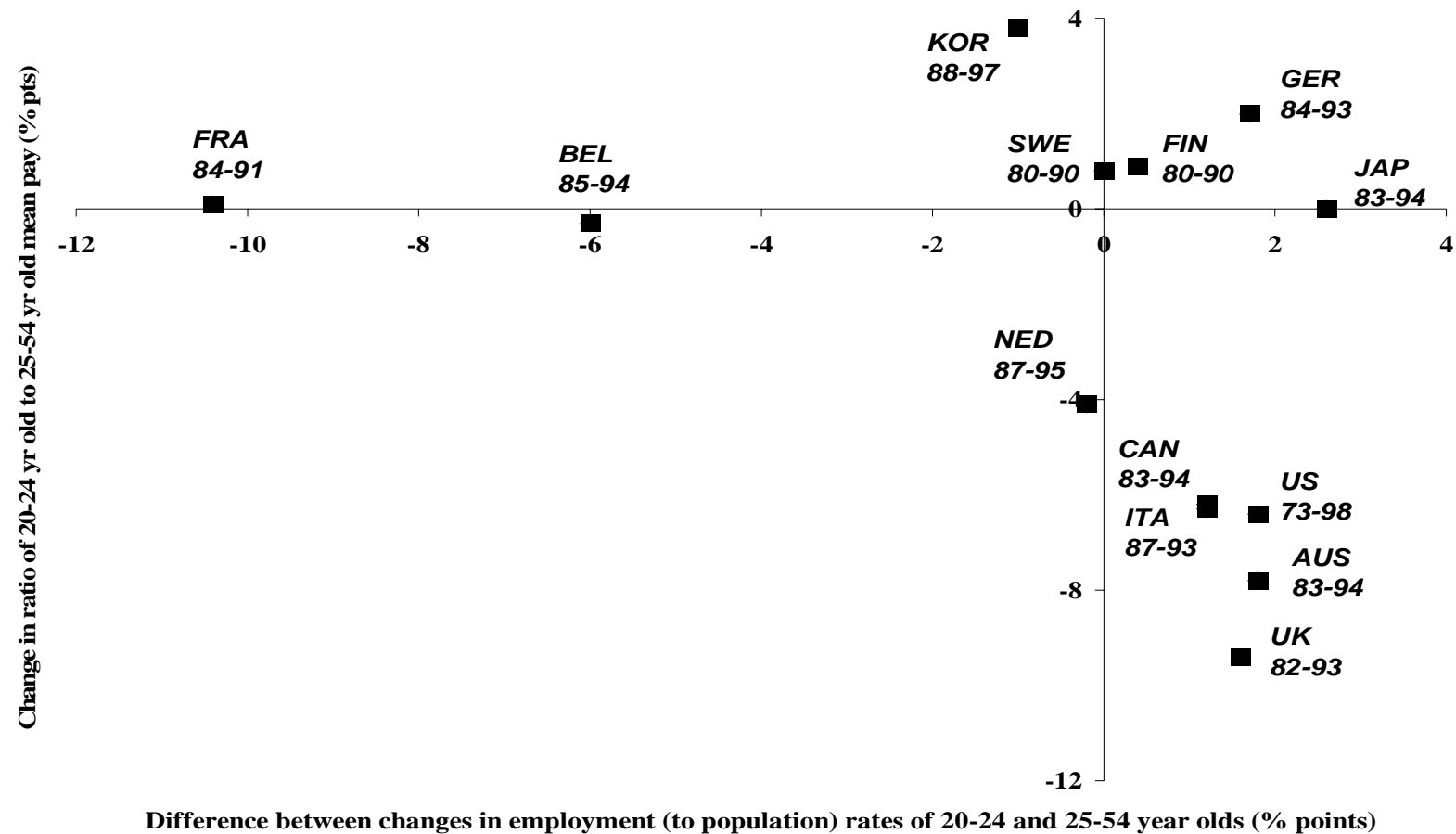
Sign is physical change

Figure 1. Changes in the pay and employment of young males relative to prime-age male adults, by country



Source: Ryan (2001) Figure 2; data taken from OECD, *Labour Force Statistics* and Earnings Database (unpublished)

Figure 2. Changes in pay and employment of young adults relative to prime-age adults: male employees in thirteen advanced economies during cyclically-neutral periods centred around the 1980s



Sources: as Figure 1

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