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Explaining the Decline of the UK Middle Class in the 1980s

INTRODUCTION

The existence and size of the middle class of a given country seems to be of large importance. Easterly (2001) concluded that countries with a large middle class and that are not too ethnically diverse have higher growth and better education, health, infrastructure, economic policies political stability and democracy. Fukuyama (2012) associates the development of the liberal democracy with the presence of the European middle classes. He also thought that the growth of the middle class was one of the factors that stemmed the flow of 20th century Marxism, since it decreased the sharp division of society between rich and poor, and that developments like a disappearing middle class would today still have major ideological consequences. This line of thinking is supported by the fact that the only areas where leftist radicalism persists are places with very high inequality, such as parts of Latin-America and Nepal.

In many developed countries the middle class has been shrinking rather than expanding (Pressman, 2007). The declining middle class of United States has received considerable attention (such as by Ehrenreich, 1986) and causes of income polarization in Canada to a certain degree as well (such as by Kuhn, 1995). However, for the United Kingdom there has been less attention for income polarization. Job polarization in the UK since the 1970s has been studied by Goos and Manning (2007) and Salvatori (2015), but this was relatively limited in scope and did not extent to the influence on household income which best indicates changes in the size of the middle class. The aim of this paper is to partly fill the gap and to find out what factors can best explain the growing income polarization that has taken place in the UK, particularly throughout the 1980s. The labour market structure and developments which have taken place in the US are in many ways relatively similar to the UK (Gosling & Lemieux, 2004). I have therefore taken some of the explanatory mechanisms from the polarization literature about the US and also Canada to see if they are applicable to the UK as well. Additionally, some other explanatory mechanisms are not from the polarization literature but from the 'regular' income inequality literature, but I thought them to possibly also be relevant for explaining UK income polarization. This way I have a collection of possible causes and research that can tell something about the explanatory relevance of each cause. This may in turn tell us something about the general explanatory significance of these causes for a declining middle class in other countries.

In this paper I will be using terms similar to 'declining middle class' and '(income) polarization' synonymously. Income polarization is the more technical definition and is less ambiguous than declining middle class. What can be defined as middle class can differ greatly. Furthermore, a strict definition of the middle class in terms of a certain range of people or income in the income distribution is problematic when measuring changes in the middle class across time, as I will discuss in more detail in the next section. Therefore it might be better to say that I measure income polarization, meaning a convergence of incomes at the lower and upper end of the income

distribution at the expense of the middle. Developments in income polarization then indicate changes in the size of the middle class. This way of using income polarization to measure changes in the middle class seems to me to be methodologically sound, but the downside is that it does not indicate what exactly the size of the middle class is in a given year, merely whether it has grown or shrunk. Multiple authors have already indicated that what constitutes the middle class might extend beyond solely income to factors such as a particular set of values (Kharas, 2010) and investment in education and health (Atkinson & Brandolini, 2011), meaning that a pure income-based definition might be insufficient for capturing exactly what is generally perceived as the middle class anyway. Nonetheless, income probably is still the most important determinant of what constitutes middle class, meaning that polarization as the amount of convergence around high and low incomes should still be a good indicator of changes in the UK middle class size.

The reason I focus on income polarization instead of 'regular' income inequality is because I want to focus on developments in the middle class, and I think the polarization is best suited measuring that, as mentioned in the previous paragraph. I will elaborate on this in the next section. Inequality and polarization are different phenomena with a different significance. Movements in polarization and inequality often coincide but not all the time. For example, when an income distribution converges around the means of the upper and the lower half of the distribution, so that the middle and the most upper and lower part disappear, polarization increases but inequality as measured by every inequality measure that is consistent with the Lorenz criterion declines (see Appendix A and Wolfson, 1994, p. 353). The divergence between inequality as measured by the Lorenz curve and polarization is not only of theoretical but also of practical importance, since divergent movements in inequality and polarization also occur in practice. Examples of this can be seen in the dataset of Brzezinski (2013), whose polarization data I will be using for this paper.

Polarization is also relevant in a different way than inequality. Esteban and Ray (1994) argue that a society that is polarized in some attribute is likely to contain tensions and social unrest. They argue that a society divided between groups that are homogenous internally, but very dissimilar in comparison to other groups, has a high chance on intergroup conflict. This is especially true when the division is in terms of income or wealth, even when inequality between these groups is relatively low. For income polarization, this would mean societal tension and possibly conflict between people with high and low incomes as a result of the disappearance of a mediating middle.

The outline of the paper is as follows. I will first discuss the measurement method and data I depend on and then display how income polarization in the UK has developed during the period 1965-2005, showing that it has particularly increased throughout the 1980s. After that, I will present a number of causes from the polarization and inequality literature and discuss how well these can explain the polarization developments presented in the data section based on the available research. The paper ends with a conclusion.

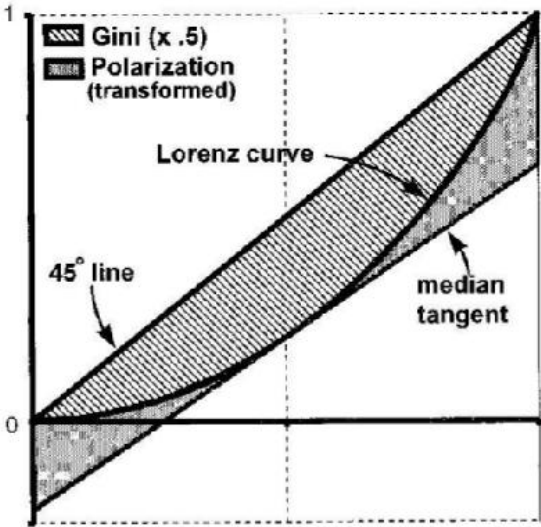
MEASUREMENT

I use the Wolfson (1994) polarization index rather than a pre-defined measure that measures changes in the size of the middle class, which would have been an option as well. Both of these can measure movements in the income distribution away from the median towards the poles, which can be described as a shrinking middle class. However, the pre-defined middle-class measures are not very reliable, as Foster & Wolfson (2010, p. 3) noted. This is because the selection of the range of income that constitutes the middle class is more or less arbitrary. For instance, a range of both 75% to 125% and 60% to 225% of median income can be used for defining the middle class, but it is not obvious why one of these is preferable to the other. Similarly, when measuring share of income going to the middle class as a certain part of the population, it is not immediately clear why the focus should for example be on the middle three quintiles of the population instead of the middle quintile. This is a problem when comparing the size of the middle class across time, because empirical results about a declining or growing middle class may be reversed when different cut-off points for defining the middle class are taken. According to one range the middle class may have shrunk, while according to another it may have grown. This is why I use a (bi)polarization index. The level of bipolarization indicates changes in the size of the middle class across time.

The polarization index I will be using is the one developed by Wolfson (1994) and Foster & Wolfson (2010). The Wolfson polarization index can be derived from the Lorenz curve, that is, from the area between the tangent line at the median income and the Lorenz curve (see figure 1). This area is $T - \text{Gini} / 2$, in which T is the area of the trapezoid that is defined by the 45 degree line and the median tangent. The area is multiplied by four so that the index has a similar range as the Gini (between 0 and 1). The polarization formula becomes $P = 2 (2 T - \text{Gini}) / m_{\text{tan}}$; in which m_{tan} is the slope of the tangent to the Lorenz curve at the 50th population percentile. Polarization is 0 when income is perfectly equally distributed and 1 when income distribution is perfectly bimodal, meaning that half the population receives zero income and the other half receives 2μ income (the median is equal to μ here). The polarization measure contains both the spread of the income distribution away from the median income and bimodality of the income distribution, the latter meaning convergence around two poles that are below and above the median income (Wolfson, 1997).

I have chosen to use the Wolfson polarization index as opposed to other polarization indices because it specifically measures bipolarization, meaning convergence around a high and low income group. This is suited for indicating changes in the size of the middle class. As far as I know, it is the only polarization measure that only measures bipolarization. Other measures, such as the one constructed by Esteban & Ray (1994) and the ones that build forth upon this index, can measure bipolarization, but they assume that the income distribution is pre-divided into the amount of groups that is best suited for that particular society. This is not very useful for our purposes because we specifically want to focus on bipolarization of income, so that we measure polarization around two and not possibly more groups.

Figure 1 – Deriving the polarization index from the Lorenz curve



Wolfson, 1997, p. 407

DATA

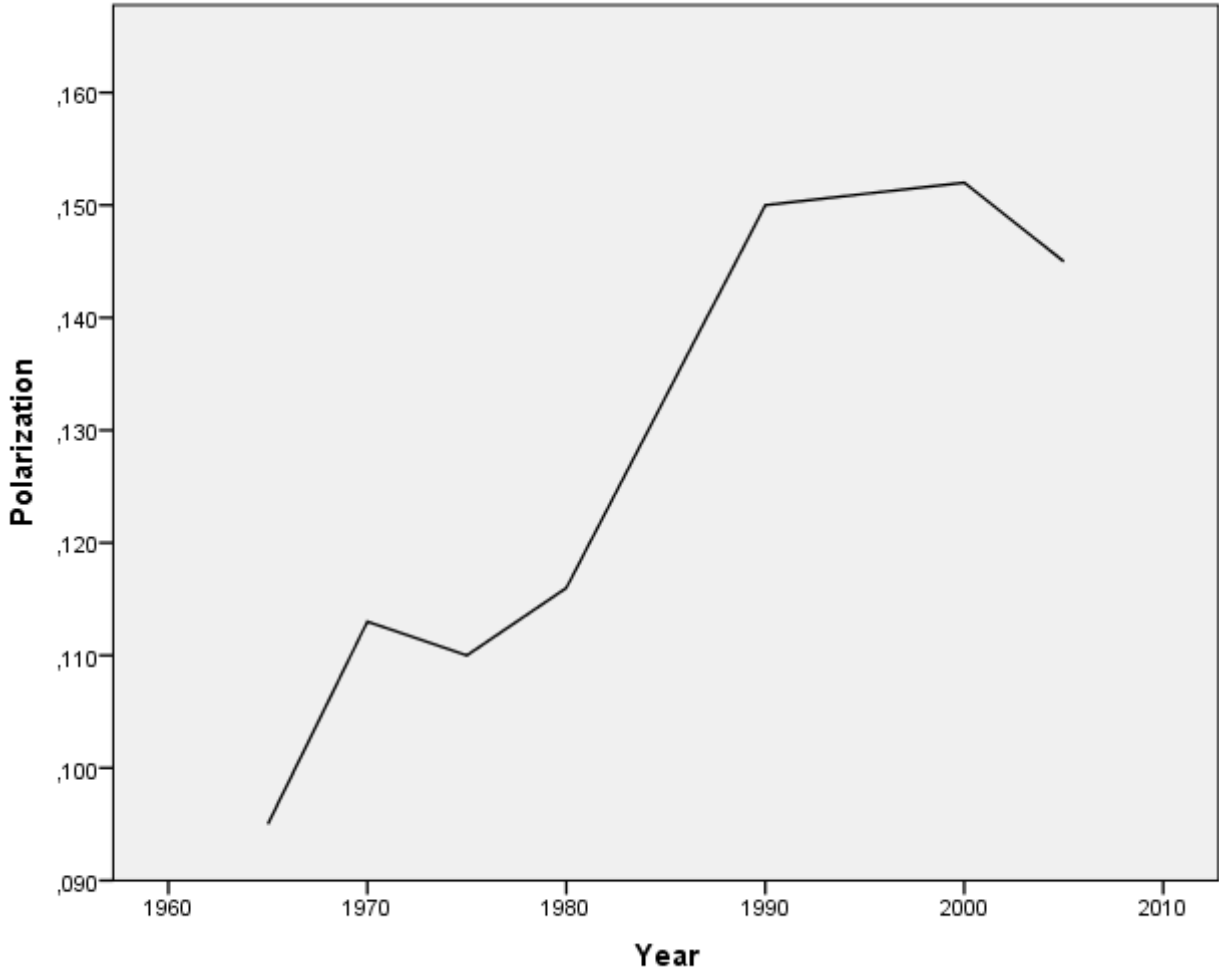
I have used the polarization data collected by Brzezinski (2013) rather than collect my own data because Brzezinski’s data is extensive and gives a stable indication of the level of polarization across a period the period of time in which I am interested. Brzezinski combined information from both the Luxembourg Income Study (LIS) and recalculated data from the World Income Inequality Database (WIID) and computed the polarization index for the UK for every five years for the period 1965-2005 (see Appendix B). The information from the LIS and WIID are useful for this paper because they measure net income data, meaning that taxes and social transfers are already subtracted and added. Looking at this type of household disposable actually shows what families have to spend, so that it best indicates changes in the size of the middle class. Household disposable income is dependent on more factors than indicators like the pre-tax wage distribution, because household disposable income is also influenced by the structure of families and government transfers and it takes account of unemployment. This makes it somewhat more complicated to study.

Table 1

year	1965	1970	1975	1980	1985	1990	1995	2000	2005
Polarization	0,095	0,113	0,11	0,116	0,133	0,15	0,151	0,152	0,145

In table 1 developments in income polarization in the UK as measured by the Wolfson polarization index (1994) for every five years in the period 1965-2005. I have graphically displayed these developments in figure 2. As can be seen, at the beginning of the period polarization seemed to be increasing somewhat, after which it roughly stayed the same level throughout the 1970s. It then sharply rose throughout the 1980s, leveled somewhat in the 1990s, and then slightly declined after 2000. The most significant movement here is the large rise in polarization throughout the 1980, and I will attempt to explain this rise in polarization in the next section.

Figure 2 – UK income polarization 1965 - 2005



LITERATURE

The causes from the literature are organized in several groups to provide some structure. As mentioned in the introduction, many of the theoretical mechanisms are from the polarization literature about the US and Canada, while others are from the income inequality literature. Some of the causes somewhat overlap, but I still discuss them separately. I will then present research that has been conducted in the United Kingdom that shows what the explanatory potential of the causes is for the UK. Some of the phenomena in the UK have been researched more than others, but it seems to me that explanations of the greatest importance have usually also received most attention, such as routine-biased technological change and education.

Demographic

Age structure population

Changes in the age structure of a population can affect the distribution of income of a population, because income rises with age and especially experience (Pressman, 2007). This follows from human capital theory. Young and inexperienced people tend to earn less and their income rises as they age (Mincer, 1974). This is why when the US middle class was perceived to decline in the 1980s, ‘optimist’

economists argued this was only a temporary phenomenon because it this was attributable to the entry of the baby boomer generation into the labour market. Young and inexperienced workers became a relatively large portion of household heads and these households headed by inexperienced workers did not make enough to reach a middle class standard of living (Ehrenreich, 1987). In short, the idea is that a larger share of young and inexperienced workers may lead to smaller middle class.

United Kingdom

The working age population in the UK increased somewhat throughout the 1980s, as the population aged 16 to 64 increased from 61% to 64% from 1974 to 1984 (Office for National Statistics, 2016). Gosling, Machin and Meghir (1996) compared medium wages of older workers and younger workers and found that the relative wage of older workers increased steadily from 1966 until the end of the 1980s, with a particular rapid increase from 1980 onwards. The median wage of 40 year olds was only 38% more than that of 23 year olds in 1966, while it was 65% more in 1992. This does suggest the inflowing younger workers in the 1980s started earning less, but it does not tell why. Pressman (2007) used shift-share analysis to compare the size of the middle class for the period 1980-2000 to find out if the change in this period would hypothetically have been different if the age distribution of households would have remained the at the 1980 level. He found the UK middle class to be unaffected by changes in the age structure of the population.

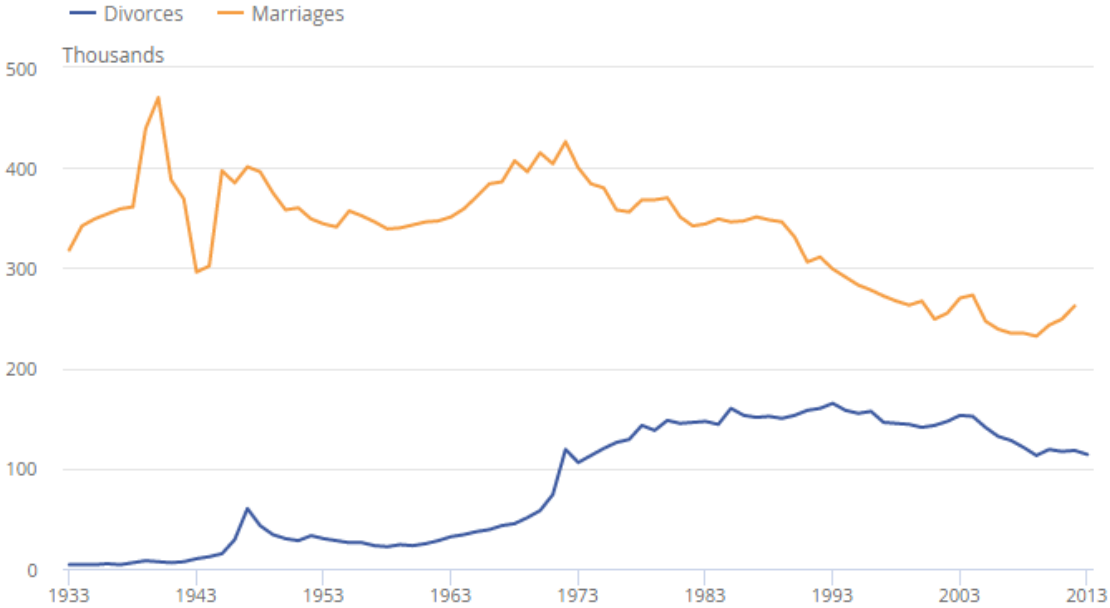
Single parent households

Single parent households are often low-income, so that more single-parent households can lead to a smaller middle class. The notion about the effect of divorce is that it frequently causes economic condition of divorced women to deteriorate, while the economic condition of the divorced men often remains the same. This is because women on average earn less than men do, and because women usually end up taking care of the children. Thus divorcing middle class families often split into a middle-class household headed by a man and a lower-class household headed by a woman (Ehrenreich, 1987; Pressman, 2007). Single parent households that are not a result of divorce mostly consist of single mothers, who often work low-wage jobs and are frequently located at the lower part of the income distribution (Esping-Andersen, 2007). Thus, we may expect that a higher amount of single-parent households, either as a result of divorce or not, will lead to a decrease in the relative amount of middle class households and to an increase in income polarization.

United Kingdom

Harkness, Machin & Waldfogel (1996) found that for the period 1979-81 until 1989-91 real income has fallen for single mothers with children. Lone mothers also participate in the labour market less. This might be because of government cuts in child care, more part-time labour possibilities or different benefit system incentives. They also found single mother families to have fallen in income during this period.

Figure 3 – divorce rates England and Wales, 1933 - 2013



Office for National Statistics, 2015

Figure 3 shows the divorce rates in England and Wales throughout the years. The biggest rise in divorces occurred before at the end of the 1970s, while it about leveled after 1975. This does not suggest the divorces were responsible for the rise in polarization in the 1980s, although combined with the findings of Harkness et al. it might mean that the growing number of single mother households that resulted from the higher divorce rate, that received lower incomes throughout the 1980s, might have contributed to income polarization somewhat. However, Pressman (2007) used shift-share analysis to compare the size of the middle class for the period 1980-2000 to find out if the change in this period would hypothetically have been different if the gender composition of households would have remained constant. He found no evidence of changing gender distribution of households on the size of the middle class of the UK.

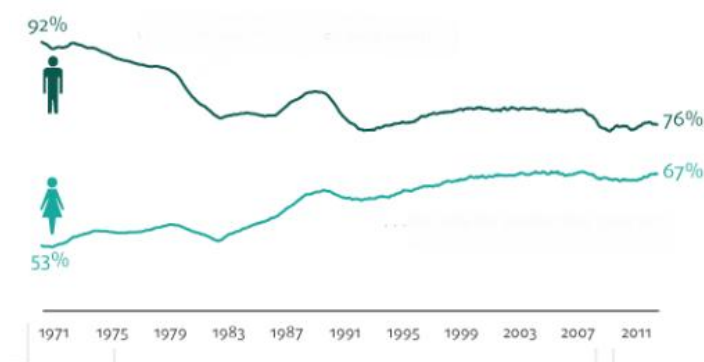
Female labour force participation

Another possible factor to affect the size of the middle class are developments in female labour force participation. This is for two reasons. (1) It is possible that an increase in the amount of women in the labour force, such as occurred during the last half of the 20th century, has a negative impact on overall wages. This is because it increases the supply of labour, so that competition for available jobs increases (Kuhn, 1995). This might be especially true for low-end of the distribution, since women more frequently work low-wage jobs, or at least used to (Thurow, 1987). Increased female labour participation may thus have led to wage polarization, but female labour force participation possibly also influences the income distribution of households in other ways. An example related to is that female labour force participation possibly provides more stability in case one of the parents loses their job. On the other hand, Warren and Warren Tyagi (2004) have argued for the US that dual earning middle class families with significant debt are more vulnerable to bankruptcy. This is because the parent that usually does not work can function as a safety net in case of calamities, while two

working parents provide less flexibility against financial blows. (2) Another way female labour participation can influence the size of the middle class is by moving dual-earning families into the upper class. Where previously a man who could provide a middle-class income for his family on his own, a man and a woman that both make a middle-class income can together reach an upper-class standard of living, so that upper class grows at the expense of the middle class (Pressman, 2007). Related to this is the idea of assortative mating of income, which entails that high-earning individuals often marry high-earning partners. This means that a growth of high-earning women, that also tend to marry high-earning men, can increase income polarization (Alderson & Nielsen, 2002). Furthermore, the extent to this kind of selection of partner occurs is not stable but varies (Pressman, 2007). So in short, the influx of women in the labour force may have increase wage polarization, at least initially, but influenced household polarization in other ways, while the growth of the relative amount of two-earner families with two high incomes may have increase polarization.

United Kingdom

Figure 4 –male and female labour force participation, 1971-2011



Office for National Statistics, 2013

Figure 4 shows an increase in female labour force participation starting from about 1983. This is continued until the end of the 1980s. This is more or less be in line with the polarization data. Goos & Manning (2007) conducted a counterfactual exercise for the period 1979-1999 and concluded that during this period the increase of female employment in low-wage jobs may have increased the amount of low-wage jobs. However, this does not take into account the educational upgrading of women that has occurred during this period so that this effect was most likely smaller than what was measured. Indeed, the ratio of female to male graduates increased from one in four in 1974-1976 to on in two in 1986-1988, and the rate for female to male workers without qualifications increased from 81 percent to 86 percent in this time. Harkness, Machin and Waldfogel (1996) have shown for the period of 1979-81 until 1989-91 that female shares of family income have grown for every income decile, but that it has grown most in the middle and lower deciles. This means the wives that entered the labour market throughout the 1980s were predominantly from the lower and middle part of the family income distribution. Harkness et al. also modeled the effect of wives' working on

family income inequality and found that inequality would always be higher if only husbands would work. Overall it does not seem that female labour force participation, either through labour market effects of assortative mating based on income was responsible for the rise in income polarization throughout the 1980s.

Institutional factors

The following paragraphs are about the possible influence of changes in labour market institutions in the UK on income polarization. Besides the direct influence of labour market institutions they may also influence how an economy responds to shocks, such as those caused by changes in technology or in international trade. Furthermore, the influence of labour markets is not certain: contrary to the expectation that strong labour market institutions will always protect the medium and lower incomes, they may also have a divergent effect. For example, a country with a centralized bargaining system and high minimum wages may price unskilled labourers out of the market, so that they may end up unemployed for long periods of time. Similarly, the existence of unions might protect the jobs and wages of current members at the expense of new jobs for “outsiders”, leading to higher unemployment and a growing labour market gap between older and younger workers (Kuhn, 1994). The difference in how the income distributions of the UK and the US have been influenced by technological changes as opposed to continental Europe, does seem to suggest that labour market institutions matter. Inequality (and most probably also income polarization) increased much more in the UK and the US in 1980-2007, where labour market institutions were much weaker than in the continental European countries (Piketty, 2013).

Unions

High unionization may lead to a reduction in wage differentials between blue- and white-collar workers (Alderson & Nielsen, 2002), therefore a larger part of the workforce that is organized in unions can lead to a decrease in income polarization. Moreover, adopting “standard” wage policies within firms, and “solidarity” wage policies across firms and industries is common practice for unions, which reduces wage differences between union members. A union-based explanation about changes in wage structures is in line with the fact that the only country with similar increases in equality as the US is the UK during the Thatcher years of decreasing union power. Furthermore, Freeman (1996) has argued that deunionization may also lead to lower wages for non-unionized jobs, since firms that do not have an unionized workforce no longer need to pay unionized-like wages in order to avoid unionization. However, it may be difficult to derive if declining unionization in a given country is an autonomous cause of increased labour market polarization, or whether changes in unionization and wage structure are caused by more fundamental economic forces, such as the tendency towards global factor price share equalization that is inherent in freer international trade. This can be applied to institutional explanations in general (Kuhn, 1994).

United Kingdom

Unionization in the UK declined from about 53% to 30% in the period of 1979-1998. This might partly be due to the employment acts of 1980 and 1982, because of which unions were liable for income lost by employers as a result of a dispute, making strike threats less credible (Gosling & Lemieux, 2004). In the years 1980-1990 the amount of unionized workplaces fell from 64 to 53%. (Goslin, Machin & Meghir, 1996). Gosling and Lemieux (2004) compared the difference in wage variance between 1983 and 1998 and concluded that overall male wage variance would have increased with

34% less in 1983-1998 if unionization would have remained at the 1998 level (male union density decreased by 25% in this period). Deunionization seemed to have little effect on variance in female wages, which might be because female unionization is concentrated in high-skill public sector jobs such as nursing and teaching. Schmitt (1996) plotted union density together with the 90-10 wage differential and found that they seem to be strongly inversely related. However, no causality could be established from this, but the visual connotation between the two developments does make this seem probable. Schmitt also estimated that the impact decline of union membership on wage differentials between 1978-80 and 1986-1988 using micro data. His results were that union membership losses accounted for 21 percent of the rise in the university/non-university educated differentials and 13 percent in the manual/nonmanual differential.

Corporatism/collective bargaining

Corporatism refers to institutional arrangements designed to achieve cooperation and consensus between labour, capital and the state in the setting of national economic and social policy. The strength of corporatist arrangements can influence the balance of power between employers and employees. Regarding wages, this can entail wage bargaining and the setting of wage guidelines at the national level (Alderson & Nielsen, 2002). Thus, the presence of strong corporatist institutions may lead to less income polarization.

United Kingdom

Employers, unions and the state in the United Kingdom have traditionally preferred voluntary over legislative regulation of relationship between workers and employers. Collective agreements are not legally binding or enforceable by law, so that involved parties are dependent on their own capability for sanctions to enforce them. Bargaining in the UK can take place on levels ranging from the establishment to the sector and became more decentralized throughout the latter half of the 20th century (Schabel, Zagelmeyer & Kohaut, 2006). During the 1980s however, it declined more dramatically. The then-ruling Conservative government was hostile to collective bargaining. Brown, Marginson and Walsh (2001) estimated that employees covered by collective bargaining declined from 80% in 1970, to 75% in 1980, to 70% in 1984 and to 54% in 1990. These numbers overstate collective bargaining because they relate to establishments with 25 or more employees, which are more likely to be covered by collective bargaining. Brown et al. (2001) reported that the decline was partly a result of both falling union membership. As far as I know, there has not been specific research on the influence of collective bargaining on the wage distribution in the UK. Brown et al. (2001) state that collective bargaining compresses the wage distribution both within and between firms, occupations and industries, similar to the effect of unions. Since collective bargaining in the UK is conducted by unions its effects may indeed be closely related to the decline of unionization, the relevance of which has been studied more in the UK, as is discussed in the previous 'unions' paragraph. On another note, the Wage Councils that set minimum wages for specific industries can also be seen as corporatist institutions. They equally consist of representatives of employers and employees, plus representatives of the state. The Wage Councils are discussed in the following paragraph that concerns minimum wages.

Minimum wages

Another possible factor that may influence polarization is the minimum wage. The existence of minimum wages can compress the bottom of the wage distribution (Kuhn, 1994). An argument against establishing a minimum wage is that it will increase unemployment by making companies pay wages above the market rate. If this would be the case the installment of a minimum wage would not necessarily have a compressing effect on the income distribution as the gains in wages would be compensated by higher unemployment. Expectations of the effect of a minimum wage on unemployment may be dependent on the theoretical model that are being used to describe the labour market. The standard competitive model predicts that minimum wages cause higher unemployment because minimum wages disturb market equilibria. On the other hand, authors that find little effect on employment explain this by describing the labour market as often being monopsonistic, so that employers have some leverage over workers and can get away with paying them wages below market rate (Dickens, Machin & Manning, 1999).

United Kingdom

The United Kingdom for the period 1965-2005 has known two types of minimum wage. For the period until 1993 there were Wage Councils, that could set specific minimum wages for a number of industries. After the abolishment of the Wage Councils by the Conservative government, a national minimum wage (NMW) was introduced in April 1999. This covered some 1,2 million workers. The evidence on the NMW seems to suggest no adverse effect on employment, with the exception of a small negative effect in the care home sector (Metcalf, 2004). The period of Wage Councils is more relevant for this paper, since these existed throughout the 1980s. Wage Councils covered around 2,5 million workers in 1990. The power of the Wage Councils declined throughout the 1980s due to the ruling Conservative government that was hostile to minimum wage laws (Machin & Manning, 1994). Dickens et al. (1999) showed that the mean minimum wage declined from a top of about 72,5% of the average wage in 1981 to about 65% in 1989. Since 1986 Wage Councils could only set a single minimum wage instead of the industry-specific one. The Councils also lost jurisdiction over workers under 21 (Machin & Manning, 1994). Dickens et al. (1999) used a regression model and found that the minimum wage significantly compressed the wage distribution during the period 1976-92. They found no evidence of negative effects on unemployment. Kaufman (1989), however, found negative effects on employment for women but not for men, but still negative employment effects overall. He also found that minimum wages significantly raised the average wage for women, but observed no significant effect for men. This difference might be due to not many men working jobs that pay below the minimum wage. According to Dickens et al. (1999) the differing results of their research and that of Kaufman may be a result of the sample period, the different industries that were focused upon and a difference in methodology. Kaufman mostly used data from manufacturing industries in the 1970s, and makes assumptions that fit the competitive rather than the monopsonistic model that Dickens et al. used. Furthermore, Gosling and Lemieux (2004) found that about half the variation between UK and the US in female wages for the period 1979-1998, in which US women comparatively fared better, could be explained by the lack of national minimum wage in the UK using ordinary least squares (OLS) regressions. However, their calculations are dependent on the assumption that a higher minimum wage would solely lift all the below-minimum rate wages up to the minimum wage without any spill-over effects, which is questionable.

Globalization

North-South trade

Another cause that can be linked to globalization is the increase in international trade and North-South trade in particular (Alderson & Nielsen, 2002; Messerlin, 1995). The Heckscher-Ohlin model of international trade predicts that freer trade with less-developed countries will lead to developed countries importing more goods that require a lot of unskilled labour to produce. This is because less developed countries have a larger supply of unskilled labour, resulting in lower labour costs. If unskilled labour-intensive goods can be produced cheaper in southern countries, unskilled labour demand in the North falls, leading to declining wages for unskilled workers in developed countries. Empirically, it can be assessed that current trade patterns between North and South trade are highly consistent with the predictions of the Heckscher-Ohlin model. Northern export to the South is intensive in the use of skilled labour, while exports from the South to the North are intensive in the use of unskilled labour (Kuhn, 1995). What is relevant for income polarization is that this may bring northern workers in direct competition with southern workers. It may also reduce the demand for northern low-skilled workers, so that the gap in pay between low and high-skill workers in these countries grows, or that low-skilled workers are more often unemployed when inequality is reduced through institutional means such as unionization and minimum wage laws (Alderson & Nielsen, 2002; Wood, 1994).

United Kingdom

Greenaway, Hine & Wright (1998) report that more than 2 million manufacturing jobs were lost in Britain in the period of 1979-1991 and that most jobs were lost in trades where competition with low-wage countries was most intense. This does suggest a role of increasing trade. Part of the loss in jobs was a result of growing output per person in the industries, which was necessary in order to remain competitive, but is also in line with the SBTC/RBTC hypotheses. Engelman (2013) found that increasing international trade as measured by lower prices for unskilled labour-intensive goods influenced the wage distribution in 11 manufacturing significantly for the period 1970-2005 with unskilled workers losing and skilled workers gaining in wage, although the effects strongly differed per sector.

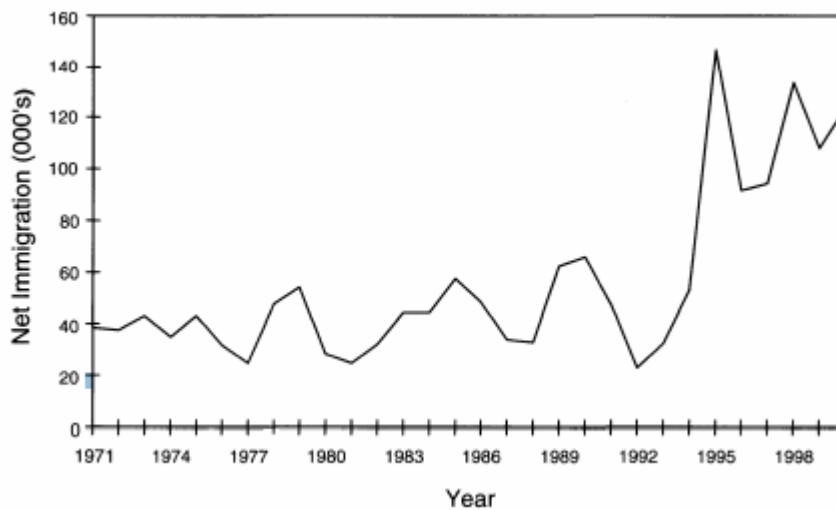
Immigration

Immigration can drive down wages by increasing the labour supply, so that it may contribute to a declining middle class. Similarities have been shown between the developments in immigration in recent decades and the international situation in 1870-1913, since both periods were characterized by expanding international trade, convergence between poor and rich nations, and large movements of immigration. In relatively rich countries that imported immigrants such as Argentina, Australia, Canada and the United States it immigration increased inequality, while in relatively poor people-countries such as those in Southern Europe and Scandinavia from which the immigrant came (Italy, Spain, Portugal, Norway, Sweden, Denmark) it decreased inequality (Hatton & Williamson, 1998). This makes sense when immigrants are poor and unskilled or required to work unskilled jobs because their credentials are not recognized (Kuhn, 1995). If immigrants are mostly unskilled, immigration leading to falling low-skill wages makes sense since immigration then leads to a relative growth in the low-skill labour supply, so that low-skill wages fall and polarization increases.

United Kingdom

Figure 5, a graph composed by Hatton and Tani represents net migration in the UK during 1971-2000. What is most obvious is that immigration sharply rises from 1992 onwards, and that it is relatively constant otherwise. When we compare this with the development of income polarization, this is the opposite of what would be expected if immigration had a large effect on income polarization. In this case, at the time migration rises to a much higher level (1992 onward), polarization levels.

Figure 5 – UK immigration 1971-2000



*Hatton &
Tani, 2005, p.
F434*

Furthermore, Dustmann, Fabbri, Preston and Wadsworth (2003) found no large discernible impact of immigration on wages or employment of existing workers in local labour markets in the UK during 1971-1990 using regression models. They did find small negative effects on employment, but were skeptical about this because for most groups in the population it was impossible to reject the absence of any effect with the data they used. Hattan and Tani (2005) stated that the impact of immigration on local labour markets is not discernible because the effect is mitigated by non-immigrants being “pushed” elsewhere by immigrants, causing the labour market impact to spread out across the country. On the other hand, Manacorda, Manning and Wadsworth (2006) argued that the lack of discernible impact of immigration on male wages in Britain from mid-1970s until mid-2000s is due to immigrants and natives being imperfect substitutes, so that more immigration reduces the wages for immigrants compared while the wages of natives do not alter significantly.

Other factors

Education

Shifts that occur in the educated portion of a population may alter the distribution of income. This is because it alters the relative supply of educated and uneducated labour, so that the wages of more- and less-educated labour change. Thus, a growing part of the population that is educated possibly lessens polarization because the relative supply of educated labour is increased, causing wages of

educated labour to decline while wages of uneducated labour risen (Kuhn, 1995).

United Kingdom

Until the middle of the 1980s, the UK was lagging behind in terms of education in comparison with other OECD countries. Governments since then have tried to improve educational standards. This was partly achieved by introducing the General Certificate of Secondary Education (GCSE) in 1988 (Montresor, 2015) and by abolishing the divide between polytechnic institutions and universities in 1992 so that the availability of university places greatly increased. These factors among others caused the participation rate of higher education to increase from 19,3% in 1990 to 33% in 2000 (Salvatori, 2015). Montresor (2015) also showed that the educated labour supply increased rapidly in the 1990s. This was particularly pronounced in areas that were relatively low in human capital before. Furthermore, concerning the 1990s Montresor found no impact of technology on the top of the income distribution, which he explained as being due to the outweighing of the supply of educated labour in comparison to the demand. The developments of income polarization with the educated labour supply may be explained as the growth of educated labour supply leading to a declining premium on education. This may have caused less difference between educated and educated workers, leading to less income polarization. Salvatori's (2015) research on job polarization in the United Kingdom for 1979-2012 suggests that job polarization during the entire period was almost entirely attributable to supply factors with changes in education being of particular importance. She concluded that the decline in middling occupations was due the decrease in the relative and absolute amount of non-graduates, who then shifted towards the bottom of the occupational distribution. Salvatori does suggest that technological factors may also have been of importance, for instance by increasing demand for educated workers. She concluded that job polarization from 1979 to 2012 was for the largest part a result of the rising share of the workforce that is educated and that the rise in amount of graduates can account for the growth at the top throughout the 1990s. However, since educated labour especially increased throughout the 1990s this line of thinking may not be suitable for explaining the increasing polarization in the 1980s.

Technological change

Two hypotheses that describe the labour market effects of technological change are the skill-biased technological change (SBTC) and the routine-biased technological change (RBTC) hypotheses. The two hypotheses both state that technology replaces some part of the workforce, but differ in what part is of the workforce is impacted. The skill-biased technological change hypothesis states that technological innovations tend to replace low-skill workers while the demand for high-skill workers, such as those who can manage the technology, increases (Goos, Manning & Salomons, 2014). This is contrary to the assembly-line technology of earlier decades that increased demand for low-skill workers (Kuhn, 1995). The routine-biased technological change thesis (originally formulated by Autor, Levy and Murnane in 2003; also known as the ALM hypothesis), states that technological change is biased in replacing routine jobs, which are often to some degree skilled and concentrated in the middle of the job distribution. Examples are bookkeeping and skilled manufacturing jobs. This causes the relative demand for non-routine tasks, which are more often either low- or high-paid, to increase. Examples of non-routine low-paid jobs are cleaning, personal care and transportation, and examples of non-routine high-paid jobs are managers and professionals (Goos, Manning & Salomons, 2014). Falling demand and wages for the middling occupation as a result of RBTC fits well with developments in the US during the 1990s (Autor & Dorn, 2013). Thus, the SBTC hypothesis predicts

that demand for skilled jobs is rising relative to unskilled jobs, leading to rising wages at the top and falling wages at the bottom. The RBTC predicts that relative demand for non-routine low-wage and high-wage jobs will rise, while medium paid routine jobs disappear (Goos & Manning, 2007).

United Kingdom

Goos and Manning (2007) looked into patterns of employment in the United Kingdom in the period of 1979-1999, taking median wages at the beginning of this period as indicator. They found that the relative amount of medium-paying jobs declined, while the relative amount of jobs in the bottom two and top two deciles increased. The increase in the top two deciles was much higher than the growth of the bottom deciles. The SBTC hypothesis predicts that the better a job pays, the more it would increase in relative frequency because it requires more skill. This is not what their findings suggest. Furthermore, a regression analysis suggested an U-shaped relationship between initial level of wages and employment growth. The results were mostly similar for men and women and when employment was measured in total hours, taking away the possible explanations that the occupation polarization was due to increased female employment in low-wage positions or a growth in part-time jobs. Goos and Manning also looked at the top ten fastest growing occupations between 1979 and 1999. Most of these were specialized high-paying jobs in finance and industries. But three were low-paying jobs, namely educational, hospital and care assistants, that are not highly skilled but are non-routine. This all supports the RBTC hypothesis rather than the SBTC hypothesis. The SBTC hypothesis can explain the increase in high-paid occupations, but not the increase in low-paid ones. Additionally, Goos and Manning have estimated for the period of 1976-1995 that job polarization can explain 33% of the increase in the 50/10 wage differential growth and 54% of the 90/50 wage differential growth. However, this does not tell what exactly caused the job polarization. Montresor (2015) focused on variation between local labour markets in the UK during 1993-2013 that resulted from their historical routine-based specialization to find the effect of technological exposure. Although this is not directly focused on the 1980s in which polarization sharply increased, his results also support the RBTC rather than the SBTC hypothesis. He found that technological change only replaced routine jobs and caused comparatively less-skilled middle workers to fall to lower-paid occupations. Montresor found no impact of technology at the top of the job distribution. A weakness of the RBTC explanation as noted by Salvatori (2015) is that developments in wage distribution and employment have differed greatly between countries, while technological change should more or less have been the same everywhere. This at least suggests that other factors than RBTC also played an important role.

CONCLUSION

With regards to timing and findings from previous research, the factors that seem most important for explaining the rise in income polarization in the 1980s are the weakening labour market institutions, routine-biased technological change and trade. It is possible that the weakening of labour market institutions may have allowed the effect of factors as technological change and trade to have a stronger impact. This is supported by the fact that several continental European countries did not experience such profound changes in their income distributions as the UK and also the US did, while developments technological and trade-related developments were similar (Piketty, 2013). The demographic factors may have contributed to the income polarization in the 1980s somewhat but do not seem to have been playing a crucial role.

A complexity is that many of the factors are to some degree interrelated, so that is difficult to make a clear analysis that can divide a number of important causes and how important they were in comparison. For instance, it is difficult to separate deunionization from the decline in collective bargaining since deunionization makes collective bargaining more difficult from the workers' perspective. Deunionization then again is related to technological change, because technological change reduced the demand for routine labour in the manufacturing sector, so that many workers switched to the service sector where unionization is lower. The growing output per worker through technological change can in turn be seen as a result of the need to remain competitive with low-wage countries from the global South.

Concerning public attention for income polarization, it is important to remember that movements in polarization are not isolated phenomena but occur simultaneously with wider trends. When polarization occurs at a time when the mean income rises and most people benefit in real terms, it is much more likely that it will generally be accepted. When polarization occurs around a stagnant mean, "the rich get richer and the poor get poorer; and an outcry is to be expected" (Brittan, 1993). This might be why income polarization, or a 'decline of the middle class' has not been a very prevalent issue in the UK while it to some degree was and still is in the United States. Although income has become more spread away from the median in the 1980s of the UK as showed by the polarization data of Brzezinski used in this paper, Cowell et al. (1996) show that for the UK in the 1980s almost every income group with the exception of the very poorest experienced growth in real income, even though the income distribution became more dispersed. As Piketty showed (2013), the income of the US working class on the other hand has been declining in real terms since the 1970s.

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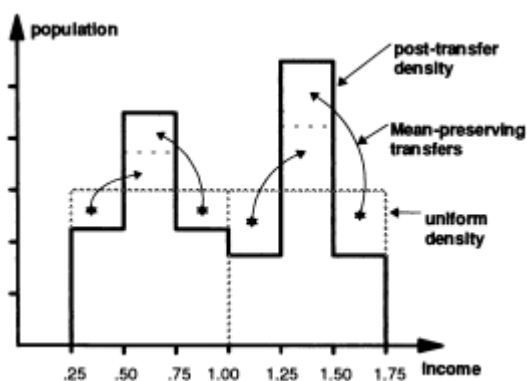
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APPENDIX A

Figure 6 – Mean-conserving transfers that together decrease inequality as measured by the Lorenz curve but increase polarization



Wolfson, 1994, p. 354

APPENDIX B

The WIID data is originally grouped in the form of income quantile shares, but Brzezinski ungrouped them using a 'ungrouping' algorithm made by Shorrocks & Wan (2009). Brzezinski computed the polarization measure for household disposable income, that was equivalised using the square-root scale and weighted with LIS household sample weights multiplied by the number of persons in the household. Also, negative incomes and incomes more than 50 times larger than the average income were excluded (Brzezinski, 2013). For the polarization data concerning the United Kingdom I have used, only the polarization index of 1965 has been produced this way.