

AN IN-DEPTH ASSESSMENT OF THE IMPACT OF THE RECESSION ON THE DISTRIBUTION OF PAY SETTLEMENTS AND EARNINGS

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SUMMARY

The aim of this project is to describe how the recession has affected the distribution of pay settlements and the distribution of earnings. The current recession is the first since the introduction of the National Minimum Wage so the Low Pay Commission (LPC) faces new problems determining the National Minimum Wage (NMW) when earnings and GDP growth in the economy are sluggish or negative. A guiding principle of the research was to investigate the course of earnings and wage settlements in previous recession periods in the recent past.

The first task of the project was to collect and collate all the relevant data relating to earnings and settlements, in the event as far back as 1975. Raw data on wage settlements was collected from the Confederation of British Industry (CBI), Incomes Data Services (IDS) and Industrial Relations Services (IRS, now XpertHR) and combined with data derived from the Labour Force Survey (LFS) and the Annual Survey of Hours and Earnings (Ashe) yielding data for the period 1975-2009. This data was then augmented with aggregate yearly data from the Office for National Statistics (ONS) on a number of economic variables which act as controls in our econometric modelling. We were finally able to analyse a consistent yearly data set by industry for the years 1977-2009 for 14 and 28 industrial groups based on the Standard Industrial Classification (SIC). This is the first time an aggregation of all the available data on wage settlements has ever been attempted and, not surprisingly, this time consuming exercise has absorbed most of the research effort associated with the project over the last 8 months.

The main econometric estimation provides a summary of the patterns of correlation in the key variables. The main estimation results from this project are:

- There is a countercyclical impact of economic growth and/or recessions on the level of wage settlements. That is – the lower is economic growth the higher are wage settlements (measured as percentage annual changes).
- There is a partial offsetting positive effect of one period lagged economic growth on wage settlements. The lower is growth in the previous time period then the lower are wage settlements. These two effects may be explained by the lagged nature of wage settlements which tend to be geared in time period t , on events in the economy in time period $t-1$.
- The years when the NMW has been in force have been characterised by slightly higher wage settlements.
- There is a clear negative effect of unemployment on wage settlements. This is consistent with the existence of the Phillips Curve. There is a clear positive effect of price inflation on wage settlements. This result is unsurprising given the importance of inflation in current and previous time periods in wage negotiations.

Our estimation has also been subject to extensive robustness checks to see if the results are sensitive to the method employed. Specifically we have:

- Estimated all our models using a variety of econometric methods – Ordinary Least Squares (OLS), Weighted OLS (by number of settlements and number of employees) and Fixed Effects with and without Year Fixed effects, and controlling separately for the fraction of workers in the industry grouping who are in the public sector, who are male, and who are full time workers.
- Estimated our models with 14 and 28 industry groups and this has not made any substantive difference to our conclusions.
- Explored the basic dynamic structure of our key regressors – specifically the rate of price inflation, the level of unemployment and the level of economic growth. We find that the model always generates significant effects with a one year lag but that the addition of a second year lag is never significant.
- Various explored different definitions of what constitutes a recession when measured either as a dummy variable or measured in terms of the level of real GDP growth. These changes have not made any substantive difference to our conclusions.
- Re-estimated our model using only the IDS data to explore the possibility that there is some non-comparability across the settlement data sources. This change did not make any substantive difference to our conclusions.
- Investigated the extent to which the results change when the number of settlements used in each year and industry (year*SIC) observation varies and this is reflected in the weights used in the data. This change did not make any substantive difference to our conclusions.
- Investigated the extent to which the results change when the number of employees used in each year and industry (year*SIC) observation varies and this is reflected in the weights used in the data. This change did make some difference to our conclusions – but at present we are unclear how to interpret these variations in our results.

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AN IN-DEPTH ASSESSMENT OF THE IMPACT OF THE RECESSION ON THE DISTRIBUTION OF PAY SETTLEMENTS AND EARNINGS

1. INTRODUCTION

The aim of this project is to describe how recessions have affected the distribution of pay settlements and the distribution of earnings. This is relevant to the LPC in the circumstances of the recent recession. The introduction of the NMW in 1999 was followed until 2008 by a period of sustained economic growth and steady economic expansion. In this context, it is unclear how a recession should affect the value of the NMW or its subsequent effects in the labour market. Previously the revision of the NMW was concerned with how much the NMW should rise given relatively buoyant labour market circumstances and an expanding economy. Since 2008 and through to the present time of writing (2010) the position has changed to determining the NMW when earnings and income growth in the economy are sluggish or negative.

This research investigates the course of earnings and wage settlements in previous recession periods by collating all available aggregate and micro level data on earnings settlements, earnings increases, and all the relevant information on the most important control variables. In addition we seek to measure an array of outcome variables over time that the LPC may be concerned with. Most specifically, we augment our settlement and earnings data with data on employment, unemployment, wage drift and inequality.

The first task of the project was to collect and collate all the relevant data relating to earnings and settlements as far back as possible. Raw data on wage settlements were collected from the CBI, IDS and IRS augmented with data derived from LFS giving data for the period 1975-2010. These data were then combined with aggregate yearly data from the ONS on the relevant economic aggregates which act as controls in our econometric modelling. These data give a yearly data set by industry over the years 1977-2009 for 14 industry sections and for 28 industries, disaggregating the manufacturing sector. This exercise took most of the research effort in the project over the last 8 months as it is the first time an aggregation of all the available data on wage settlements has ever been attempted.

The main econometric estimation task following this data creation provided a basic summary of the patterns of correlation in the key variables of interest. (The task of specifying a complete econometric model of wage settlement determination which takes full account of: potential endogenous regressors, the importance of lagged dependent variables, the correction of serial autocorrelation problems, the comprehensive testing of stationarity problems, the exploration of valid instrumental variables in a Arellano Bond model or a Hausman-Taylor model, the exploration of the possibilities of structural breaks in the data, the consideration of how estimation of panel data models could be extended for weighted data based on means of settlements from different size samples, and the exploitation of the potentially seemingly unrelated structure of the industry (SIC) composition effects, are all beyond the scope of the present enquiry. All these issues merit detailed investigation but this research requires extensive estimation and modelling efforts and must be the subject of a separate research project.)

This project assesses the impact of the recession on the distribution of earnings and settlements¹ paying special attention to the low paying sectors. The project also describes how the recession has affected the distribution of pay settlements and how this is affected by the distribution of earnings.

Clearly the setting of the National Minimum Wage (NMW) must relate, in a consistent way, to how earnings and pay settlements are changing over time. Following the introduction of the NMW in 1999 the economy was never in recession until the present recession which began in 2008. A recession brings declining earnings in certain sectors and pay settlements may be very low, zero or even negative. The challenge facing the LPC is to steer a reasonable course when adjusting the NMW having full regard to the current recessionary circumstances. This project presents evidence which will be integral to understanding how the recession could affect the NMW.

2. ECONOMIC BACKGROUND

There has been a long tradition of modelling pay settlements and earnings and indeed the difference in these two. The difference in average earnings rises and pay settlements is called 'wage drift' or 'pay drift' and modelling the determinants of pay settlements and earnings rises must be heavily influenced by the analysis of pay drift. The analysis of pay drift must be of central concern if one is to explain the process by which earnings change.

Of necessity, the forces which condition pay drift must also condition pay settlements. Phelps Brown (1962) categorises these forces as:

- i) Rising hourly earnings of pieceworkers in the course of the general improvement of organisation and methods.
- ii) Action initiated by employers to attract and retain scarce labour.
- iii) The pressing of claims by particular workers or groups at points where management is likely to prefer a limited rise in labour costs to a loss of output.

Hence the forces which drive pay settlements are: productivity changes, the state of the labour market, the extent and effectiveness of trade union activity, and bargaining with management. As far as possible these forces will be examined. Various papers (Ordine 1996) have modelled these factors by using data which capture these processes. Following this literature, the measurement of these determinants will require data on, respectively: productivity, unemployment, trade union

¹ For the purposes of this report we will define; 'Settlements' as the periodic, usually annual, adjustments to basic pay rates and/or structures. Settlement data do not (routinely) include adjustments to additional sources of pay e.g. overtime and shift-work premia, non-consolidated performance awards, or location and other compensatory payments. We define 'Earnings' as referring to remuneration which include adjustments to base rates and all other increases in cash pay resulting from other sources, whether consolidated or not. Earnings data (to some degree) also reflect changes in the characteristics of the labour force.

density and working days lost. These are all available for the UK on either a yearly, quarterly or monthly basis.

3. DEFINING A RECESSION

Since the theme of this report is the study of settlements and earnings growth in the context of an economic recession, we need to define exactly what we mean by a recession. The formal accepted definition of a recession is 2 quarters of consecutive negative GDP growth. This definition is clear and unambiguous in the context of quarterly data but leaves us with a difficulty when we work with yearly data. We therefore explored three possible definitions of a recession for yearly data:

- i) The year contains at least 2 consecutive quarters of negative GDP growth.
- ii) The year contains any 2 two quarters (not necessarily consecutive) of negative growth.
- iii) The year has negative growth on average over all 4 quarters.

We explored the use of GDP growth directly, both instead of the recessionary indicators defined above and in conjunction with them. Finally we explored the possibility that characterising a recession by any of the methods above was unnecessary in the sense that it was easier to simply define a 'year' effect for each year that was categorised as a recession. This involved just including a separate dummy variable for the years 1980, 1981, 1991, 2008 and 2009.

We found that the different possible definitions of a 'recession' as a discrete variable were unimportant and did not change the nature of our conclusions – hence the results we report in Tables X- XI look only at the effect of a recession defined as per the second definition above. We choose to focus on these results since they are slightly more consistent across estimated equations and this reflects the fact that any year is at least partially like a recession if in any quarter there is negative growth. However, we did estimate separate models for each outcome using this recessionary variable alone, GDP growth alone and a specification including both variables.

4. DATA COLLECTION AND DERIVATION

Data Sources

The main task of the project was to collect and collate all the relevant data relating to earnings and settlements as far back as possible. Data on earnings is abundant. Data on pay settlements is more difficult to obtain but we discuss the sources below. Our goal was to produce the largest data on settlements by pooling data from different sources and then to provide the first systematic description of these data. Our analysis focuses on describing the underlying pattern of pay settlements and earnings during the recession and analysing how they both change in times of recession and as a result of the changing level of the NMW. Since there have not been many recessions over the last 20-40 years the formal identification of these effects will require careful time series and panel data analysis.

The data sources used in this project were:

Unemployment, GDP Growth and the RPI

These data were collected from ONS national sources.

Earnings:

Labour Force Survey (LFS) and Annual Survey of Hours and Earnings (ASHE).²

Settlements:

Aggregated settlement data was collected and collated from IRS and IDS and the Confederation of British Industry (CBI). Raw settlement data was available from IDS and IRS.

Using the data from IDS, the CBI and IRS it was possible to develop a series on pay settlements from 1977 to 2010 for 14 and 28 sectors³ on a yearly and a quarterly basis.

² The data are collated separately for each industry (SIC) group but future work might investigate whether alternative indices such as the average earnings index could be used.

³ We can identify 2 more SIC groups (for households as employers and extra-territorial organisations) but the sample sizes are extremely small and we omit them from our analysis.

Research methods and sampling

Methodology

We seek to describe:

- a) The evolution of pay settlements and earnings series over the period 1977-2010, which covers recessions in the early eighties and nineties. LPC (2006) cited evidence suggests that the low paid are less affected than the rest of the economy in times of recession. This is examined and quantified.
- b) The distribution of earnings and pay settlements since the introduction of the NMW. LPC (2009)⁴ suggests that the impact of the recession up to that point on these distributions has been limited. This is fully examined.
- c) The determination of pay settlements and earnings and their distribution by sector over time. We were able to calculate sector/occupational pay settlement and earnings data for 28 sectors over the period from 1977-2009 using the IDS, CBI and IRS exclusively.

This analysis controls for the fraction of workers by industry and year who are male and who work in the public sector.

⁴ It should be noted that this report only included data up to 2009 – hence it is only preliminary evidence on the recession and much remains to be done to work out the effect of the whole recessionary period 2008-2010 on the NMW.

5. SUMMARIZING AND CHARTING THE DATA

The data set which has been collected on wage settlements is large and complex. As an initial guide to its characteristics, we provide a series of plots in Figures 1-8 that illustrate its variability at any given point in time and its trend over time.

Figure 1 shows the timing of the recessions as measured by the rate of GDP growth, which clearly turns negative in 1979-1981, 1991 and 2008-2009. Exactly when the recession started in terms of which month or quarter is a moot point. We discussed this in the previous section and note here that the exact definition of which year the UK is in recession does not make any material difference to our econometric results.

Figure 1 compares the average rate of settlements over time and compares it to the ASHE data on the rate of increase in hourly earnings (excluding overtime), the inflation rate and the level of GDP growth. The main pattern in the time series is that the high rates of inflation, earnings and settlements in the late 1970s and early 1980s compared to the period after 1991.

Two immediate patterns are discernable from this data. Firstly, in the recessions of 1980/81 and 1991 when GDP growth was clearly negative we see a clear upward spike in the level of inflation – reaching 18% in 1980 and 10% in 1991. This is then followed, not surprisingly by a spike in the level of earnings growth a year later. The second pattern is a little more subtle, namely that the level of pay settlements seems to reach a peak or spike a year before the level of inflation spikes. A possible driving force behind the change in the inflation rate is labour costs with a lag and if earnings settlements are high in year t , then this will translate into higher labour costs in the subsequent year.

Unsurprisingly, the same patterns are observed in Figure 2 when the earnings inflation index used relates to gross weekly pay rather than hourly pay.

Figures 3 and 4 plot exactly the same trends as Figure 1 and Figure 2 except that now the series is plotted quarterly rather than annually. Naturally all the same patterns are found in the data as were described for Figure 1 but now the exact timing of a recession is clearer. More precisely the periods of negative growth were 1980q2 to 1991q4, 1991q1 to 1992q3 and 2008q1 to 2010q1. Not surprisingly the quarterly series is slightly more volatile than the yearly series which has been averaged or smoothed out.

Figures 5 and 6 plot the levels of pay settlements of 14 SIC industry sections on a yearly basis and superimpose the underlying trend settlements (in red) and, respectively, in Gross Weekly Pay and Hourly Earnings (in blue). Here we see that there is some real sampling variation in the levels of settlements across industries, Figures 7 and 8 do the same as Figures 5 and 6 but for quarterly data. Again the corresponding sampling variation is more pronounced.

The final set of four figures, namely Figures 9, 10, 11 and 12 do the same as, respectively Figures 5, 6, 7 and 8 only for 28 SIC groupings rather than the 14 SIC Sections. Here again, as one would expect we see more sampling variation relating to the level of settlements over a wider range of SIC categories.

Stated simply our goal is to explain the pattern of earnings settlements variation over this time period to establish the basic patterns of correlation between earnings, settlements, inflation, unemployment and growth in and out of recessionary periods.

Casual inspection of the data suggests the likelihood that these data series are integrated of order 1 with possible structural breaks at the recessionary time periods. The underlying patterns of these series suggest that the level of settlements could be negatively correlated with GDP growth and positively related to contemporaneous price inflation. We will seek to establish these basic patterns in the data in the next section and provide a limited examination of the basic dynamics of these series.

6. SIMPLE MODELLING RESULTS

This section describes the simple regression results derived from using the data described in sections 4 and 5. We are explicitly interested in explaining the variation in settlements, earnings growth, wage drift and the level of inequality.

Since a topic of major substantive interest in this project is the extent of a relationship between these outcome variables and whether a recession is important we must examine various definitions of a recession in different specifications. We examine the sensitivity of our estimations to the use of the following measures of a recession:

- a single dummy for a recessionary year
- a single dummy for a recessionary year with additional dummies for individual recessionary years.
- a single dummy for a recessionary year in addition to a regressor measuring the actual level of GDP growth.
- a single dummy for a recessionary year in addition to a regressor measuring the actual level of GDP growth and with additional dummies for individual recessionary years.

We also explore the sensitivity of the results to the method used to construct the dependent variable. The settlements variable itself is a mean calculated over all settlements in a given SIC grouping in a given year or quarter and may not reflect the importance of different components of the sample. We consider the possible effects of weighting the different components in two ways. Firstly we weight by the number of settlements involved in the average calculation. We then also weight by the number of employees covered by a settlement.

Since most of the results we have to discuss are very similar we will focus on a limited subset of these tables to illustrate the main arguments. Since our results do not change as a result of these different robustness checks we can be reasonably confident that the regression models describe the underlying pattern in the data.

6.1. Panel Data Analysis of Settlements Data

The main results on the analysis of wage settlements are in Tables 1-6 for 14 SIC Sections and Tables 23-28 for the 28 SIC groupings, for the various specifications of the recession as described above. It is clear from these tables that there are consistent results across the different Tables. Hence these results are largely invariant to how we define the nature of a recession in our regression.

We find:

- There is a positive effect of one period lagged economic growth on wage settlements. The lower is growth in the previous time period then the lower are wage settlements. This effect may be rationalised by the lagged nature of wage settlements which tend to be made in time period t , and based on events (like the level of inflation and productivity etc) in the economy in time period $t-1$. In turn, the effects of a pay settlement (in annual data specifically) are most likely to be felt in earnings in time period $t+1$.
- There is a countercyclical relationship of economic growth and/or recessions and the level of wage settlements. That is – the lower is economic growth the higher are wage settlements. Simply interpreted this counter-intuitive observation would suggest that employers give higher than expected awards in the hardest times. It implies some real wage rigidity over the business cycle but a full explanation of the result would also need to take into account the lagged responses described in the previous bullet point.
- The years since 1999 when the NMW was introduced have been characterised by slightly higher wage settlements. It is not clear why this should be the case but it is possible that settlement levels since that date have been affected by higher than average awards in low-paying sectors resulting from NMW adjustments.⁵
- That there is a clear negative effect of unemployment on wage settlements (measured here as a percentage growth). This is consistent with the literature on the Phillips Curve.
- That there is a clear positive effect of price inflation on wage settlements. This result is unsurprising given the importance of inflation in current and previous time periods in wage negotiations.

⁵ Future work will investigate whether it is possible to incorporate controls for the period when the wage councils were in existence.

6.2. Panel Data Analysis of Growth in Earnings

The analysis of the growth of earnings is contained in Tables 7-9 for 14 SIC Sections and Tables 29-31 for the 28 SIC groupings analysis.

- We find that earnings growth is lower in times of higher GDP growth and higher in times of a recession. Clearly this is partly due to the effect of lagged responses discussed above.
- That earnings growth is higher when inflation (RPI) is higher.

These results are again largely invariant to how we specify the equation.

6.3 Panel Data Analysis of Wage Drift.

The analysis of the wage drift is contained in Tables 10-12 for 14 SICs and Tables 32-34 for the 28 SICs analysis. These results are perhaps the hardest to summarize. Remember that here the dependent variable is a difference in the rate of earnings growth minus the rate of growth of the pay settlement. This is a key variable of interest as it reflects a possible measure of the extent to which actual pay rises are exceeded by real earnings growth. This may then in turn reflect the pattern of productivity.

Wage drift seems to be:

- Higher in times of recession – particularly in the 1980/81 recession.
- Higher when inflation is higher but lower when the previous period's inflation is higher.
- Lower for industries with a higher fraction of male workers.
- Lower for industries with a higher fraction of public sector workers.⁶
- Higher in times of higher unemployment and lower in the previous period's unemployment.

⁶ These comments summarise the effects of different variables holding everything else fixed. A SIC code dominated by the public sector will tend to have a low fraction of males and a high fraction of public workers. In a practical sense we cannot increase the public sector fraction without decreasing the male fraction and this must be borne in mind when assessing the *ceteris paribus* effects presented in the tables of results.

6.4. Panel Data Analysis of Inequality

The analysis of the inequality is contained in Tables 13-22 for 14 SIC Sections and Tables 35-45 for the 28 SIC groupings analysis. These results show that:

- Earnings inequality across industries is higher the larger is the fraction of women who work in the industry.
- Earnings inequality across industries is higher the larger is the fraction of workers who work part time in the industry.
- Earnings inequality across industries is lower the larger is the fraction of workers who work in the public sector in the industry.
- There is relatively little effect on earnings inequality which is determined by macro-economic circumstances – specifically there are relatively few effects of unemployment, GDP growth or inflation on inequality. Largely these influences, which relate to external macro-economic conditions, are neutral in terms of inequality.

In conclusion the main substantive estimation results from these regressions are:

- There is a countercyclical relationship of economic growth and/or recessions on the level of wage settlements. That is – the lower is economic growth the higher are wage settlements. There is a partial offsetting positive effect of one period lagged economic growth on wage settlements. The lower is growth in the previous time period then the lower are wage settlements. These two effects may be explained by the lagged nature of wage settlements which tend to be geared in time period t , on events in the economy in time period $t-1$. In addition recessionary periods are usually preceded by particularly sharp rises in economic growth.
- The years when the NMW has been in force have been characterised by slightly higher wage settlements.
- That there is a clear negative effect of unemployment on wage settlements. This is consistent with the vast literature on the Phillips Curve and the Wage Curve.
- That there is a clear positive effect of price inflation on wage settlements. This result is unsurprising given the importance of inflation in current and previous time periods in wage negotiations.

In the next section we explain the robustness checks we carried out on these regressions. What should be remembered in all of these simple regression results is that we have not undertaken a thorough investigation of the standard econometric problems which affect panel data of this complexity. Hence we regard the tables of regression results we present as descriptive statistics which provide only a preliminary analysis of the data. We categorise all the relevant econometric problems which may affect our results in section 8.

7. ROBUSTNESS CHECKS

Our estimation so far has also been subject to extensive robustness checks. Specifically we have:

- Estimated all our models with OLS, Weighted OLS (by number of settlements and number of employees) and Fixed Effects with and without Year Fixed effects, and controlling for the fraction of workers in the SIC grouping who are in the public sector, who are male, and who are part time workers.
- Estimated our models at both the 14 and 28 SIC industrial levels and this has not made any substantive difference to our conclusions.
- Explored the basic dynamic structure of our key regressors – specifically the rate of price inflation, the level of unemployment and the level of economic growth. We find that the model always generates significant effects with a one year lag but that the addition of a second year lag is never significant.
- Variously explored different definitions of what constitutes a recession when measured either as a dummy variable or the level of real GDP growth. These changes have not made any substantive difference to our conclusions.
- Re-estimated our model using only data from the IDS to explore the possibility that there is some non-comparability across the settlement data sources. This change did not make any substantive difference to our conclusions.
- Investigated the extent to which the results change when the number of settlements used in each year*SIC observation varies and this is reflected in the weights used in the data. This change did not make any substantive difference to our conclusions.
- Investigated the extent to which the results change when the number of employees used in each year*SIC observation varies and this is reflected in the weights used in the data. This change did make some difference to our conclusions – but at present we are unclear how to interpret these variations in our results. These results are presented in Tables A1-A5 and should be treated with particular caution as they relate to really quite a different sample than the rest of our results. Specifically these results could be weighted by a very low number of employees or hundreds of thousands in the case of a widespread settlement.

8. ECONOMETRIC CHALLENGES.

As observed by simply plotting the data in Figures 1 to 12 the basic data under investigation are not stationary and may contain clear structural breaks – particularly at the key points of interest – namely the recession years. Due to time constraints we have only estimated the yearly models with the 14 and 28 SICs we have not yet estimated any models using the quarterly data. There is clear potential to investigate these problems with the quarterly data as then one is dealing with 132 time series observations for each variable.

The estimation following this data creation provides a basic summary of the patterns of correlation in the key variables of interest. Further modelling would consider a number of econometric issues such as:

- the importance of lagged dependent variables,
- potential endogenous regressors
- the correction of serial autocorrelation problems,
- the comprehensive testing of stationarity problems,
- the exploration of valid instrumental variables in a Arellano Bond model or a Hausman-Taylor model,
- the exploration of the possibilities of structural breaks in the data,
- the consideration of how estimation of panel data models could be extended for weighted data based on means of settlements from different size samples
- and the exploitation of the potentially Seemingly Unrelated structure of the SIC composition effects are all beyond the scope of the present enquiry.

These issues merit detailed investigation but this would require extensive estimation and modelling which will be the subject of a future research.

9. IMPLICATIONS FOR THE NATIONAL MINIMUM WAGE.

Summarising the regression results with specific reference to the NMW suggests – controlling for other macroeconomic variations – that the NMW has:

- a positively significant effect on the level of pay settlements.
- no effect on the annual growth in earnings.
- no significant effect on wage drift.
- no discernable effect on the level of inequality (of earnings measured within industry) as measured by the interquartile ratio, or the growth of the interdecile ratio.

It should be remembered that these regression results represent simple statistical associations between contemporaneous variables. Although in various specifications we have included one period yearly lags we have not fully studied the possibility of more complex dynamic inter-relationships. For example, the effect of the National Minimum Wage on settlements is not significant for some specifications of the recessionary periods nor have we examined the time series properties of the models in detail. Further the dummy variable merely measures the difference between the pre and post 1999 periods after controlling for the other variables in the model and might, for example, capture differences in economic policies of governments before and after this point in time.

Notwithstanding this caveat it is still puzzling why the NMW might affect pay settlements but not affect growth in earnings. In addition if both these effects operate we might expect the NMW to have an effect on wage drift although we have not explored the statistical implications of the definition of wage drift as the difference between two time series with possibly different properties. Perhaps, if there has been an effect on settlements but not on earnings, employers must have been using other pressures to hold down pay growth. Alternatively it is quite possible that annual data are simply too crude to reveal the true patterns in the data particularly when comparing ex ante settlements and ex post earnings data. Further research – which is outside the remit of the present report – is required to solve these issues.

These results seem similar for the 14 SICs and the 28SICs data and when we use weighting or fixed effects estimation. Taken at face value, for the most part, these results are logical and consistent in the sense that one would expect the NMW to exert some upward pressure on the level of pay settlements. It is surprising that the NMW has no effect on earnings growth or the level of wage drift.

At first sight it is perhaps more surprising that there is no effect of the NMW on inequality as measured here. This result is in sharp contrast to those found using LFS and ASHE which focus on the micro level individual data and use geographical variation to identify the trends (see Dolton et al (2010)). It is potentially possible to explain this by remembering that the unit of observation here is the SIC Section or grouping at each point in time. Hence we are observing average inequality at

the level of the SIC Section or grouping and trying explain its variation across industries over time. This is not the same as explaining individual person level inequality over time. The latter will clearly be affected by the NMW as those individuals with lower earnings than the NMW will, by law, have them uprated. Whereas the dispersion in the rate of growth of earnings at the industry level is unlikely to be affected by the NMW as the pay rise will apply across the board to all workers in the industry. In short, one can understand why the NMW affects the level of settlements across industries but not the dispersion of the level of these earnings.

In conclusion the LPC can be cautiously optimistic that the NMW has had relatively little effect of a negative kind on industry level earnings, settlements, wage drift or (within industry wage) inequality.

10. CONCLUSIONS

The main estimation results from this project are:

- There is a countercyclical relationship between economic growth and/or recessions on the level of wage settlements. That is – the lower is economic growth the higher are wage settlements.
- There is a partial offsetting positive effect of one period lagged economic growth on wage settlements. The lower is growth in the previous time period then the lower are wage settlements. These two effects may be explained by the lagged nature of wage settlements which tend to be geared in time period t , on events in the economy in time period $t-1$.
- The years when the NMW has been in force have been characterised by slightly higher wage settlements.
- That there is a clear negative relationship between the unemployment rate and pay settlements. This is consistent with the literature on the Phillips Curve.
- That there is a clear positive effect of price inflation on wage settlements. This result is unsurprising given the importance of inflation in current and previous time periods in wage negotiations.

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Table 1 Settlements - The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		0.905**		0.902**
		(0.43)		(0.43)
Recession lag		-0.481		-0.487
		(0.49)		(0.50)
GDP growth	-0.621***	-0.542***	-0.629***	-0.551***
	(0.07)	(0.10)	(0.07)	(0.10)
GDP growth lag	0.374***	0.233**	0.374***	0.233**
	(0.08)	(0.12)	(0.08)	(0.12)
RPI	0.266***	0.240***	0.268***	0.242***
	(0.04)	(0.04)	(0.04)	(0.04)
RPI lag	-0.344***	-0.320***	-0.348***	-0.324***
	(0.04)	(0.04)	(0.04)	(0.04)
Unemp. (au %)	-0.437***	-0.605***	-0.439***	-0.608***
	(0.14)	(0.16)	(0.14)	(0.16)
Unemp. lag	0.159	0.328*	0.173	0.342*
	(0.16)	(0.18)	(0.16)	(0.18)
Nat. Min. Wage	0.997**	1.133**	1.068**	1.205***
	(0.42)	(0.45)	(0.43)	(0.45)
1999 Dummy	0.848	0.955	0.890	0.997*
	(0.57)	(0.60)	(0.57)	(0.60)
Male	0.989	0.973	-0.140	-0.183
	(0.72)	(0.72)	(2.69)	(2.69)
Public	-0.218	-0.216	-0.720	-0.682
	(0.23)	(0.23)	(0.63)	(0.63)
Full-time	-1.019	-0.986	-1.086	-0.753
	(1.09)	(1.09)	(3.57)	(3.57)
Constant	16.479***	16.833***	17.477***	17.575***
	(0.96)	(1.02)	(2.89)	(2.91)
R-squared	0.809	0.811	0.808	0.809
N	452	452	452	452

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 2 Settlements - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	0.905**		0.804**	
	(0.43)		(0.37)	
Recession lag	-0.481		-0.168	
	(0.49)		(0.43)	
1980 Dummy		4.912***		4.494***
		(0.67)		(0.63)
1981 Dummy		0.338		0.548
		(0.59)		(0.56)
1991 Dummy		1.054*		1.074**
		(0.60)		(0.50)
2008 Dummy		0.747		0.159
		(0.52)		(0.46)
2009 Dummy		2.932***		2.250**
		(1.05)		(0.89)
GDP growth	-0.542***	-0.136	-0.445***	-0.201*
	(0.10)	(0.13)	(0.09)	(0.11)
GDP growth lag	0.233**	0.129	0.199**	0.107
	(0.12)	(0.08)	(0.10)	(0.07)
RPI	0.240***	0.285***	0.299***	0.335***
	(0.04)	(0.06)	(0.03)	(0.05)
RPI lag	-0.320***	-0.358***	-0.363***	-0.395***
	(0.04)	(0.05)	(0.03)	(0.05)
Unemp. (au %)	-0.605***	-0.423**	-0.456***	-0.397***
	(0.16)	(0.17)	(0.14)	(0.15)
Unemp. lag	0.328*	0.100	0.362**	0.286*
	(0.18)	(0.18)	(0.16)	(0.16)
Nat. Min. Wage	1.133**	0.666	1.160***	1.009***
	(0.45)	(0.44)	(0.37)	(0.36)
1999 Dummy	0.955	0.520	1.115**	0.960**
	(0.60)	(0.55)	(0.48)	(0.44)
Male	0.973	0.836	0.230	0.118
	(0.72)	(0.68)	(0.71)	(0.67)
Public	-0.216	-0.210	-0.098	-0.090
	(0.23)	(0.22)	(0.21)	(0.20)
Full-time	-0.986	-0.725	-0.628	-0.408
	(1.09)	(1.03)	(1.09)	(1.03)
Constant	16.833***	15.218***	12.896***	11.815***
	(1.02)	(1.02)	(0.95)	(0.93)
R-squared	0.811	0.831	0.807	0.826
N	452	452	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 3 Settlements - year fixed effects (not shown), 14 SICs,

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.122 (0.56)	-0.745* (0.43)	-1.987 (1.36)	-0.102 (0.55)
Recession lag	-0.768 (0.55)	-1.074*** (0.41)	0.360 (2.52)	-0.713 (0.55)
GDP growth	-0.430*** (0.10)	-0.503*** (0.07)	-1.096** (0.43)	-0.425*** (0.10)
GDP growth lag	0.022 (0.12)	-0.016 (0.09)	0.481 (0.36)	0.030 (0.12)
RPI	0.109*** (0.04)	0.132*** (0.03)	0.462*** (0.15)	0.108*** (0.04)
RPI lag	-0.191*** (0.04)	-0.212*** (0.03)	-0.556*** (0.16)	-0.190*** (0.04)
Unemp. (au %)	-0.590*** (0.20)	-0.571*** (0.17)	-0.628 (1.32)	-0.591*** (0.20)
Unemp. lag	0.039 (0.21)	0.048 (0.18)	-0.418 (0.93)	0.047 (0.21)
Nat. Min. Wage	0.867* (0.49)	1.090*** (0.36)	0.024 (6.04)	0.964** (0.49)
Male	0.791 (0.54)	0.244 (0.45)	0.804 (0.55)	-1.258 (2.02)
Public	-0.221 (0.17)	-0.144 (0.13)	-0.217 (0.17)	-0.633 (0.47)
Full-time	-0.876 (0.82)	-0.597 (0.69)	-0.892 (0.83)	1.901 (2.72)
R-squared	0.894	0.923	0.891	0.896
N	452	441	452	452

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 4 Settlements - The effect of recession using a dummy variable, IDS data only, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		0.193		0.181
		(0.44)		(0.44)
Recession lag		-0.795		-0.795
		(0.51)		(0.51)
GDP growth	-0.629***	-0.672***	-0.632***	-0.677***
	(0.07)	(0.10)	(0.07)	(0.10)
GDP growth lag	0.363***	0.211*	0.363***	0.211*
	(0.08)	(0.12)	(0.08)	(0.12)
RPI	0.302***	0.286***	0.303***	0.288***
	(0.04)	(0.04)	(0.04)	(0.04)
RPI lag	-0.374***	-0.360***	-0.377***	-0.363***
	(0.04)	(0.04)	(0.04)	(0.04)
Unemp. (au %)	-0.352**	-0.486***	-0.352**	-0.484***
	(0.15)	(0.17)	(0.15)	(0.17)
Unemp. lag	0.052	0.214	0.059	0.220
	(0.16)	(0.19)	(0.16)	(0.19)
Nat. Min. Wage	0.652	0.895**	0.690	0.928**
	(0.43)	(0.45)	(0.43)	(0.46)
1999 Dummy	0.706	0.969	0.739	1.000*
	(0.57)	(0.60)	(0.57)	(0.60)
Male	0.362	0.385	-0.756	-0.550
	(0.74)	(0.74)	(2.77)	(2.77)
Public	-0.508**	-0.504**	-0.632	-0.636
	(0.23)	(0.23)	(0.64)	(0.64)
Full-time	0.384	0.359	-0.779	-0.978
	(1.11)	(1.11)	(3.69)	(3.69)
Constant	15.426***	16.004***	17.167***	17.788***
	(0.97)	(1.03)	(2.96)	(3.00)
R-squared	0.802	0.802	0.798	0.798
N	441	441	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 5 Settlements - Effect of multiple recession dummies and weighting by number of settlements, IDS data only, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	0.193		0.510	
	(0.44)		(0.36)	
Recession lag	-0.795		-0.547	
	(0.51)		(0.42)	
1980 Dummy		4.645***		4.730***
		(0.67)		(0.61)
1981 Dummy		-0.490		-0.126
		(0.60)		(0.54)
1991 Dummy		0.061		1.025**
		(0.61)		(0.48)
2008 Dummy		0.185		-0.104
		(0.52)		(0.44)
2009 Dummy		1.592		1.312
		(1.05)		(0.86)
GDP growth	-0.672***	-0.264**	-0.523***	-0.286***
	(0.10)	(0.13)	(0.09)	(0.10)
GDP growth lag	0.211*	0.144*	0.159	0.091
	(0.12)	(0.08)	(0.10)	(0.07)
RPI	0.286***	0.297***	0.338***	0.349***
	(0.04)	(0.06)	(0.03)	(0.04)
RPI lag	-0.360***	-0.363***	-0.397***	-0.404***
	(0.04)	(0.05)	(0.03)	(0.04)
Unemp. (au %)	-0.486***	-0.277	-0.345**	-0.307**
	(0.17)	(0.17)	(0.14)	(0.14)
Unemp. lag	0.214	-0.062	0.251	0.188
	(0.19)	(0.18)	(0.16)	(0.15)
Nat. Min. Wage	0.895**	0.268	0.908**	0.768**
	(0.45)	(0.43)	(0.37)	(0.35)
1999 Dummy	0.969	0.305	1.166**	0.934**
	(0.60)	(0.54)	(0.47)	(0.42)
Male	0.385	0.255	-0.866	-0.964
	(0.74)	(0.69)	(0.69)	(0.65)
Public	-0.504**	-0.472**	-0.364*	-0.346*
	(0.23)	(0.22)	(0.20)	(0.19)
Full-time	0.359	0.619	1.284	1.496
	(1.11)	(1.04)	(1.06)	(0.99)
Constant	16.004***	14.448***	11.827***	10.847***
	(1.03)	(1.01)	(0.93)	(0.90)
R-squared	0.802	0.829	0.805	0.831
N	441	441	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 6 Settlements - year fixed effects (not shown), IDS data only, 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.785 (0.57)	-0.760* (0.41)	-2.057 (1.34)	-0.766 (0.57)
Recession lag	-1.150** (0.54)	-1.093*** (0.39)	0.380 (2.49)	-1.097** (0.54)
GDP growth	-0.586*** (0.10)	-0.589*** (0.07)	-1.136*** (0.42)	-0.580*** (0.10)
GDP growth lag	-0.007 (0.13)	-0.012 (0.09)	0.509 (0.36)	-0.001 (0.13)
RPI	0.165*** (0.04)	0.163*** (0.03)	0.468*** (0.15)	0.164*** (0.04)
RPI lag	-0.243*** (0.04)	-0.240*** (0.02)	-0.563*** (0.15)	-0.241*** (0.04)
Unemp. (au %)	-0.565*** (0.21)	-0.715*** (0.16)	-0.663 (1.30)	-0.574*** (0.21)
Unemp. lag	-0.021 (0.22)	0.192 (0.17)	-0.530 (0.92)	-0.011 (0.22)
Nat. Min. Wage	0.547 (0.51)	0.779** (0.34)	-0.151 (5.97)	0.590 (0.51)
Male	0.158 (0.55)	-0.832* (0.43)	0.177 (0.55)	-2.048 (2.06)
Public	-0.485*** (0.17)	-0.401*** (0.12)	-0.481*** (0.17)	-0.414 (0.48)
Full-time	0.539 (0.83)	1.285* (0.66)	0.518 (0.84)	1.979 (2.78)
R-squared	0.892	0.926	0.889	0.892
N	441	441	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 7 Growth in earnings, The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		3.212***		3.266***
		(0.92)		(0.93)
Recession lag		2.928***		2.996***
		(0.93)		(0.94)
GDP growth	-0.767***	-0.141	-0.759***	-0.118
	(0.14)	(0.20)	(0.14)	(0.20)
GDP growth lag	0.124	0.528**	0.124	0.540**
	(0.15)	(0.24)	(0.15)	(0.25)
RPI	0.338***	0.335***	0.334***	0.329***
	(0.08)	(0.08)	(0.08)	(0.09)
RPI lag	-0.423***	-0.414***	-0.417***	-0.405***
	(0.08)	(0.08)	(0.08)	(0.08)
Unemp. (au %)	0.102	0.193	0.098	0.192
	(0.31)	(0.34)	(0.31)	(0.35)
Unemp. lag	-0.428	-0.624*	-0.434	-0.639*
	(0.33)	(0.37)	(0.34)	(0.37)
Nat. Min. Wage	0.497	-0.259	0.509	-0.226
	(0.90)	(0.91)	(0.92)	(0.93)
1999 Dummy	1.405	0.370	1.410	0.361
	(1.22)	(1.23)	(1.24)	(1.24)
Male	-1.848	-2.082	-4.706	-6.917
	(1.52)	(1.49)	(5.65)	(5.56)
Public	-0.439	-0.459	0.351	0.606
	(0.48)	(0.47)	(1.34)	(1.31)
Full-time	3.765	4.129*	5.911	9.029
	(2.33)	(2.29)	(7.47)	(7.35)
Constant	18.040***	14.802***	17.543***	12.916**
	(1.91)	(2.12)	(6.01)	(6.01)
R-squared	0.608	0.623	0.597	0.613
N	476	476	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 8 Growth in earnings - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	3.212*** (0.92)		2.766*** (0.66)	
Recession lag	2.928*** (0.93)		0.776 (0.76)	
1980 Dummy		11.640*** (1.41)		9.439*** (1.07)
1981 Dummy		3.209** (1.24)		4.135*** (0.95)
1991 Dummy		3.079** (1.29)		2.130** (0.84)
2008 Dummy		1.382 (1.10)		0.763 (0.78)
2009 Dummy		3.353 (2.20)		-2.433 (1.51)
GDP growth	-0.141 (0.20)	0.022 (0.26)	-0.272* (0.15)	-0.648*** (0.18)
GDP growth lag	0.528** (0.24)	-0.411** (0.16)	0.214 (0.18)	-0.021 (0.13)
RPI	0.335*** (0.08)	0.182 (0.12)	0.396*** (0.06)	0.127 (0.08)
RPI lag	-0.414*** (0.08)	-0.257** (0.12)	-0.460*** (0.06)	-0.188** (0.08)
Unemp. (au %)	0.193 (0.34)	-0.364 (0.36)	-0.008 (0.25)	-0.547** (0.25)
Unemp. lag	-0.624* (0.37)	-0.054 (0.38)	0.007 (0.28)	0.589** (0.27)
Nat. Min. Wage	-0.259 (0.91)	0.146 (0.91)	1.042 (0.66)	1.475** (0.62)
1999 Dummy	0.370 (1.23)	0.496 (1.17)	2.195*** (0.84)	1.948*** (0.75)
Male	-2.082 (1.49)	-1.943 (1.42)	-2.972** (1.25)	-3.124*** (1.14)
Public	-0.459 (0.47)	-0.343 (0.45)	-0.818** (0.36)	-0.742** (0.33)
Full-time	4.129* (2.29)	4.090* (2.17)	3.526* (1.91)	3.948** (1.75)
Constant	14.802*** (2.12)	16.948*** (2.09)	11.430*** (1.67)	13.227*** (1.58)
R-squared	0.623	0.659	0.649	0.707
N	476	476	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 9 Growth in earnings - year fixed effects (not shown), 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	1.157 (1.45)	2.746*** (0.98)	-0.761 (2.00)	1.215 (1.46)
Recession lag	-1.607 (1.93)	0.913 (0.93)	0.392 (2.07)	-1.462 (1.95)
GDP growth	-0.325 (0.25)	0.121 (0.16)	-0.757 (0.58)	-0.282 (0.26)
GDP growth lag	-0.588* (0.36)	-0.086 (0.21)	1.793** (0.89)	-0.570 (0.36)
RPI	-0.031 (0.15)	0.300*** (0.06)	0.360** (0.16)	-0.035 (0.15)
RPI lag	-0.080 (0.13)	-0.355*** (0.06)	-0.516*** (0.16)	-0.072 (0.13)
Unemp. (au %)	-0.472 (0.65)	0.022 (0.39)	3.144* (1.84)	-0.451 (0.65)
Unemp. lag	-0.597 (0.59)	-0.312 (0.41)	-5.050** (2.24)	-0.630 (0.59)
Nat. Min. Wage	0.079 (1.52)	-1.962** (0.81)	4.876 (3.01)	0.126 (1.53)
Male	-1.932 (1.30)	-2.838*** (1.03)	-1.957 (1.30)	-5.906 (4.89)
Public	-0.395 (0.41)	-0.697** (0.30)	-0.398 (0.41)	0.941 (1.16)
Full-time	3.989** (1.99)	3.649** (1.58)	4.018** (2.00)	9.920 (6.57)
R-squared	0.715	0.764	0.713	0.709
N	476	441	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 10 Wage drift, The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		1.761**		1.812**
		(0.85)		(0.86)
Recession lag		1.042		1.105
		(0.98)		(0.99)
GDP growth	-0.364***	-0.038	-0.345**	-0.004
	(0.13)	(0.20)	(0.13)	(0.20)
GDP growth lag	-0.011	0.068	-0.013	0.074
	(0.15)	(0.23)	(0.15)	(0.23)
RPI	0.145*	0.124	0.138*	0.116
	(0.08)	(0.08)	(0.08)	(0.08)
RPI lag	-0.146*	-0.124	-0.135*	-0.111
	(0.07)	(0.08)	(0.08)	(0.08)
Unemp. (au %)	0.520*	0.478	0.522*	0.483
	(0.28)	(0.32)	(0.28)	(0.33)
Unemp. lag	-0.285	-0.323	-0.307	-0.353
	(0.31)	(0.36)	(0.31)	(0.36)
Nat. Min. Wage	0.371	0.010	0.327	-0.038
	(0.84)	(0.89)	(0.85)	(0.90)
1999 Dummy	1.432	0.938	1.405	0.890
	(1.13)	(1.18)	(1.13)	(1.18)
Male	-2.472*	-2.551*	-4.987	-5.892
	(1.43)	(1.43)	(5.32)	(5.32)
Public	-0.300	-0.297	1.196	1.330
	(0.46)	(0.46)	(1.25)	(1.25)
Full-time	4.221*	4.348**	6.679	8.125
	(2.16)	(2.15)	(7.07)	(7.07)
Constant	-1.607	-2.355	-2.970	-4.470
	(1.90)	(2.02)	(5.73)	(5.77)
R-squared	0.121	0.126	0.092	0.099
N	452	452	452	452

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 11 Wage drift - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	1.761**		1.962***	
	(0.85)		(0.61)	
Recession lag	1.042		0.943	
	(0.98)		(0.71)	
1980 Dummy		6.174***		4.945***
		(1.36)		(1.04)
1981 Dummy		4.041***		3.587***
		(1.19)		(0.92)
1991 Dummy		1.896		1.056
		(1.21)		(0.82)
2008 Dummy		-0.828		0.604
		(1.05)		(0.76)
2009 Dummy		-3.082		-4.684***
		(2.12)		(1.47)
GDP growth	-0.038	-0.473*	0.173	-0.447**
	(0.20)	(0.26)	(0.14)	(0.18)
GDP growth lag	0.068	-0.216	0.016	-0.128
	(0.23)	(0.17)	(0.16)	(0.12)
RPI	0.124	-0.147	0.097*	-0.208***
	(0.08)	(0.11)	(0.06)	(0.08)
RPI lag	-0.124	0.150	-0.097*	0.207***
	(0.08)	(0.11)	(0.06)	(0.08)
Unemp. (au %)	0.478	-0.281	0.448*	-0.150
	(0.32)	(0.34)	(0.24)	(0.24)
Unemp. lag	-0.323	0.532	-0.355	0.304
	(0.36)	(0.37)	(0.26)	(0.26)
Nat. Min. Wage	0.010	0.867	-0.118	0.466
	(0.89)	(0.88)	(0.61)	(0.60)
1999 Dummy	0.938	0.986	1.079	0.988
	(1.18)	(1.11)	(0.78)	(0.73)
Male	-2.551*	-2.479*	-3.202***	-3.242***
	(1.43)	(1.38)	(1.16)	(1.11)
Public	-0.297	-0.189	-0.720**	-0.652**
	(0.46)	(0.44)	(0.34)	(0.32)
Full-time	4.348**	4.408**	4.154**	4.356**
	(2.15)	(2.08)	(1.78)	(1.70)
Constant	-2.355	-0.601	-1.466	1.412
	(2.02)	(2.05)	(1.55)	(1.53)
R-squared	0.126	0.186	0.151	0.230
N	452	452	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 12 Wage drift - year fixed effects (not shown), 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	0.118 (1.38)	3.491*** (1.01)	-5.727* (3.32)	0.188 (1.38)
Recession lag	2.048 (1.36)	1.987** (0.96)	-15.115** (6.17)	2.119 (1.37)
GDP growth	0.279 (0.24)	0.625*** (0.17)	-1.955* (1.05)	0.325 (0.24)
GDP growth lag	-0.208 (0.31)	-0.071 (0.21)	1.528* (0.89)	-0.211 (0.31)
RPI	0.178* (0.10)	0.168*** (0.06)	0.754** (0.36)	0.169* (0.10)
RPI lag	-0.162* (0.09)	-0.143** (0.06)	-0.869** (0.38)	-0.148 (0.09)
Unemp. (au %)	0.998** (0.50)	0.594 (0.40)	10.619*** (3.22)	1.003** (0.50)
Unemp. lag	-1.095** (0.51)	-0.360 (0.43)	-5.840** (2.28)	-1.125** (0.51)
Nat. Min. Wage	-2.123* (1.22)	-3.052*** (0.84)	42.514*** (14.79)	-2.160* (1.23)
Male	-2.345* (1.34)	-3.083*** (1.06)	-2.349* (1.34)	-4.840 (5.05)
Public	-0.177 (0.43)	-0.553* (0.31)	-0.180 (0.43)	1.975* (1.19)
Full-time	4.326** (2.03)	4.246*** (1.63)	4.327** (2.03)	8.153 (6.83)
R-squared	0.229	0.303	0.232	0.212
N	452	441	452	452

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 13 Interdecile ratio ([p90-p10]/p50), The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		0.025		0.004
		(0.08)		(0.04)
Recession lag		0.050		0.025
		(0.08)		(0.04)
GDP growth	0.005	0.012	0.003	0.005
	(0.01)	(0.02)	(0.01)	(0.01)
GDP growth lag	0.000	0.009	-0.001	0.004
	(0.01)	(0.02)	(0.01)	(0.01)
RPI	-0.002	-0.002	-0.001	-0.000
	(0.01)	(0.01)	(0.00)	(0.00)
RPI lag	0.005	0.004	0.003	0.002
	(0.01)	(0.01)	(0.00)	(0.00)
Unemp. (au %)	-0.010	-0.006	-0.010	-0.006
	(0.02)	(0.03)	(0.01)	(0.02)
Unemp. lag	0.003	-0.002	0.006	0.002
	(0.03)	(0.03)	(0.01)	(0.02)
Nat. Min. Wage	-0.014	-0.026	-0.044	-0.050
	(0.07)	(0.07)	(0.04)	(0.04)
1999 Dummy	0.015	-0.001	0.009	0.002
	(0.10)	(0.10)	(0.05)	(0.06)
Male	-1.644***	-1.647***	-0.346	-0.358
	(0.12)	(0.12)	(0.25)	(0.25)
Public	-0.246***	-0.246***	-0.392***	-0.391***
	(0.04)	(0.04)	(0.06)	(0.06)
Full-time	1.930***	1.935***	-0.341	-0.327
	(0.19)	(0.19)	(0.33)	(0.33)
Constant	0.457***	0.403**	1.707***	1.676***
	(0.15)	(0.17)	(0.26)	(0.27)
R-squared	0.404	0.402	0.511	0.510
N	476	476	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 14 Interdecile ratio ([p90-p10]/p50) - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	0.025 (0.08)		0.023 (0.05)	
Recession lag	0.050 (0.08)		0.034 (0.05)	
1980 Dummy		0.072 (0.12)		0.017 (0.08)
1981 Dummy		0.113 (0.11)		0.078 (0.07)
1991 Dummy		0.001 (0.11)		0.045 (0.07)
2008 Dummy		-0.036 (0.09)		-0.029 (0.06)
2009 Dummy		-0.070 (0.19)		-0.065 (0.12)
GDP growth	0.012 (0.02)	0.001 (0.02)	0.004 (0.01)	-0.009 (0.01)
GDP growth lag	0.009 (0.02)	-0.001 (0.01)	0.010 (0.01)	0.005 (0.01)
RPI	-0.002 (0.01)	-0.008 (0.01)	-0.001 (0.00)	-0.005 (0.01)
RPI lag	0.004 (0.01)	0.011 (0.01)	0.004 (0.00)	0.008 (0.01)
Unemp. (au %)	-0.006 (0.03)	-0.025 (0.03)	-0.008 (0.02)	-0.025 (0.02)
Unemp. lag	-0.002 (0.03)	0.016 (0.03)	0.007 (0.02)	0.027 (0.02)
Nat. Min. Wage	-0.026 (0.07)	-0.014 (0.08)	-0.022 (0.05)	0.007 (0.05)
1999 Dummy	-0.001 (0.10)	-0.003 (0.10)	0.001 (0.06)	0.018 (0.06)
Male	-1.647*** (0.12)	-1.643*** (0.12)	-1.342*** (0.09)	-1.335*** (0.09)
Public	-0.246*** (0.04)	-0.244*** (0.04)	-0.353*** (0.03)	-0.351*** (0.03)
Full-time	1.935*** (0.19)	1.932*** (0.19)	1.218*** (0.14)	1.210*** (0.14)
Constant	0.403** (0.17)	0.495*** (0.18)	0.812*** (0.12)	0.867*** (0.12)
R-squared	0.402	0.400	0.584	0.582
N	476	476	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 15 Interdecile ratio ([p90-p10]/p50) - year fixed effects (not shown), 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.004	0.006	-0.035	-0.018
	(0.14)	(0.09)	(0.19)	(0.08)
Recession lag	0.126	0.018	-0.103	0.066
	(0.19)	(0.08)	(0.20)	(0.10)
GDP growth	0.016	-0.001	-0.009	0.005
	(0.02)	(0.01)	(0.06)	(0.01)
GDP growth lag	0.021	0.008	-0.026	0.011
	(0.03)	(0.02)	(0.09)	(0.02)
RPI	0.006	-0.001	-0.003	0.006
	(0.01)	(0.01)	(0.02)	(0.01)
RPI lag	-0.002	0.003	0.004	-0.003
	(0.01)	(0.01)	(0.02)	(0.01)
Unemp. (au %)	0.026	-0.007	-0.015	0.017
	(0.06)	(0.03)	(0.18)	(0.03)
Unemp. lag	-0.028	-0.000	0.031	-0.018
	(0.06)	(0.04)	(0.21)	(0.03)
Nat. Min. Wage	-0.099	-0.063	0.232	-0.136*
	(0.15)	(0.07)	(0.29)	(0.08)
Male	-1.645***	-1.325***	-1.646***	-0.317
	(0.13)	(0.09)	(0.12)	(0.26)
Public	-0.243***	-0.349***	-0.243***	-0.381***
	(0.04)	(0.03)	(0.04)	(0.06)
Full-time	1.935***	1.197***	1.936***	-0.387
	(0.19)	(0.14)	(0.19)	(0.34)
R-squared	0.376	0.569	0.381	0.498
N	476	441	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 16 Interquartile ratio ([p75-p25]/p50), The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		0.014		0.002
		(0.04)		(0.02)
Recession lag		0.021		0.009
		(0.05)		(0.02)
GDP growth	0.004	0.007	0.001	0.002
	(0.01)	(0.01)	(0.00)	(0.00)
GDP growth lag	-0.002	0.001	-0.002	-0.001
	(0.01)	(0.01)	(0.00)	(0.01)
RPI	-0.001	-0.001	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)
RPI lag	0.003	0.003	0.001	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Unemp. (au %)	-0.006	-0.004	-0.005	-0.004
	(0.01)	(0.02)	(0.01)	(0.01)
Unemp. lag	0.002	-0.001	0.004	0.003
	(0.02)	(0.02)	(0.01)	(0.01)
Nat. Min. Wage	-0.025	-0.030	-0.031	-0.033
	(0.04)	(0.04)	(0.02)	(0.02)
1999 Dummy	0.003	-0.004	0.005	0.003
	(0.06)	(0.06)	(0.03)	(0.03)
Male	-0.912***	-0.914***	-0.184	-0.189
	(0.07)	(0.07)	(0.13)	(0.13)
Public	0.034	0.033	-0.178***	-0.178***
	(0.02)	(0.02)	(0.03)	(0.03)
Full-time	0.901***	0.903***	-0.383**	-0.378**
	(0.11)	(0.11)	(0.17)	(0.17)
Constant	0.255***	0.232**	1.026***	1.015***
	(0.09)	(0.10)	(0.14)	(0.14)
R-squared	0.367	0.365	0.393	0.390
N	476	476	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 17 Interquartile ratio ([p75-p25]/p50) - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	0.014		0.003	
	(0.04)		(0.02)	
Recession lag	0.021		0.009	
	(0.05)		(0.03)	
1980 Dummy		0.038		0.009
		(0.07)		(0.04)
1981 Dummy		0.063		0.025
		(0.06)		(0.04)
1991 Dummy		0.002		0.012
		(0.07)		(0.03)
2008 Dummy		-0.020		-0.020
		(0.06)		(0.03)
2009 Dummy		-0.061		-0.062
		(0.11)		(0.06)
GDP growth	0.007	-0.001	0.000	-0.007
	(0.01)	(0.01)	(0.01)	(0.01)
GDP growth lag	0.001	-0.003	0.001	0.000
	(0.01)	(0.01)	(0.01)	(0.01)
RPI	-0.001	-0.005	-0.000	-0.003
	(0.00)	(0.01)	(0.00)	(0.00)
RPI lag	0.003	0.007	0.002	0.004
	(0.00)	(0.01)	(0.00)	(0.00)
Unemp. (au %)	-0.004	-0.016	-0.005	-0.013
	(0.02)	(0.02)	(0.01)	(0.01)
Unemp. lag	-0.001	0.011	0.005	0.015
	(0.02)	(0.02)	(0.01)	(0.01)
Nat. Min. Wage	-0.030	-0.023	-0.012	0.001
	(0.04)	(0.05)	(0.02)	(0.03)
1999 Dummy	-0.004	-0.007	0.005	0.010
	(0.06)	(0.06)	(0.03)	(0.03)
Male	-0.914***	-0.911***	-0.736***	-0.733***
	(0.07)	(0.07)	(0.05)	(0.05)
Public	0.033	0.035	-0.064***	-0.063***
	(0.02)	(0.02)	(0.01)	(0.01)
Full-time	0.903***	0.901***	0.668***	0.665***
	(0.11)	(0.11)	(0.07)	(0.07)
Constant	0.232**	0.289***	0.334***	0.366***
	(0.10)	(0.11)	(0.06)	(0.06)
R-squared	0.365	0.363	0.529	0.528
N	476	476	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 18 Interquartile ratio ([p75-p25]/p50) - year fixed effects (not shown), 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	0.007 (0.08)	0.010 (0.05)	0.004 (0.11)	-0.003 (0.04)
Recession lag	0.049 (0.11)	0.003 (0.04)	-0.025 (0.12)	0.019 (0.05)
GDP growth	0.009 (0.01)	-0.002 (0.01)	0.003 (0.03)	0.001 (0.01)
GDP growth lag	0.006 (0.02)	-0.000 (0.01)	-0.004 (0.05)	0.002 (0.01)
RPI	0.002 (0.01)	0.001 (0.00)	-0.003 (0.01)	0.003 (0.00)
RPI lag	-0.000 (0.01)	0.001 (0.00)	0.004 (0.01)	-0.002 (0.00)
Unemp. (au %)	0.010 (0.04)	-0.006 (0.02)	-0.002 (0.10)	0.005 (0.02)
Unemp. lag	-0.012 (0.03)	0.006 (0.02)	0.013 (0.13)	-0.005 (0.02)
Nat. Min. Wage	-0.067 (0.09)	-0.057 (0.04)	0.089 (0.17)	-0.081* (0.04)
Male	-0.911*** (0.07)	-0.724*** (0.05)	-0.911*** (0.07)	-0.162 (0.13)
Public	0.035 (0.02)	-0.060*** (0.01)	0.035 (0.02)	-0.174*** (0.03)
Full-time	0.901*** (0.11)	0.653*** (0.07)	0.901*** (0.11)	-0.425** (0.18)
R-squared	0.336	0.512	0.342	0.375
N	476	441	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 19 Growth in interdecile ratio, The effect of recession using a dummy variable, 14 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		1.527		1.452
		(1.13)		(1.13)
Recession lag		0.468		0.445
		(1.15)		(1.15)
GDP growth	-0.370**	-0.136	-0.379**	-0.155
	(0.17)	(0.24)	(0.17)	(0.24)
GDP growth lag	0.422**	0.428	0.417**	0.423
	(0.19)	(0.30)	(0.19)	(0.30)
RPI	-0.016	-0.037	-0.013	-0.034
	(0.10)	(0.10)	(0.10)	(0.10)
RPI lag	0.025	0.046	0.017	0.038
	(0.10)	(0.10)	(0.10)	(0.10)
Unemp. (au %)	0.013	-0.082	0.016	-0.075
	(0.37)	(0.42)	(0.37)	(0.42)
Unemp. lag	0.234	0.294	0.259	0.314
	(0.40)	(0.45)	(0.40)	(0.45)
Nat. Min. Wage	-1.158	-1.291	-1.161	-1.279
	(1.09)	(1.12)	(1.10)	(1.13)
1999 Dummy	-2.458*	-2.691*	-2.382	-2.603*
	(1.48)	(1.52)	(1.48)	(1.52)
Male	1.425	1.358	-0.036	-0.599
	(1.84)	(1.84)	(6.77)	(6.80)
Public	0.074	0.071	-0.183	-0.096
	(0.58)	(0.58)	(1.61)	(1.61)
Full-time	1.555	1.665	-9.525	-8.552
	(2.82)	(2.82)	(8.95)	(8.99)
Constant	-3.669	-4.208	6.937	5.932
	(2.31)	(2.62)	(7.21)	(7.35)
R-squared	0.052	0.052	0.017	0.017
N	476	476	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 20 Growth in interdecile ratio - Effect of multiple recession dummies and weighting by number of settlements, 14 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	1.527		2.646***	
	(1.13)		(0.77)	
Recession lag	0.468		1.832**	
	(1.15)		(0.89)	
1980 Dummy		1.775		3.335**
		(1.83)		(1.38)
1981 Dummy		4.192***		4.616***
		(1.60)		(1.22)
1991 Dummy		1.107		2.077*
		(1.67)		(1.08)
2008 Dummy		-0.164		1.237
		(1.42)		(1.00)
2009 Dummy		-3.041		-0.409
		(2.84)		(1.95)
GDP growth	-0.136	-0.600*	0.304*	-0.153
	(0.24)	(0.33)	(0.18)	(0.23)
GDP growth lag	0.428	0.376*	0.426**	0.199
	(0.30)	(0.21)	(0.21)	(0.16)
RPI	-0.037	-0.266*	-0.041	-0.192*
	(0.10)	(0.15)	(0.07)	(0.10)
RPI lag	0.046	0.273*	0.047	0.196*
	(0.10)	(0.15)	(0.07)	(0.10)
Unemp. (au %)	-0.082	-0.642	0.104	-0.389
	(0.42)	(0.46)	(0.30)	(0.32)
Unemp. lag	0.294	0.842*	0.187	0.770**
	(0.45)	(0.49)	(0.33)	(0.35)
Nat. Min. Wage	-1.291	-0.918	-0.005	0.705
	(1.12)	(1.17)	(0.78)	(0.80)
1999 Dummy	-2.691*	-2.925*	-1.239	-0.834
	(1.52)	(1.51)	(0.99)	(0.97)
Male	1.358	1.511	0.559	0.612
	(1.84)	(1.83)	(1.47)	(1.47)
Public	0.071	0.146	-0.313	-0.268
	(0.58)	(0.58)	(0.43)	(0.43)
Full-time	1.665	1.518	1.398	1.400
	(2.82)	(2.81)	(2.26)	(2.26)
Constant	-4.208	-1.419	-5.590***	-3.540*
	(2.62)	(2.70)	(1.97)	(2.04)
R-squared	0.052	0.063	0.110	0.113
N	476	476	441	441

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 21 Growth in interdecile ratio - year fixed effects (not shown), 14 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.802 (2.00)	1.122 (1.29)	-0.214 (2.76)	-0.799 (2.00)
Recession lag	-0.375 (2.66)	-1.751 (1.23)	1.195 (2.86)	-0.446 (2.68)
GDP growth	-0.260 (0.35)	0.129 (0.21)	0.382 (0.81)	-0.291 (0.36)
GDP growth lag	0.145 (0.49)	-0.098 (0.27)	2.204* (1.23)	0.137 (0.49)
RPI	0.267 (0.20)	-0.173** (0.08)	0.136 (0.22)	0.263 (0.20)
RPI lag	-0.244 (0.18)	0.136* (0.08)	-0.152 (0.22)	-0.246 (0.18)
Unemp. (au %)	1.197 (0.89)	0.274 (0.52)	5.223** (2.54)	1.144 (0.89)
Unemp. lag	-0.742 (0.81)	-0.222 (0.55)	-5.320* (3.10)	-0.678 (0.81)
Nat. Min. Wage	-0.522 (2.10)	3.091*** (1.08)	5.942 (4.16)	-0.626 (2.10)
Male	1.367 (1.80)	0.675 (1.36)	1.334 (1.80)	0.958 (6.70)
Public	0.077 (0.57)	-0.368 (0.40)	0.068 (0.57)	-0.140 (1.59)
Full-time	1.744 (2.75)	1.361 (2.09)	1.779 (2.76)	-7.501 (9.00)
R-squared	0.104	0.248	0.102	0.071
N	476	441	476	476

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, ***p<0.01

Table 22 Settlements, The effect of different weights, 14 SICs

	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se
Recession	0.905** (0.43)	0.804** (0.37)	-0.573** (0.24)
Recession lag	-0.481 (0.49)	-0.168 (0.43)	-0.803* (0.43)
GDP growth	-0.542*** (0.10)	-0.445*** (0.09)	-0.305*** (0.08)
GDP growth lag	0.233** (0.12)	0.199** (0.10)	0.003 (0.06)
RPI	0.240*** (0.04)	0.299*** (0.03)	0.197*** (0.03)
RPI lag	-0.320*** (0.04)	-0.363*** (0.03)	-0.244*** (0.04)
Unemp. (au %)	-0.605*** (0.16)	-0.456*** (0.14)	0.173 (0.12)
Unemp. lag	0.328* (0.18)	0.362** (0.16)	-0.397*** (0.12)
Nat. Min. Wage	1.133** (0.45)	1.160*** (0.37)	0.148 (0.18)
1999 Dummy	0.955 (0.60)	1.115** (0.48)	0.350 (0.23)
Male	0.973 (0.72)	0.230 (0.71)	2.041*** (0.37)
Public	-0.216 (0.23)	-0.098 (0.21)	0.229** (0.10)
Full-time	-0.986 (1.09)	-0.628 (1.09)	-2.010*** (0.51)
Constant	16.833*** (1.02)	12.896*** (0.95)	12.366*** (1.09)
R-squared	0.811	0.807	0.440
N	452	441	349

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 23 Settlements - Effect of multiple recession dummies and different weights, 14 SICs

	OLS	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se	b/se
Recession	0.905** (0.43)			
Recession lag	-0.481 (0.49)			
1980 Dummy		4.912*** (0.67)	4.494*** (0.63)	4.516 (2.95)
1981 Dummy		0.338 (0.59)	0.548 (0.56)	-0.456 (2.42)
1991 Dummy		1.054* (0.60)	1.074** (0.50)	-0.774 (1.94)
2008 Dummy		0.747 (0.52)	0.159 (0.46)	-0.533** (0.24)
2009 Dummy		2.932*** (1.05)	2.250** (0.89)	-1.357** (0.56)
GDP growth	-0.542*** (0.10)	-0.136 (0.13)	-0.201* (0.11)	-0.274*** (0.08)
GDP growth lag	0.233** (0.12)	0.129 (0.08)	0.107 (0.07)	0.018 (0.06)
RPI	0.240*** (0.04)	0.285*** (0.06)	0.335*** (0.05)	0.174*** (0.04)
RPI lag	-0.320*** (0.04)	-0.358*** (0.05)	-0.395*** (0.05)	-0.217*** (0.04)
Unemp. (au %)	-0.605*** (0.16)	-0.423** (0.17)	-0.397*** (0.15)	0.153 (0.13)
Unemp. lag	0.328* (0.18)	0.100 (0.18)	0.286* (0.16)	-0.368*** (0.13)
Nat. Min. Wage	1.133** (0.45)	0.666 (0.44)	1.009*** (0.36)	0.101 (0.19)
1999 Dummy	0.955 (0.60)	0.520 (0.55)	0.960** (0.44)	0.274 (0.23)
Male	0.973 (0.72)	0.836 (0.68)	0.118 (0.67)	2.036*** (0.37)
Public	-0.216 (0.23)	-0.210 (0.22)	-0.090 (0.20)	0.227** (0.10)
Full-time	-0.986 (1.09)	-0.725 (1.03)	-0.408 (1.03)	-1.999*** (0.51)
Constant	16.833*** (1.02)	15.218*** (1.02)	11.815*** (0.93)	11.518*** (1.25)
R-squared	0.811	0.831	0.826	0.439
N	452	452	441	349

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 24 Wage drift, The effect of different weights, 14 SICs,

	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se
Recession	1.761**	1.962***	-2.475**
	(0.85)	(0.61)	(0.97)
Recession lag	1.042	0.943	-1.376
	(0.98)	(0.71)	(1.69)
GDP growth	-0.038	0.173	-1.027***
	(0.20)	(0.14)	(0.31)
GDP growth lag	0.068	0.016	0.035
	(0.23)	(0.16)	(0.25)
RPI	0.124	0.097*	-0.045
	(0.08)	(0.06)	(0.13)
RPI lag	-0.124	-0.097*	0.028
	(0.08)	(0.06)	(0.15)
Unemp. (au %)	0.478	0.448*	-0.998**
	(0.32)	(0.24)	(0.49)
Unemp. lag	-0.323	-0.355	0.972**
	(0.36)	(0.26)	(0.49)
Nat. Min. Wage	0.010	-0.118	0.709
	(0.89)	(0.61)	(0.74)
1999 Dummy	0.938	1.079	1.684*
	(1.18)	(0.78)	(0.90)
Male	-2.551*	-3.202***	-4.818***
	(1.43)	(1.16)	(1.47)
Public	-0.297	-0.720**	-1.290***
	(0.46)	(0.34)	(0.39)
Full-time	4.348**	4.154**	6.713***
	(2.15)	(1.78)	(2.03)
Constant	-2.355	-1.466	3.926
	(2.02)	(1.55)	(4.32)
R-squared	0.126	0.151	0.093
N	452	441	349

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, ***p<0.01

Table 25 Wage drift - Effect of multiple recession dummies and different weights, 14 SICs

	OLS	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se	b/se
Recession	1.761**			
	(0.85)			
Recession lag	1.042			
	(0.98)			
1980 Dummy		6.174***	4.945***	5.053
		(1.36)	(1.04)	(11.75)
1981 Dummy		4.041***	3.587***	7.440
		(1.19)	(0.92)	(9.65)
1991 Dummy		1.896	1.056	3.089
		(1.21)	(0.82)	(7.74)
2008 Dummy		-0.828	0.604	-2.450**
		(1.05)	(0.76)	(0.96)
2009 Dummy		-3.082	-4.684***	-4.388**
		(2.12)	(1.47)	(2.23)
GDP growth	-0.038	-0.473*	-0.447**	-0.959***
	(0.20)	(0.26)	(0.18)	(0.31)
GDP growth lag	0.068	-0.216	-0.128	0.082
	(0.23)	(0.17)	(0.12)	(0.25)
RPI	0.124	-0.147	-0.208***	-0.159
	(0.08)	(0.11)	(0.08)	(0.15)
RPI lag	-0.124	0.150	0.207***	0.164
	(0.08)	(0.11)	(0.08)	(0.17)
Unemp. (au %)	0.478	-0.281	-0.150	-1.142**
	(0.32)	(0.34)	(0.24)	(0.50)
Unemp. lag	-0.323	0.532	0.304	1.164**
	(0.36)	(0.37)	(0.26)	(0.51)
Nat. Min. Wage	0.010	0.867	0.466	0.517
	(0.89)	(0.88)	(0.60)	(0.75)
1999 Dummy	0.938	0.986	0.988	1.388
	(1.18)	(1.11)	(0.73)	(0.92)
Male	-2.551*	-2.479*	-3.242***	-4.832***
	(1.43)	(1.38)	(1.11)	(1.47)
Public	-0.297	-0.189	-0.652**	-1.295***
	(0.46)	(0.44)	(0.32)	(0.39)
Full-time	4.348**	4.408**	4.356**	6.740***
	(2.15)	(2.08)	(1.70)	(2.03)
Constant	-2.355	-0.601	1.412	0.200
	(2.02)	(2.05)	(1.53)	(4.99)
R-squared	0.126	0.186	0.230	0.091
N	452	452	441	349

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 26 Settlements - Effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		0.455		0.437
		(0.30)		(0.30)
Recession lag		-0.522		-0.526
		(0.35)		(0.35)
GDP growth	-0.575***	-0.560***	-0.585***	-0.572***
	(0.05)	(0.07)	(0.05)	(0.07)
GDP growth lag	0.372***	0.249***	0.375***	0.252***
	(0.05)	(0.08)	(0.05)	(0.08)
RPI	0.226***	0.209***	0.234***	0.217***
	(0.03)	(0.03)	(0.03)	(0.03)
RPI lag	-0.304***	-0.289***	-0.313***	-0.297***
	(0.03)	(0.03)	(0.03)	(0.03)
Unemp. (au %)	-0.508***	-0.637***	-0.500***	-0.628***
	(0.10)	(0.11)	(0.10)	(0.11)
Unemp. lag	0.186*	0.328**	0.196*	0.336***
	(0.11)	(0.13)	(0.11)	(0.13)
Nat. Min. Wage	0.751**	0.909***	0.786***	0.943***
	(0.30)	(0.32)	(0.30)	(0.32)
1999 Dummy	0.530	0.685	0.568	0.722*
	(0.41)	(0.43)	(0.41)	(0.43)
Male	1.175**	1.170**	2.491	2.544
	(0.52)	(0.51)	(1.96)	(1.96)
Public	-0.026	-0.028	-0.666	-0.657
	(0.19)	(0.19)	(0.49)	(0.49)
Full-time	-1.769**	-1.749**	-2.648	-2.537
	(0.84)	(0.84)	(2.63)	(2.63)
Constant	17.292***	17.671***	17.301***	17.564***
	(0.74)	(0.79)	(2.20)	(2.22)
R-squared	0.825	0.825	0.822	0.823
N	799	799	799	799

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 27 Settlements - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	0.455		0.703**	
	(0.30)		(0.32)	
Recession lag	-0.522		-0.304	
	(0.35)		(0.37)	
1980 Dummy		3.211***		4.610***
		(0.47)		(0.55)
1981 Dummy		-0.355		0.324
		(0.41)		(0.48)
1991 Dummy		0.244		1.042**
		(0.42)		(0.43)
2008 Dummy		0.837**		0.071
		(0.38)		(0.40)
2009 Dummy		3.136***		2.053***
		(0.77)		(0.77)
GDP growth	-0.560***	-0.117	-0.476***	-0.222**
	(0.07)	(0.09)	(0.08)	(0.09)
GDP growth lag	0.249***	0.201***	0.186**	0.103
	(0.08)	(0.06)	(0.09)	(0.06)
RPI	0.209***	0.297***	0.310***	0.343***
	(0.03)	(0.04)	(0.03)	(0.04)
RPI lag	-0.289***	-0.370***	-0.374***	-0.402***
	(0.03)	(0.04)	(0.03)	(0.04)
Unemp. (au %)	-0.637***	-0.314***	-0.425***	-0.362***
	(0.11)	(0.12)	(0.12)	(0.13)
Unemp. lag	0.328**	-0.061	0.347**	0.263*
	(0.13)	(0.13)	(0.14)	(0.14)
Nat. Min. Wage	0.909***	0.206	1.151***	0.983***
	(0.32)	(0.32)	(0.32)	(0.32)
1999 Dummy	0.685	0.197	1.160***	0.969**
	(0.43)	(0.41)	(0.41)	(0.38)
Male	1.170**	1.046**	0.353	0.246
	(0.51)	(0.50)	(0.52)	(0.50)
Public	-0.028	-0.027	-0.199	-0.189
	(0.19)	(0.18)	(0.17)	(0.16)
Full-time	-1.749**	-1.502*	-0.558	-0.350
	(0.84)	(0.81)	(0.85)	(0.82)
Constant	17.671***	15.864***	12.723***	11.620***
	(0.79)	(0.79)	(0.80)	(0.80)
R-squared	0.825	0.838	0.780	0.800
N	799	799	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 28 Settlements - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.187	-0.801*	-1.889*	-0.218
	(0.43)	(0.41)	(1.06)	(0.42)
Recession lag	-0.757*	-1.120***	0.450	-0.687*
	(0.42)	(0.39)	(1.97)	(0.41)
GDP growth	-0.423***	-0.543***	-1.019***	-0.427***
	(0.07)	(0.07)	(0.33)	(0.07)
GDP growth lag	0.058	-0.016	0.494*	0.071
	(0.09)	(0.09)	(0.28)	(0.09)
RPI	0.131***	0.140***	0.473***	0.139***
	(0.03)	(0.03)	(0.12)	(0.03)
RPI lag	-0.203***	-0.220***	-0.558***	-0.211***
	(0.03)	(0.03)	(0.12)	(0.03)
Unemp. (au %)	-0.514***	-0.611***	-0.470	-0.495***
	(0.15)	(0.16)	(1.03)	(0.15)
Unemp. lag	0.091	0.103	-0.428	0.082
	(0.16)	(0.17)	(0.73)	(0.15)
Nat. Min. Wage	0.719*	1.029***	0.545	0.780**
	(0.38)	(0.34)	(4.71)	(0.37)
Male	0.903**	0.298	0.909**	1.534
	(0.41)	(0.37)	(0.42)	(1.55)
Public	-0.010	-0.254**	-0.009	-0.721*
	(0.15)	(0.12)	(0.15)	(0.38)
Full-time	-1.526**	-0.445	-1.534**	1.329
	(0.67)	(0.61)	(0.68)	(2.15)
R-squared	0.889	0.891	0.887	0.891
N	799	701	799	799

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 29 Settlements - Effect of recession using a dummy variable, IDS data only, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		-0.102		-0.109
		(0.33)		(0.33)
Recession lag		-0.919**		-0.929**
		(0.38)		(0.38)
GDP growth	-0.589***	-0.682***	-0.592***	-0.687***
	(0.05)	(0.08)	(0.05)	(0.08)
GDP growth lag	0.369***	0.212**	0.372***	0.213**
	(0.06)	(0.09)	(0.06)	(0.09)
RPI	0.294***	0.283***	0.297***	0.286***
	(0.03)	(0.03)	(0.03)	(0.03)
RPI lag	-0.363***	-0.354***	-0.366***	-0.357***
	(0.03)	(0.03)	(0.03)	(0.03)
Unemp. (au %)	-0.320***	-0.442***	-0.313***	-0.435***
	(0.11)	(0.13)	(0.11)	(0.12)
Unemp. lag	0.031	0.192	0.033	0.195
	(0.12)	(0.14)	(0.12)	(0.14)
Nat. Min. Wage	0.446	0.736**	0.479	0.764**
	(0.32)	(0.34)	(0.32)	(0.34)
1999 Dummy	0.567	0.897**	0.584	0.917**
	(0.43)	(0.46)	(0.43)	(0.45)
Male	0.999*	1.032*	0.552	0.843
	(0.56)	(0.55)	(2.05)	(2.05)
Public	-0.107	-0.104	-0.452	-0.461
	(0.19)	(0.19)	(0.50)	(0.50)
Full-time	-1.188	-1.233	-0.846	-1.232
	(0.88)	(0.88)	(2.76)	(2.76)
Constant	15.587***	16.260***	15.627***	16.448***
	(0.78)	(0.83)	(2.30)	(2.32)
R-squared	0.806	0.807	0.808	0.809
N	701	701	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 30 Settlements - Effect of multiple recession dummies and weighting by number of settlements, IDS data only, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	-0.102		0.503	
	(0.33)		(0.33)	
Recession lag	-0.919**		-0.554	
	(0.38)		(0.38)	
1980 Dummy		3.401***		4.717***
		(0.52)		(0.55)
1981 Dummy		-1.003**		-0.136
		(0.46)		(0.49)
1991 Dummy		-0.165		1.036**
		(0.47)		(0.43)
2008 Dummy		0.180		-0.118
		(0.40)		(0.40)
2009 Dummy		1.648**		1.287*
		(0.81)		(0.78)
GDP growth	-0.682***	-0.263***	-0.525***	-0.289***
	(0.08)	(0.10)	(0.08)	(0.09)
GDP growth lag	0.212**	0.196***	0.159*	0.092
	(0.09)	(0.06)	(0.09)	(0.07)
RPI	0.283***	0.322***	0.340***	0.350***
	(0.03)	(0.04)	(0.03)	(0.04)
RPI lag	-0.354***	-0.387***	-0.398***	-0.404***
	(0.03)	(0.04)	(0.03)	(0.04)
Unemp. (au %)	-0.442***	-0.163	-0.345***	-0.310**
	(0.13)	(0.13)	(0.13)	(0.13)
Unemp. lag	0.192	-0.158	0.254*	0.194
	(0.14)	(0.14)	(0.14)	(0.14)
Nat. Min. Wage	0.736**	0.068	0.894***	0.760**
	(0.34)	(0.34)	(0.33)	(0.32)
1999 Dummy	0.897**	0.277	1.164***	0.935**
	(0.46)	(0.42)	(0.42)	(0.39)
Male	1.032*	0.919*	-0.406	-0.506
	(0.55)	(0.53)	(0.53)	(0.50)
Public	-0.104	-0.085	-0.321*	-0.304*
	(0.19)	(0.19)	(0.17)	(0.16)
Full-time	-1.233	-1.016	0.740	0.940
	(0.88)	(0.84)	(0.87)	(0.82)
Constant	16.260***	14.615***	11.968***	11.006***
	(0.83)	(0.82)	(0.81)	(0.80)
R-squared	0.807	0.825	0.765	0.789
N	701	701	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 31 Settlements - Year fixed effects (not shown), IDS data only, 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.770	-0.771*	-1.866	-0.773
	(0.50)	(0.43)	(1.17)	(0.48)
Recession lag	-0.899*	-1.107***	0.259	-0.894*
	(0.47)	(0.41)	(2.17)	(0.46)
GDP growth	-0.584***	-0.593***	-1.038***	-0.583***
	(0.09)	(0.07)	(0.37)	(0.08)
GDP growth lag	0.082	-0.013	0.525*	0.085
	(0.11)	(0.09)	(0.31)	(0.11)
RPI	0.198***	0.165***	0.452***	0.199***
	(0.03)	(0.03)	(0.13)	(0.03)
RPI lag	-0.267***	-0.241***	-0.536***	-0.268***
	(0.03)	(0.03)	(0.13)	(0.03)
Unemp. (au %)	-0.499***	-0.718***	-0.484	-0.490***
	(0.19)	(0.17)	(1.13)	(0.18)
Unemp. lag	0.054	0.196	-0.525	0.048
	(0.19)	(0.18)	(0.80)	(0.19)
Nat. Min. Wage	0.320	0.760**	-0.268	0.377
	(0.45)	(0.35)	(5.21)	(0.44)
Male	0.853*	-0.445	0.862*	-0.077
	(0.47)	(0.38)	(0.48)	(1.74)
Public	-0.096	-0.368***	-0.095	-0.437
	(0.16)	(0.13)	(0.17)	(0.42)
Full-time	-1.071	0.824	-1.083	1.053
	(0.75)	(0.63)	(0.76)	(2.38)
R-squared	0.862	0.879	0.859	0.867
N	701	701	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 32 Growth in earnings - Effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		2.528**		2.646**
		(1.04)		(1.05)
Recession lag		3.967***		4.104***
		(1.06)		(1.07)
GDP growth	-0.607***	-0.000	-0.593***	0.040
	(0.16)	(0.22)	(0.16)	(0.22)
GDP growth lag	0.350**	1.003***	0.351**	1.023***
	(0.17)	(0.28)	(0.17)	(0.28)
RPI	0.309***	0.341***	0.284***	0.315***
	(0.09)	(0.10)	(0.09)	(0.10)
RPI lag	-0.389***	-0.412***	-0.358***	-0.380***
	(0.09)	(0.09)	(0.09)	(0.10)
Unemp. (au %)	0.774**	1.094***	0.758**	1.085***
	(0.35)	(0.39)	(0.35)	(0.39)
Unemp. lag	-1.164***	-1.592***	-1.205***	-1.646***
	(0.37)	(0.42)	(0.38)	(0.42)
Nat. Min. Wage	0.041	-0.964	0.114	-0.895
	(1.01)	(1.04)	(1.03)	(1.05)
1999 Dummy	1.266	-0.019	1.118	-0.207
	(1.38)	(1.40)	(1.39)	(1.41)
Male	-2.470	-2.684	-8.651	-10.106*
	(1.77)	(1.75)	(5.40)	(5.36)
Public	0.387	0.363	2.287	2.220
	(0.64)	(0.64)	(1.44)	(1.43)
Full-time	6.121**	6.448**	28.511***	30.503***
	(2.91)	(2.89)	(7.72)	(7.66)
Constant	15.273***	10.953***	-1.040	-6.155
	(2.38)	(2.62)	(6.35)	(6.41)
R-squared	0.384	0.395	0.375	0.387
N	952	952	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 33 Growth in earnings - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	2.528**		2.221***	
	(1.04)		(0.66)	
Recession lag	3.967***		0.756	
	(1.06)		(0.76)	
1980 Dummy		7.968***		9.175***
		(1.68)		(1.11)
1981 Dummy		4.328***		3.497***
		(1.48)		(0.98)
1991 Dummy		0.609		1.264
		(1.54)		(0.87)
2008 Dummy		0.630		0.397
		(1.31)		(0.81)
2009 Dummy		0.249		-3.332**
		(2.61)		(1.57)
GDP growth	-0.000	-0.251	-0.333**	-0.722***
	(0.22)	(0.31)	(0.16)	(0.19)
GDP growth lag	1.003***	0.073	0.290	0.060
	(0.28)	(0.20)	(0.18)	(0.13)
RPI	0.341***	0.091	0.364***	0.078
	(0.10)	(0.14)	(0.06)	(0.08)
RPI lag	-0.412***	-0.162	-0.427***	-0.137*
	(0.09)	(0.14)	(0.06)	(0.08)
Unemp. (au %)	1.094***	0.333	0.157	-0.357
	(0.39)	(0.42)	(0.26)	(0.26)
Unemp. lag	-1.592***	-0.828*	-0.172	0.379
	(0.42)	(0.45)	(0.28)	(0.28)
Nat. Min. Wage	-0.964	-0.555	0.753	1.085*
	(1.04)	(1.08)	(0.66)	(0.64)
1999 Dummy	-0.019	0.079	2.393***	2.040***
	(1.40)	(1.39)	(0.84)	(0.78)
Male	-2.684	-2.505	-1.789*	-2.036**
	(1.75)	(1.74)	(1.07)	(1.01)
Public	0.363	0.421	-0.755**	-0.696**
	(0.64)	(0.63)	(0.35)	(0.33)
Full-time	6.448**	6.332**	2.514	3.013*
	(2.89)	(2.88)	(1.75)	(1.66)
Constant	10.953***	15.517***	11.785***	13.706***
	(2.62)	(2.70)	(1.65)	(1.61)
R-squared	0.395	0.402	0.533	0.585
N	952	952	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 34 Growth in earnings - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	0.856	2.680**	-0.488	0.874
	(1.81)	(1.06)	(2.52)	(1.82)
Recession lag	-2.336	0.931	2.393	-2.008
	(2.41)	(1.01)	(2.60)	(2.43)
GDP growth	-0.318	0.103	-0.313	-0.267
	(0.32)	(0.18)	(0.73)	(0.32)
GDP growth lag	-0.202	-0.032	2.281**	-0.170
	(0.44)	(0.22)	(1.12)	(0.45)
RPI	0.039	0.265***	0.423**	0.017
	(0.18)	(0.07)	(0.20)	(0.18)
RPI lag	-0.150	-0.317***	-0.577***	-0.122
	(0.16)	(0.06)	(0.20)	(0.16)
Unemp. (au %)	0.769	0.082	4.622**	0.780
	(0.81)	(0.43)	(2.31)	(0.81)
Unemp. lag	-1.850**	-0.404	-6.449**	-1.894**
	(0.73)	(0.45)	(2.82)	(0.74)
Nat. Min. Wage	-0.679	-2.681***	6.858*	-0.254
	(1.90)	(0.89)	(3.78)	(1.91)
Male	-2.583	-1.867*	-2.577	-10.340**
	(1.68)	(0.96)	(1.69)	(5.16)
Public	0.400	-0.665**	0.399	2.400*
	(0.61)	(0.31)	(0.61)	(1.37)
Full-time	6.278**	2.856*	6.292**	30.524***
	(2.77)	(1.56)	(2.79)	(7.52)
R-squared	0.450	0.633	0.442	0.443
N	952	701	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 35 Wage drift – Effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		1.704***		1.734***
		(0.66)		(0.67)
Recession lag		0.822		0.827
		(0.76)		(0.77)
GDP growth	-0.203*	0.094	-0.195*	0.106
	(0.10)	(0.15)	(0.11)	(0.16)
GDP growth lag	0.020	0.066	0.019	0.064
	(0.11)	(0.18)	(0.11)	(0.18)
RPI	0.176***	0.155**	0.172***	0.149**
	(0.06)	(0.06)	(0.06)	(0.06)
RPI lag	-0.176***	-0.154**	-0.170***	-0.147**
	(0.06)	(0.06)	(0.06)	(0.06)
Unemp. (au %)	0.716***	0.645***	0.714***	0.640**
	(0.21)	(0.25)	(0.22)	(0.25)
Unemp. lag	-0.558**	-0.557**	-0.571**	-0.569**
	(0.24)	(0.28)	(0.24)	(0.28)
Nat. Min. Wage	0.115	-0.196	0.074	-0.222
	(0.66)	(0.70)	(0.68)	(0.72)
1999 Dummy	1.417	0.995	1.379	0.956
	(0.91)	(0.95)	(0.92)	(0.96)
Male	-1.261	-1.347	-1.232	-1.956
	(1.13)	(1.13)	(4.36)	(4.36)
Public	-0.062	-0.061	0.708	0.762
	(0.41)	(0.41)	(1.09)	(1.09)
Full-time	2.829	2.985	4.712	6.162
	(1.84)	(1.84)	(5.86)	(5.87)
Constant	-1.364	-2.015	-3.277	-4.682
	(1.63)	(1.72)	(4.91)	(4.94)
R-squared	0.108	0.114	0.074	0.080
N	799	799	799	799

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 36 Wage drift - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	1.704***		1.518**	
	(0.66)		(0.64)	
Recession lag	0.822		1.060	
	(0.76)		(0.74)	
1980 Dummy		5.192***		4.565***
		(1.03)		(1.11)
1981 Dummy		3.295***		3.172***
		(0.91)		(0.98)
1991 Dummy		1.920**		0.222
		(0.93)		(0.87)
2008 Dummy		-0.604		0.326
		(0.85)		(0.81)
2009 Dummy		-4.644***		-5.385***
		(1.70)		(1.57)
GDP growth	0.094	-0.461**	0.143	-0.500***
	(0.15)	(0.21)	(0.15)	(0.19)
GDP growth lag	0.066	-0.179	0.104	-0.043
	(0.18)	(0.13)	(0.17)	(0.13)
RPI	0.155**	-0.164*	0.053	-0.265***
	(0.06)	(0.09)	(0.06)	(0.08)
RPI lag	-0.154**	0.167*	-0.053	0.265***
	(0.06)	(0.09)	(0.06)	(0.08)
Unemp. (au %)	0.645***	-0.147	0.582**	0.004
	(0.25)	(0.26)	(0.25)	(0.26)
Unemp. lag	-0.557**	0.344	-0.519*	0.116
	(0.28)	(0.29)	(0.27)	(0.28)
Nat. Min. Wage	-0.196	0.797	-0.398	0.102
	(0.70)	(0.70)	(0.64)	(0.64)
1999 Dummy	0.995	1.062	1.233	1.071
	(0.95)	(0.90)	(0.82)	(0.78)
Male	-1.347	-1.190	-2.142**	-2.282**
	(1.13)	(1.10)	(1.04)	(1.01)
Public	-0.061	0.031	-0.556	-0.507
	(0.41)	(0.40)	(0.34)	(0.33)
Full-time	2.985	2.890	3.072*	3.363**
	(1.84)	(1.79)	(1.70)	(1.66)
Constant	-2.015	0.425	-0.938	2.086
	(1.72)	(1.75)	(1.60)	(1.61)
R-squared	0.114	0.163	0.084	0.137
N	799	799	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 37 Wage drift - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	1.373	3.481***	-4.787*	1.392
	(1.11)	(1.10)	(2.72)	(1.12)
Recession lag	1.542	2.051*	-13.620***	1.504
	(1.09)	(1.05)	(5.07)	(1.10)
GDP growth	0.389**	0.646***	-1.525*	0.400**
	(0.19)	(0.18)	(0.86)	(0.19)
GDP growth lag	-0.165	-0.016	1.609**	-0.178
	(0.24)	(0.23)	(0.73)	(0.25)
RPI	0.123	0.125*	0.697**	0.119
	(0.08)	(0.07)	(0.30)	(0.08)
RPI lag	-0.120	-0.097	-0.794**	-0.114
	(0.08)	(0.07)	(0.31)	(0.08)
Unemp. (au %)	0.555	0.692	9.996***	0.551
	(0.39)	(0.44)	(2.65)	(0.40)
Unemp. lag	-0.650	-0.507	-5.657***	-0.657
	(0.40)	(0.47)	(1.87)	(0.41)
Nat. Min. Wage	-1.838*	-3.710***	37.593***	-1.880*
	(0.98)	(0.92)	(12.16)	(1.00)
Male	-1.114	-2.165**	-1.124	-0.328
	(1.07)	(0.99)	(1.07)	(4.17)
Public	0.038	-0.412	0.036	1.103
	(0.39)	(0.32)	(0.39)	(1.03)
Full-time	2.799	3.301**	2.814	3.592
	(1.74)	(1.62)	(1.75)	(5.77)
R-squared	0.209	0.183	0.204	0.181
N	799	701	799	799

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 38 Interdecile ratio ($[(p90-p10)/p50]$) - Effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		-0.008		-0.010
		(0.05)		(0.03)
Recession lag		0.034		0.023
		(0.05)		(0.03)
GDP growth	0.008	0.009	0.006	0.007
	(0.01)	(0.01)	(0.00)	(0.01)
GDP growth lag	-0.000	0.007	0.000	0.005
	(0.01)	(0.01)	(0.00)	(0.01)
RPI	-0.000	0.001	0.001	0.002
	(0.00)	(0.00)	(0.00)	(0.00)
RPI lag	0.003	0.002	0.001	0.000
	(0.00)	(0.00)	(0.00)	(0.00)
Unemp. (au %)	-0.000	0.006	0.002	0.006
	(0.02)	(0.02)	(0.01)	(0.01)
Unemp. lag	-0.002	-0.009	-0.001	-0.006
	(0.02)	(0.02)	(0.01)	(0.01)
Nat. Min. Wage	-0.028	-0.036	-0.031	-0.037
	(0.05)	(0.05)	(0.03)	(0.03)
1999 Dummy	-0.015	-0.024	-0.011	-0.017
	(0.06)	(0.07)	(0.03)	(0.04)
Male	-0.952***	-0.953***	-0.031	-0.038
	(0.08)	(0.08)	(0.14)	(0.14)
Public	-0.088***	-0.088***	-0.371***	-0.371***
	(0.03)	(0.03)	(0.04)	(0.04)
Full-time	0.644***	0.646***	-0.439**	-0.435**
	(0.14)	(0.14)	(0.19)	(0.19)
Constant	0.957***	0.920***	1.391***	1.368***
	(0.11)	(0.12)	(0.16)	(0.16)
R-squared	0.309	0.308	0.489	0.489
N	952	952	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 39 Interdecile ratio ([p90-p10]/p50) - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	-0.008		0.028	
	(0.05)		(0.04)	
Recession lag	0.034		0.041	
	(0.05)		(0.05)	
1980 Dummy		0.008		0.035
		(0.08)		(0.08)
1981 Dummy		0.074		0.072
		(0.07)		(0.07)
1991 Dummy		0.007		0.044
		(0.07)		(0.06)
2008 Dummy		-0.075		-0.020
		(0.06)		(0.06)
2009 Dummy		-0.106		-0.061
		(0.12)		(0.11)
GDP growth	0.009	-0.003	0.007	-0.006
	(0.01)	(0.01)	(0.01)	(0.01)
GDP growth lag	0.007	0.000	0.011	0.005
	(0.01)	(0.01)	(0.01)	(0.01)
RPI	0.001	-0.005	-0.001	-0.005
	(0.00)	(0.01)	(0.00)	(0.01)
RPI lag	0.002	0.008	0.004	0.008
	(0.00)	(0.01)	(0.00)	(0.01)
Unemp. (au %)	0.006	-0.015	-0.006	-0.023
	(0.02)	(0.02)	(0.02)	(0.02)
Unemp. lag	-0.009	0.012	0.004	0.024
	(0.02)	(0.02)	(0.02)	(0.02)
Nat. Min. Wage	-0.036	-0.014	-0.019	0.010
	(0.05)	(0.05)	(0.04)	(0.05)
1999 Dummy	-0.024	-0.019	0.009	0.026
	(0.07)	(0.07)	(0.06)	(0.05)
Male	-0.953***	-0.948***	-1.227***	-1.223***
	(0.08)	(0.08)	(0.07)	(0.07)
Public	-0.088***	-0.087***	-0.318***	-0.316***
	(0.03)	(0.03)	(0.02)	(0.02)
Full-time	0.646***	0.638***	1.008***	1.002***
	(0.14)	(0.14)	(0.12)	(0.12)
Constant	0.920***	1.009***	0.898***	0.959***
	(0.12)	(0.13)	(0.11)	(0.11)
R-squared	0.308	0.309	0.517	0.516
N	952	952	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 40 Interdecile ratio ([p90-p10]/p50) - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.051	0.029	-0.054	-0.053
	(0.09)	(0.08)	(0.12)	(0.05)
Recession lag	0.042	0.043	-0.111	0.031
	(0.12)	(0.08)	(0.13)	(0.06)
GDP growth	0.006	0.002	0.001	0.004
	(0.02)	(0.01)	(0.04)	(0.01)
GDP growth lag	0.009	0.014	-0.020	0.007
	(0.02)	(0.02)	(0.06)	(0.01)
RPI	0.005	-0.001	-0.005	0.008
	(0.01)	(0.01)	(0.01)	(0.00)
RPI lag	-0.002	0.003	0.006	-0.005
	(0.01)	(0.00)	(0.01)	(0.00)
Unemp. (au %)	0.032	-0.011	0.023	0.036*
	(0.04)	(0.03)	(0.11)	(0.02)
Unemp. lag	-0.034	0.005	-0.015	-0.034*
	(0.04)	(0.03)	(0.14)	(0.02)
Nat. Min. Wage	-0.074	-0.070	0.135	-0.099**
	(0.09)	(0.07)	(0.19)	(0.05)
Male	-0.948***	-1.215***	-0.948***	0.004
	(0.08)	(0.07)	(0.08)	(0.14)
Public	-0.087***	-0.314***	-0.087***	-0.366***
	(0.03)	(0.02)	(0.03)	(0.04)
Full-time	0.637***	0.993***	0.638***	-0.553***
	(0.14)	(0.12)	(0.14)	(0.20)
R-squared	0.297	0.509	0.299	0.493
N	952	701	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 41 Interquartile ratio ([p75-p25]/p50) - Effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		-0.006		-0.007
		(0.03)		(0.01)
Recession lag		0.004		-0.001
		(0.03)		(0.01)
GDP growth	0.004	0.003	0.003	0.002
	(0.00)	(0.01)	(0.00)	(0.00)
GDP growth lag	-0.001	0.000	-0.001	-0.001
	(0.00)	(0.01)	(0.00)	(0.00)
RPI	-0.001	-0.001	0.000	0.000
	(0.00)	(0.00)	(0.00)	(0.00)
RPI lag	0.002	0.002	0.001	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Unemp. (au %)	-0.003	-0.001	-0.001	-0.001
	(0.01)	(0.01)	(0.00)	(0.01)
Unemp. lag	0.000	-0.001	0.002	0.002
	(0.01)	(0.01)	(0.01)	(0.01)
Nat. Min. Wage	-0.040	-0.041	-0.037***	-0.036**
	(0.03)	(0.03)	(0.01)	(0.01)
1999 Dummy	-0.019	-0.020	-0.012	-0.011
	(0.04)	(0.04)	(0.02)	(0.02)
Male	-0.540***	-0.540***	-0.144**	-0.143*
	(0.05)	(0.05)	(0.07)	(0.07)
Public	0.066***	0.066***	-0.149***	-0.149***
	(0.02)	(0.02)	(0.02)	(0.02)
Full-time	0.299***	0.299***	-0.396***	-0.398***
	(0.07)	(0.08)	(0.10)	(0.10)
Constant	0.515***	0.511***	0.930***	0.932***
	(0.06)	(0.07)	(0.09)	(0.09)
R-squared	0.316	0.314	0.349	0.348
N	952	952	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 42 Interquartile ratio ([p75-p25]/p50) - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	-0.006		0.003	
	(0.03)		(0.02)	
Recession lag	0.004		0.011	
	(0.03)		(0.03)	
1980 Dummy		0.015		0.020
		(0.04)		(0.04)
1981 Dummy		0.025		0.036
		(0.04)		(0.04)
1991 Dummy		0.006		0.015
		(0.04)		(0.03)
2008 Dummy		-0.036		-0.030
		(0.03)		(0.03)
2009 Dummy		-0.075		-0.065
		(0.07)		(0.06)
GDP growth	0.003	-0.003	0.001	-0.007
	(0.01)	(0.01)	(0.01)	(0.01)
GDP growth lag	0.000	-0.002	0.002	0.001
	(0.01)	(0.01)	(0.01)	(0.00)
RPI	-0.001	-0.004	0.000	-0.003
	(0.00)	(0.00)	(0.00)	(0.00)
RPI lag	0.002	0.006	0.001	0.004
	(0.00)	(0.00)	(0.00)	(0.00)
Unemp. (au %)	-0.001	-0.011	-0.004	-0.014
	(0.01)	(0.01)	(0.01)	(0.01)
Unemp. lag	-0.001	0.009	0.006	0.017*
	(0.01)	(0.01)	(0.01)	(0.01)
Nat. Min. Wage	-0.041	-0.031	-0.004	0.011
	(0.03)	(0.03)	(0.02)	(0.02)
1999 Dummy	-0.020	-0.021	0.009	0.015
	(0.04)	(0.04)	(0.03)	(0.03)
Male	-0.540***	-0.536***	-0.670***	-0.668***
	(0.05)	(0.05)	(0.04)	(0.04)
Public	0.066***	0.066***	-0.036***	-0.035***
	(0.02)	(0.02)	(0.01)	(0.01)
Full-time	0.299***	0.294***	0.501***	0.499***
	(0.08)	(0.08)	(0.06)	(0.06)
Constant	0.511***	0.552***	0.413***	0.445***
	(0.07)	(0.07)	(0.06)	(0.06)
R-squared	0.314	0.315	0.486	0.487
N	952	952	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 43 Interquartile ratio ([p75-p25]/p50) - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-0.009	0.002	0.003	-0.010
	(0.05)	(0.04)	(0.07)	(0.03)
Recession lag	-0.016	0.020	-0.073	-0.018
	(0.07)	(0.04)	(0.07)	(0.03)
GDP growth	-0.002	-0.000	0.002	-0.003
	(0.01)	(0.01)	(0.02)	(0.00)
GDP growth lag	-0.001	0.003	-0.015	-0.001
	(0.01)	(0.01)	(0.03)	(0.01)
RPI	-0.001	0.001	-0.006	0.001
	(0.01)	(0.00)	(0.01)	(0.00)
RPI lag	0.002	-0.000	0.007	0.000
	(0.00)	(0.00)	(0.01)	(0.00)
Unemp. (au %)	-0.000	-0.001	-0.007	0.002
	(0.02)	(0.02)	(0.06)	(0.01)
Unemp. lag	-0.002	0.002	0.013	-0.001
	(0.02)	(0.02)	(0.08)	(0.01)
Nat. Min. Wage	-0.048	-0.057*	0.041	-0.062**
	(0.05)	(0.03)	(0.10)	(0.03)
Male	-0.536***	-0.662***	-0.536***	-0.119
	(0.05)	(0.04)	(0.05)	(0.07)
Public	0.067***	-0.033***	0.067***	-0.145***
	(0.02)	(0.01)	(0.02)	(0.02)
Full-time	0.292***	0.492***	0.292***	-0.479***
	(0.08)	(0.06)	(0.08)	(0.11)
R-squared	0.303	0.479	0.306	0.356
N	952	701	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 44 Growth in interdecile ratio, The effect of recession using a dummy variable, 28 SICs

	OLS	OLS	Industry fixed effects	Industry fixed effects
	b/se	b/se	b/se	b/se
Recession		2.877**		2.786**
		(1.41)		(1.42)
Recession lag		1.706		1.903
		(1.44)		(1.44)
GDP growth	0.013	0.510*	0.023	0.522*
	(0.21)	(0.30)	(0.21)	(0.30)
GDP growth lag	0.523**	0.700*	0.510**	0.732*
	(0.23)	(0.37)	(0.23)	(0.38)
RPI	-0.075	-0.097	-0.071	-0.088
	(0.12)	(0.13)	(0.12)	(0.13)
RPI lag	0.084	0.109	0.080	0.101
	(0.12)	(0.13)	(0.12)	(0.13)
Unemp. (au %)	1.268***	1.212**	1.251***	1.234**
	(0.47)	(0.53)	(0.47)	(0.53)
Unemp. lag	-1.023**	-1.047*	-0.967*	-1.032*
	(0.50)	(0.57)	(0.51)	(0.57)
Nat. Min. Wage	-0.840	-1.295	-0.625	-1.109
	(1.36)	(1.40)	(1.38)	(1.42)
1999 Dummy	-2.006	-2.677	-1.736	-2.455
	(1.85)	(1.90)	(1.86)	(1.91)
Male	0.374	0.247	-19.552***	-20.298***
	(2.38)	(2.38)	(7.24)	(7.25)
Public	0.338	0.321	2.760	2.696
	(0.87)	(0.86)	(1.93)	(1.93)
Full-time	1.543	1.751	-6.417	-5.053
	(3.92)	(3.92)	(10.35)	(10.35)
Constant	-4.079	-5.962*	15.330*	12.633
	(3.20)	(3.55)	(8.52)	(8.66)
R-squared	0.010	0.013	-0.006	-0.002
N	952	952	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 45 Growth in interdecile ratio - Effect of multiple recession dummies and weighting by number of settlements, 28 SICs

	OLS	OLS	OLS weights	OLS weights
	b/se	b/se	b/se	b/se
Recession	2.877**		2.611***	
	(1.41)		(0.75)	
Recession lag	1.706		1.692*	
	(1.44)		(0.86)	
1980 Dummy		2.109		2.939**
		(2.28)		(1.33)
1981 Dummy		8.410***		3.645***
		(2.01)		(1.18)
1991 Dummy		2.130		1.962*
		(2.08)		(1.05)
2008 Dummy		-0.350		1.824*
		(1.77)		(0.97)
2009 Dummy		0.809		-1.375
		(3.54)		(1.89)
GDP growth	0.510*	0.082	0.325*	-0.190
	(0.30)	(0.42)	(0.18)	(0.23)
GDP growth lag	0.700*	0.530**	0.428**	0.205
	(0.37)	(0.26)	(0.20)	(0.16)
RPI	-0.097	-0.236	-0.066	-0.251**
	(0.13)	(0.19)	(0.07)	(0.10)
RPI lag	0.109	0.245	0.076	0.258***
	(0.13)	(0.19)	(0.07)	(0.10)
Unemp. (au %)	1.212**	0.509	0.070	-0.419
	(0.53)	(0.57)	(0.29)	(0.31)
Unemp. lag	-1.047*	-0.360	0.119	0.693**
	(0.57)	(0.61)	(0.32)	(0.34)
Nat. Min. Wage	-1.295	-0.850	-0.757	-0.048
	(1.40)	(1.46)	(0.75)	(0.77)
1999 Dummy	-2.677	-2.675	-2.553***	-2.171**
	(1.90)	(1.89)	(0.95)	(0.94)
Male	0.247	0.392	0.583	0.605
	(2.38)	(2.36)	(1.21)	(1.22)
Public	0.321	0.331	-0.382	-0.360
	(0.86)	(0.86)	(0.40)	(0.40)
Full-time	1.751	1.560	1.454	1.443
	(3.92)	(3.90)	(1.99)	(1.99)
Constant	-5.962*	-3.135	-5.081***	-2.472
	(3.55)	(3.66)	(1.87)	(1.94)
R-squared	0.013	0.025	0.077	0.077
N	952	952	701	701

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 46 Growth in interdecile ratio - Year fixed effects (not shown), 28 SICs

	OLS	OLS weights	OLS Partial	Industry fixed Effects
	b/se	b/se	b/se	b/se
Recession	-2.096	2.424*	-1.562	-2.051
	(2.55)	(1.28)	(3.52)	(2.55)
Recession lag	3.496	-2.097*	3.537	3.476
	(3.39)	(1.22)	(3.64)	(3.41)
GDP growth	0.244	-0.072	0.656	0.234
	(0.45)	(0.21)	(1.03)	(0.45)
GDP growth lag	0.765	-0.009	2.530	0.795
	(0.62)	(0.27)	(1.57)	(0.63)
RPI	0.590**	-0.175**	0.193	0.569**
	(0.26)	(0.08)	(0.28)	(0.26)
RPI lag	-0.520**	0.132*	-0.199	-0.501**
	(0.23)	(0.08)	(0.28)	(0.23)
Unemp. (au %)	3.971***	-0.415	6.730**	3.873***
	(1.14)	(0.51)	(3.23)	(1.14)
Unemp. lag	-3.468***	0.553	-5.863	-3.375***
	(1.03)	(0.54)	(3.94)	(1.03)
Nat. Min. Wage	-4.157	3.186***	7.889	-4.065
	(2.67)	(1.07)	(5.29)	(2.68)
Male	0.344	0.660	0.354	-18.995***
	(2.36)	(1.15)	(2.36)	(7.24)
Public	0.297	-0.419	0.300	2.509
	(0.85)	(0.38)	(0.86)	(1.92)
Full-time	1.622	1.395	1.619	-5.896
	(3.89)	(1.89)	(3.89)	(10.55)
R-squared	0.036	0.180	0.034	0.020
N	952	701	952	952

Coefficient with standard error in parenthesis. Asterisks show significance level. Includes dummies for each year although some are omitted due to collinearity. Partial omits year dummies for periods covered by recession and national minimum wage dummies.

* p<0.10, ** p<0.05, *** p<0.01

Table 47 Settlements, The effect of different weights, 28 SICs

	OLS	Weight by number	Weight by employees	
	b/se	b/se	b/se	
Recession	0.455	0.703**	-0.597***	
	(0.30)	(0.32)	(0.19)	
Recession lag	-0.522	-0.304	-0.816**	
	(0.35)	(0.37)	(0.33)	
GDP growth	-0.560***	-0.476***	-0.314***	
	(0.07)	(0.08)	(0.06)	
GDP growth lag	0.249***	0.186**	0.002	
	(0.08)	(0.09)	(0.05)	
RPI	0.209***	0.310***	0.200***	
	(0.03)	(0.03)	(0.03)	
RPI lag	-0.289***	-0.374***	-0.248***	
	(0.03)	(0.03)	(0.03)	
Unemp. (au %)	-0.637***	-0.425***	0.175*	
	(0.11)	(0.12)	(0.10)	
Unemp. lag	0.328**	0.347**	-0.399***	
	(0.13)	(0.14)	(0.10)	
Nat. Min. Wage	0.909***	1.151***	0.147	
	(0.32)	(0.32)	(0.14)	
1999 Dummy	0.685	1.160***	0.361**	
	(0.43)	(0.41)	(0.18)	
Male	1.170**	0.353	1.814***	
	(0.51)	(0.52)	(0.26)	
Public	-0.028	-0.199	0.153**	
	(0.19)	(0.17)	(0.07)	
Full-time	-1.749**	-0.558	-1.623***	
	(0.84)	(0.85)	(0.37)	
Constant	17.671***	12.723***	12.300***	
	(0.79)	(0.80)	(0.84)	
R-squared	0.825	0.780	0.447	
N	799	701	577	

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 48 Settlements - Effect of multiple recession dummies and different weights, 28 SICs

	OLS	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se	b/se
Recession	0.455			
	(0.30)			
Recession lag	-0.522			
	(0.35)			
1980 Dummy		3.211***	4.610***	4.879**
		(0.47)	(0.55)	(2.29)
1981 Dummy		-0.355	0.324	-0.571
		(0.41)	(0.48)	(1.88)
1991 Dummy		0.244	1.042**	-0.460
		(0.42)	(0.43)	(1.51)
2008 Dummy		0.837**	0.071	-0.558***
		(0.38)	(0.40)	(0.19)
2009 Dummy		3.136***	2.053***	-1.414***
		(0.77)	(0.77)	(0.43)
GDP growth	-0.560***	-0.117	-0.222**	-0.282***
	(0.07)	(0.09)	(0.09)	(0.06)
GDP growth lag	0.249***	0.201***	0.103	0.017
	(0.08)	(0.06)	(0.06)	(0.05)
RPI	0.209***	0.297***	0.343***	0.174***
	(0.03)	(0.04)	(0.04)	(0.03)
RPI lag	-0.289***	-0.370***	-0.402***	-0.217***
	(0.03)	(0.04)	(0.04)	(0.03)
Unemp. (au %)	-0.637***	-0.314***	-0.362***	0.151
	(0.11)	(0.12)	(0.13)	(0.10)
Unemp. lag	0.328**	-0.061	0.263*	-0.365***
	(0.13)	(0.13)	(0.14)	(0.10)
Nat. Min. Wage	0.909***	0.206	0.983***	0.097
	(0.32)	(0.32)	(0.32)	(0.15)
1999 Dummy	0.685	0.197	0.969**	0.280
	(0.43)	(0.41)	(0.38)	(0.18)
Male	1.170**	1.046**	0.246	1.809***
	(0.51)	(0.50)	(0.50)	(0.26)
Public	-0.028	-0.027	-0.189	0.151**
	(0.19)	(0.18)	(0.16)	(0.07)
Full-time	-1.749**	-1.502*	-0.350	-1.613***
	(0.84)	(0.81)	(0.82)	(0.37)
Constant	17.671***	15.864***	11.620***	11.377***
	(0.79)	(0.79)	(0.80)	(0.97)
R-squared	0.825	0.838	0.800	0.449
N	799	799	701	577

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 49 Wage drift, The effect of different weights, 28 SICs

	OLS	Weight by number	Weight by employees	
	b/se	b/se	b/se	
Recession	1.704***	1.518**	-2.560***	
	(0.66)	(0.64)	(0.80)	
Recession lag	0.822	1.060	-1.472	
	(0.76)	(0.74)	(1.39)	
GDP growth	0.094	0.143	-1.035***	
	(0.15)	(0.15)	(0.25)	
GDP growth lag	0.066	0.104	0.034	
	(0.18)	(0.17)	(0.21)	
RPI	0.155**	0.053	-0.045	
	(0.06)	(0.06)	(0.11)	
RPI lag	-0.154**	-0.053	0.028	
	(0.06)	(0.06)	(0.12)	
Unemp. (au %)	0.645***	0.582**	-0.924**	
	(0.25)	(0.25)	(0.40)	
Unemp. lag	-0.557**	-0.519*	0.903**	
	(0.28)	(0.27)	(0.40)	
Nat. Min. Wage	-0.196	-0.398	0.674	
	(0.70)	(0.64)	(0.60)	
1999 Dummy	0.995	1.233	1.644**	
	(0.95)	(0.82)	(0.74)	
Male	-1.347	-2.142**	-4.416***	
	(1.13)	(1.04)	(1.11)	
Public	-0.061	-0.556	-1.201***	
	(0.41)	(0.34)	(0.31)	
Full-time	2.985	3.072*	6.220***	
	(1.84)	(1.70)	(1.56)	
Constant	-2.015	-0.938	4.230	
	(1.72)	(1.60)	(3.54)	
R-squared	0.114	0.084	0.094	
N	799	701	577	

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Table 50 Wage drift - Effect of multiple recession dummies and different weights, 28 SICs

	OLS	OLS	Weight by number	Weight by employees
	b/se	b/se	b/se	b/se
Recession	1.704***			
	(0.66)			
Recession lag	0.822			
	(0.76)			
1980 Dummy		5.192***	4.565***	4.661
		(1.03)	(1.11)	(9.64)
1981 Dummy		3.295***	3.172***	6.797
		(0.91)	(0.98)	(7.92)
1991 Dummy		1.920**	0.222	2.124
		(0.93)	(0.87)	(6.35)
2008 Dummy		-0.604	0.326	-2.534***
		(0.85)	(0.81)	(0.79)
2009 Dummy		-4.644***	-5.385***	-4.547**
		(1.70)	(1.57)	(1.83)
GDP growth	0.094	-0.461**	-0.500***	-0.971***
	(0.15)	(0.21)	(0.19)	(0.25)
GDP growth lag	0.066	-0.179	-0.043	0.080
	(0.18)	(0.13)	(0.13)	(0.21)
RPI	0.155**	-0.164*	-0.265***	-0.154
	(0.06)	(0.09)	(0.08)	(0.13)
RPI lag	-0.154**	0.167*	0.265***	0.158
	(0.06)	(0.09)	(0.08)	(0.14)
Unemp. (au %)	0.645***	-0.147	0.004	-1.057**
	(0.25)	(0.26)	(0.26)	(0.41)
Unemp. lag	-0.557**	0.344	0.116	1.080***
	(0.28)	(0.29)	(0.28)	(0.42)
Nat. Min. Wage	-0.196	0.797	0.102	0.488
	(0.70)	(0.70)	(0.64)	(0.62)
1999 Dummy	0.995	1.062	1.071	1.359*
	(0.95)	(0.90)	(0.78)	(0.75)
Male	-1.347	-1.190	-2.282**	-4.425***
	(1.13)	(1.10)	(1.01)	(1.11)
Public	-0.061	0.031	-0.507	-1.205***
	(0.41)	(0.40)	(0.33)	(0.31)
Full-time	2.985	2.890	3.363**	6.240***
	(1.84)	(1.79)	(1.66)	(1.56)
Constant	-2.015	0.425	2.086	0.705
	(1.72)	(1.75)	(1.61)	(4.09)
R-squared	0.114	0.163	0.137	0.094
N	799	799	701	577

Coefficient with standard error in parenthesis. Asterisks show significance level.

* p<0.10, ** p<0.05, *** p<0.01

Figure 1. Settlements and earnings and RPI by year on the same figure in aggregate

Annual data on sett, hexo and RPI (1977 - 2010)

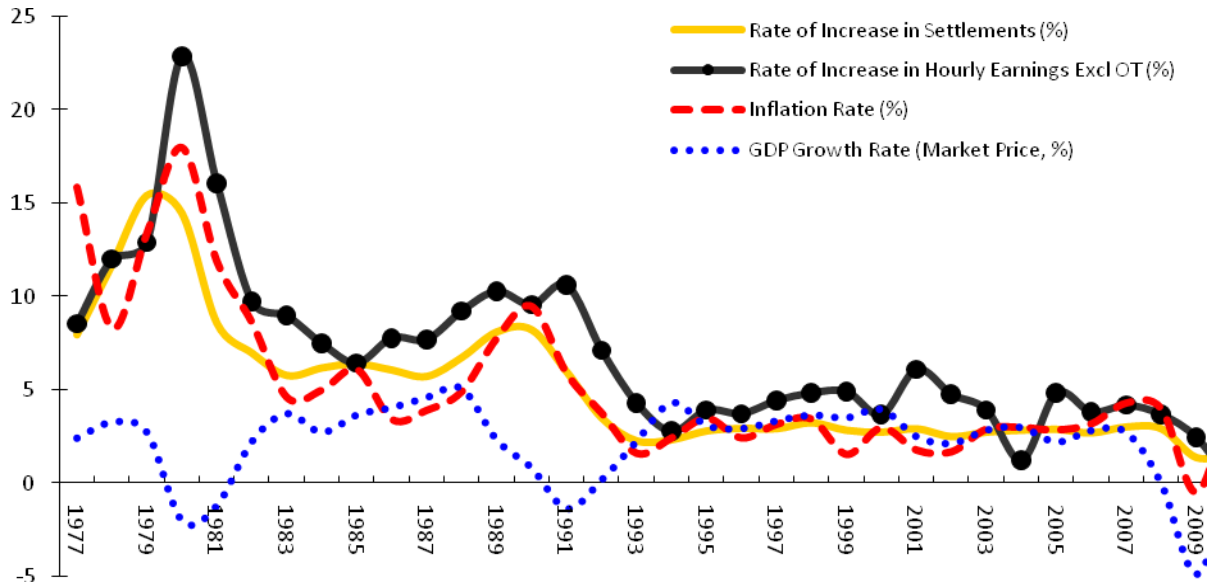


Figure 2 Annual data on sett, gpay and RPI (1977 - 2010)

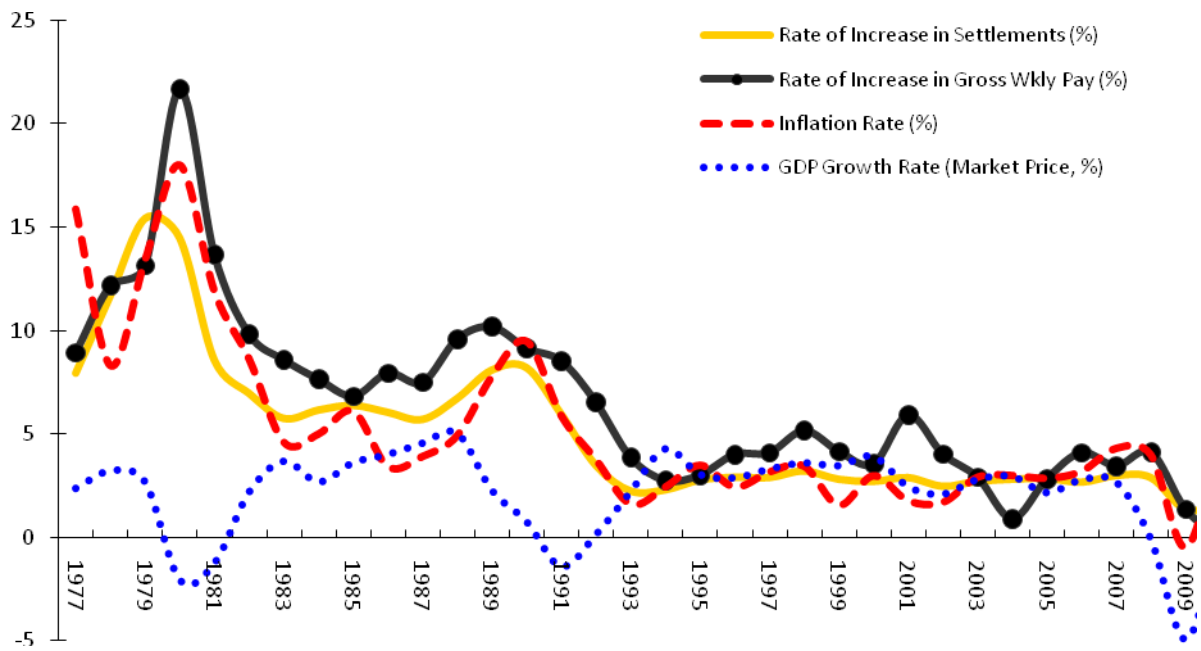


Figure 3. Settlements and earnings and RPI by quarter on the same figure in aggregate

Quarterly data on sett, he and RPI (1977Q1 - 2010Q2)

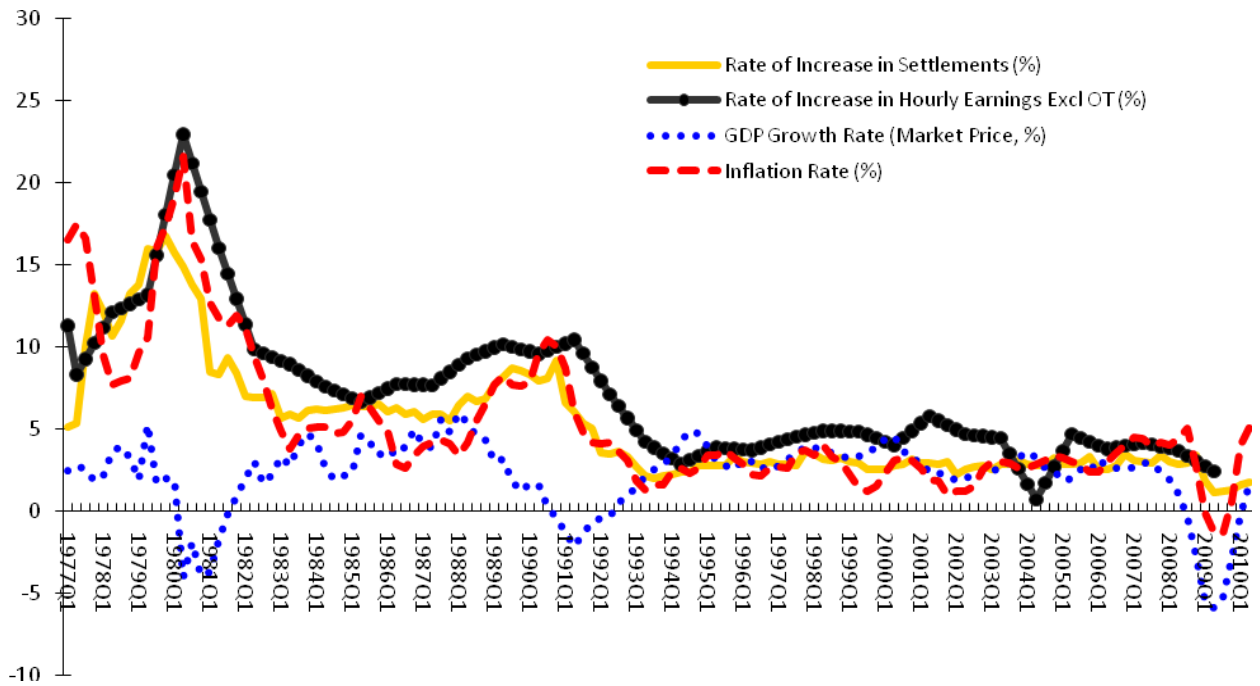


Figure 4 Quarterly data on sett, gpay and RPI (1977Q1 - 2010Q2)

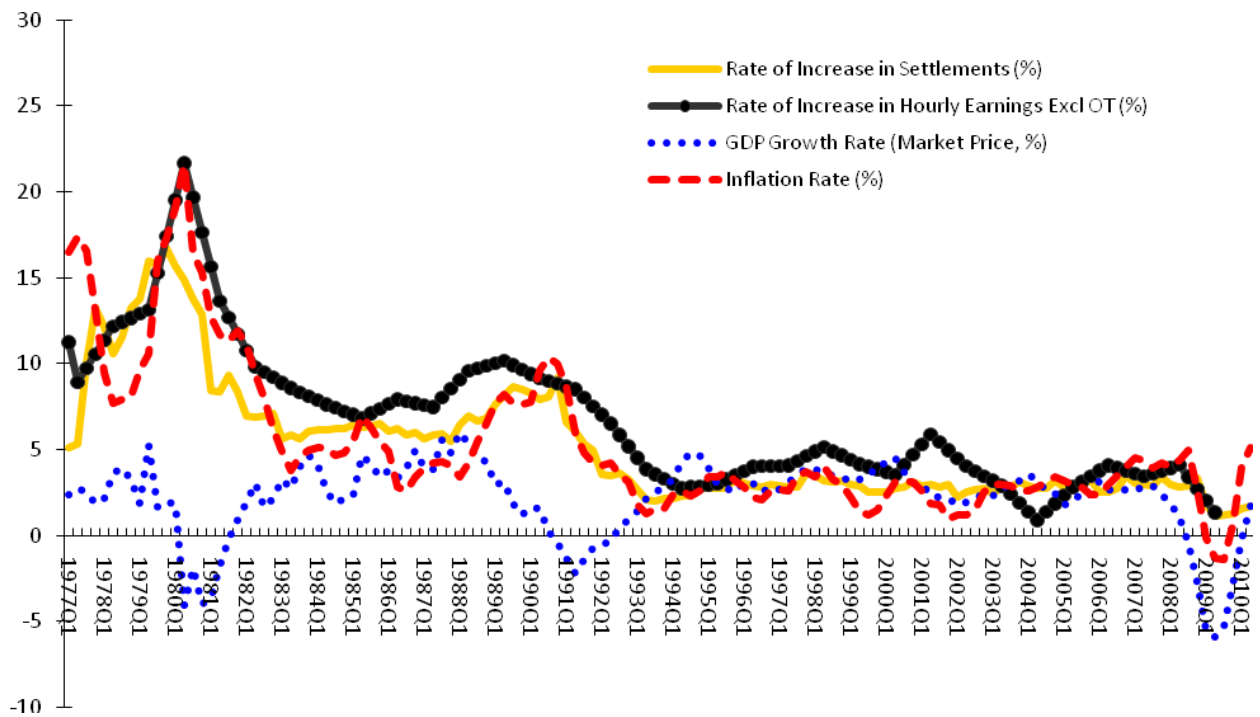


Figure 5 By Year By 16 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Hourly Earnings Incl OT (%)

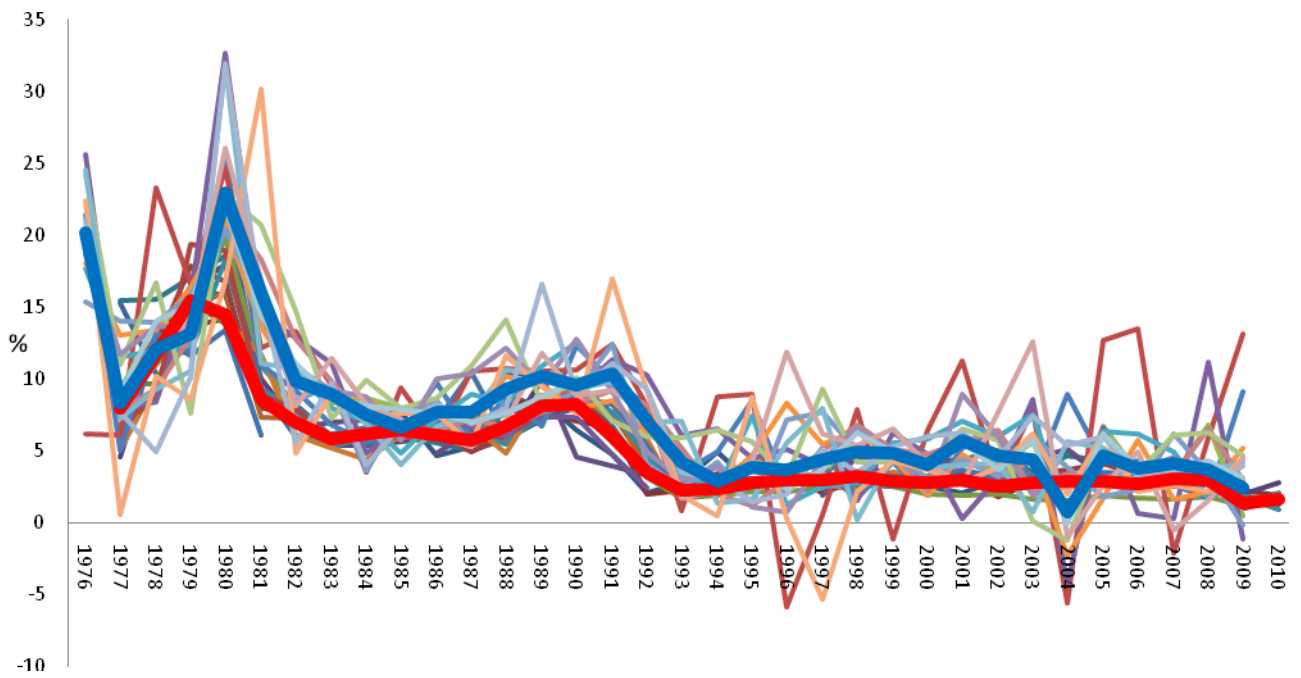
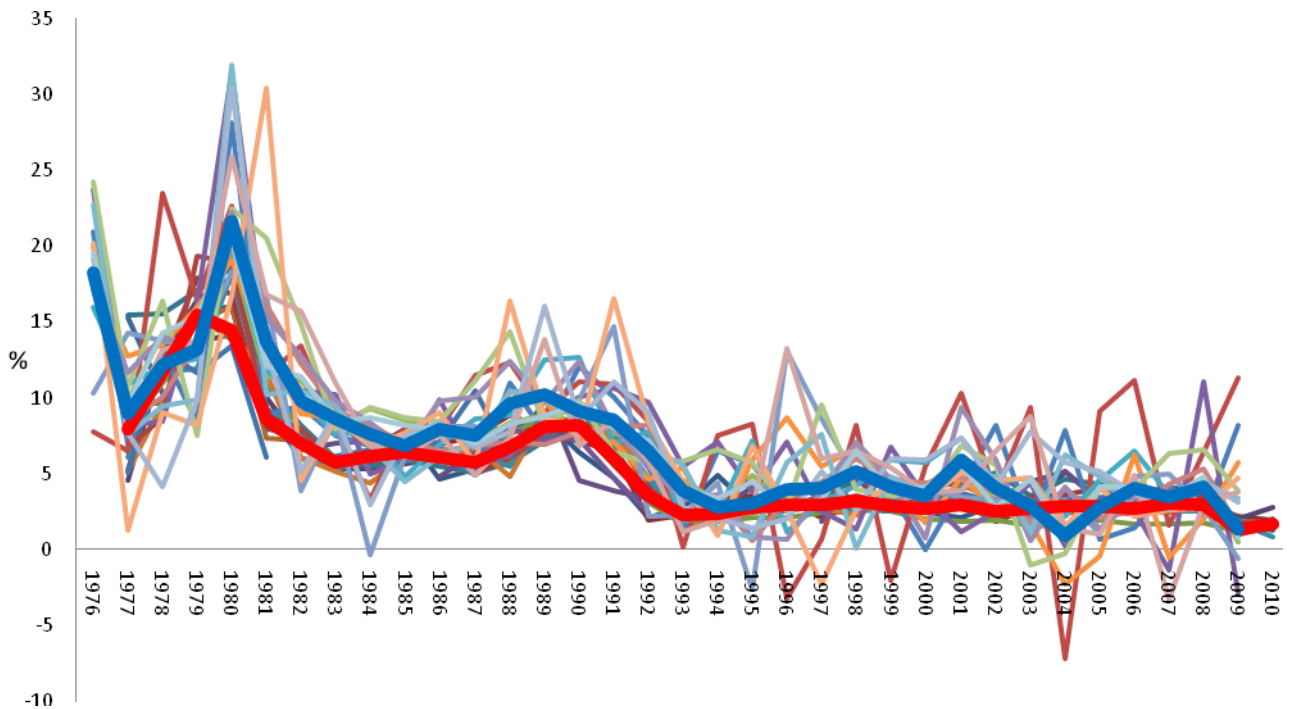


Figure 6 By Year By 16 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Weekly Gross Pay (%)



Legend

- sett_sic1
- sett_sic2
- sett_sic3
- sett_sic4
- sett_sic5
- sett_sic6
- sett_sic7
- sett_sic8
- sett_sic9
- sett_sic10
- sett_sic11
- sett_sic12
- sett_sic13
- sett_sic14
- sett_sic15
- sett_sic16
- sett_production
- earnings (hexo/he/gpay)_sic1
- earnings (hexo/he/gpay)_sic2
- earnings (hexo/he/gpay)_sic3
- earnings (hexo/he/gpay)_sic4
- earnings (hexo/he/gpay)_sic5
- earnings (hexo/he/gpay)_sic6
- earnings (hexo/he/gpay)_sic7
- earnings (hexo/he/gpay)_sic8
- earnings (hexo/he/gpay)_sic9
- earnings (hexo/he/gpay)_sic10
- earnings (hexo/he/gpay)_sic11
- earnings (hexo/he/gpay)_sic12
- earnings (hexo/he/gpay)_sic13
- earnings (hexo/he/gpay)_sic14
- earnings (hexo/he/gpay)_sic15
- earnings (hexo/he/gpay)_production
- earnings (hexo/he/gpay)_whole economy
- sett_whole economy

Figure 7. Settlements and earnings by quarter by 16 SICs on the same figure in aggregate
By Quarter By 16 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Hourly Earnings Incl OT (%)

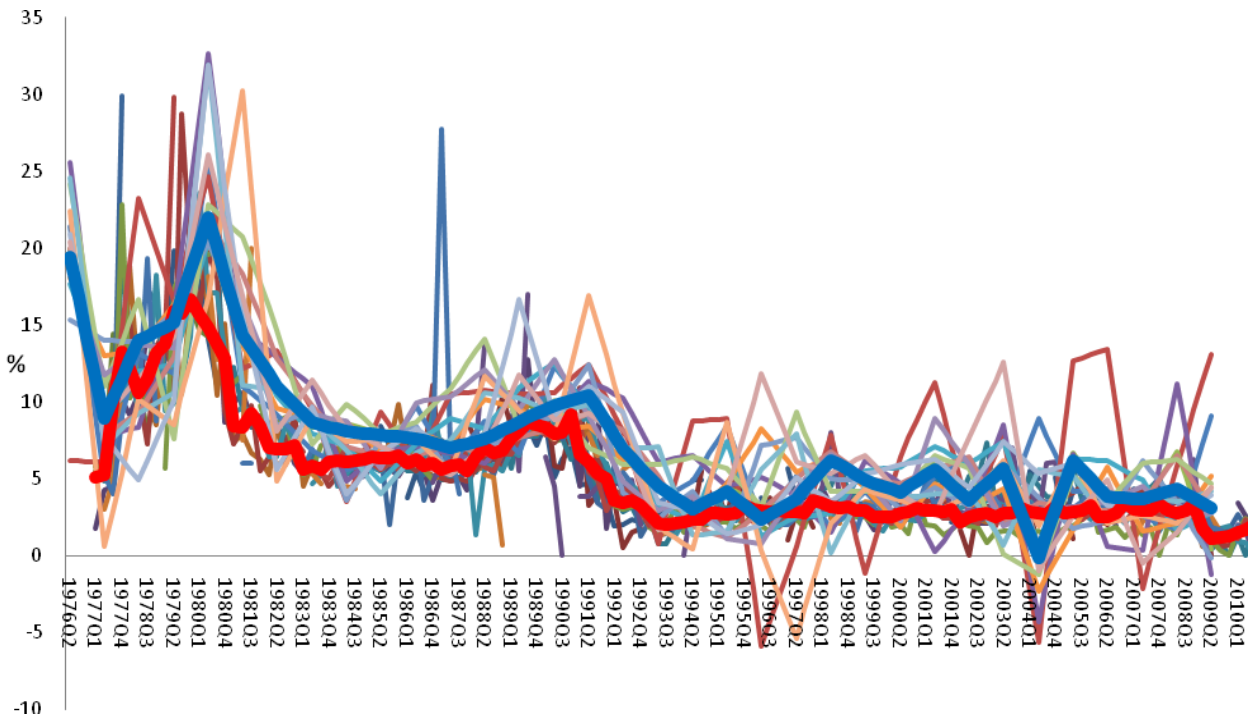
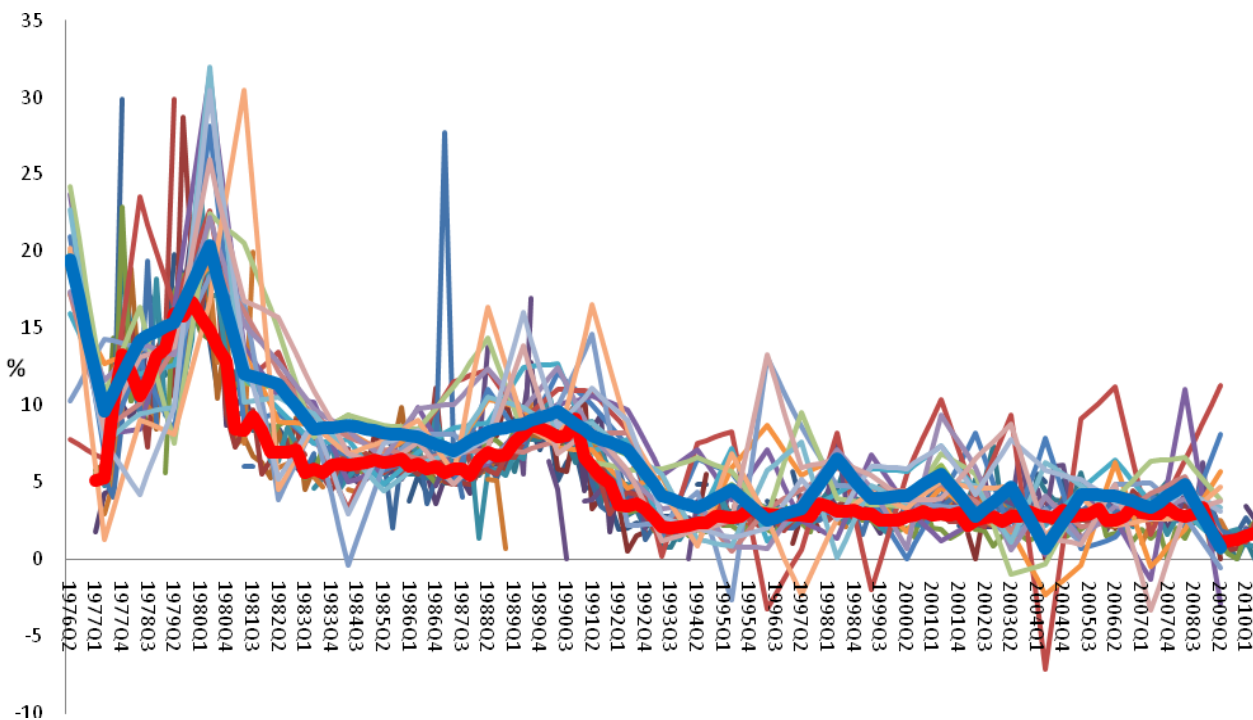


Figure 8 **By Quarter By 16 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Gross Weekly Pay (%)**



Legend

sett_sic1	sett_sic2
sett_sic3	sett_sic4
sett_sic5	sett_sic6
sett_sic7	sett_sic8
sett_sic9	sett_sic10
sett_sic11	sett_sic12
sett_sic13	sett_sic14
sett_sic15	sett_sic16
sett_production	earnings (hexo/he/gpay)_sic1
earnings (hexo/he/gpay)_sic2	earnings (hexo/he/gpay)_sic3
earnings (hexo/he/gpay)_sic4	earnings (hexo/he/gpay)_sic5
earnings (hexo/he/gpay)_sic6	earnings (hexo/he/gpay)_sic7
earnings (hexo/he/gpay)_sic8	earnings (hexo/he/gpay)_sic9
earnings (hexo/he/gpay)_sic10	earnings (hexo/he/gpay)_sic11
earnings (hexo/he/gpay)_sic12	earnings (hexo/he/gpay)_sic13
earnings (hexo/he/gpay)_sic14	earnings (hexo/he/gpay)_sic15
earnings (hexo/he/gpay)_sic16	earnings (hexo/he/gpay)_production
sett_whole economy	earnings (hexo/he/gpay)_whole economy

Figure 9. Settlements and earnings by year by 30 SICs on the same figure in aggregate
By Year By 30 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Hourly Earnings Incl OT (%)

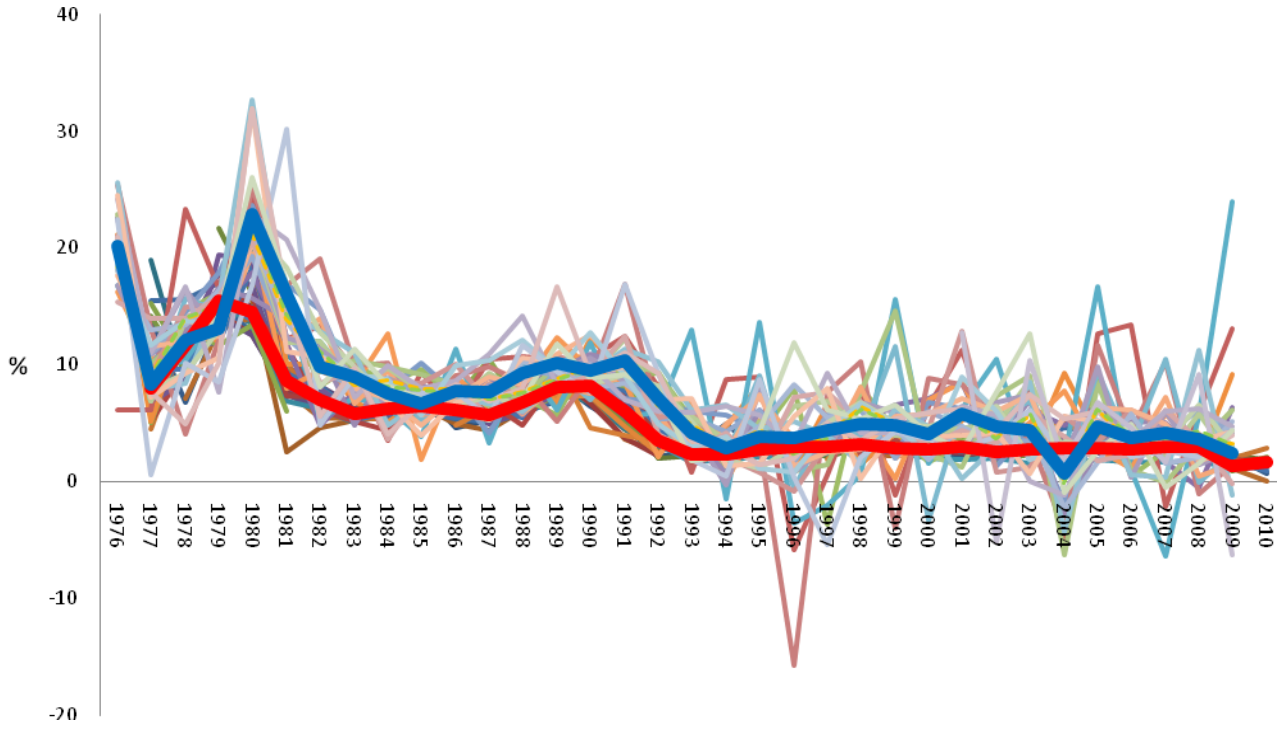
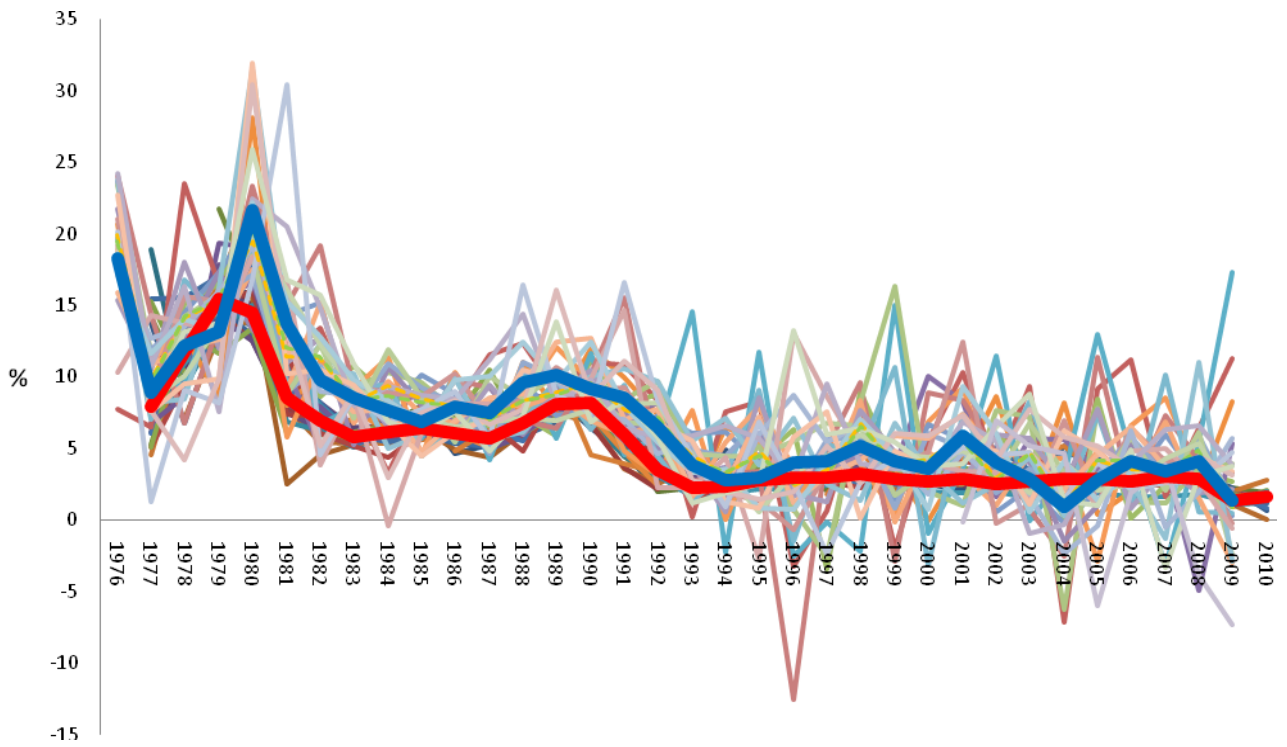


Figure 10 By Year By 30 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Gross Weekly Pay (%)



Legend

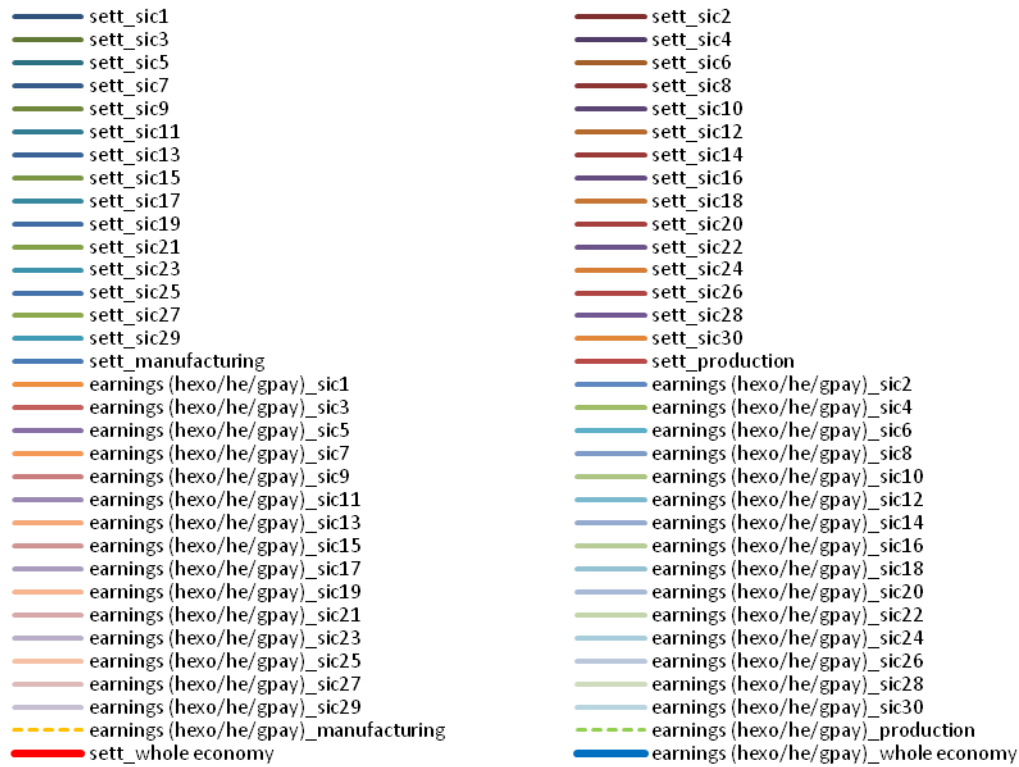


Figure 11. Settlements and earnings by quarter by 30 SICs on the same figure in aggregate

By Quarter By 30 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Hourly Earnings Incl OT (%)

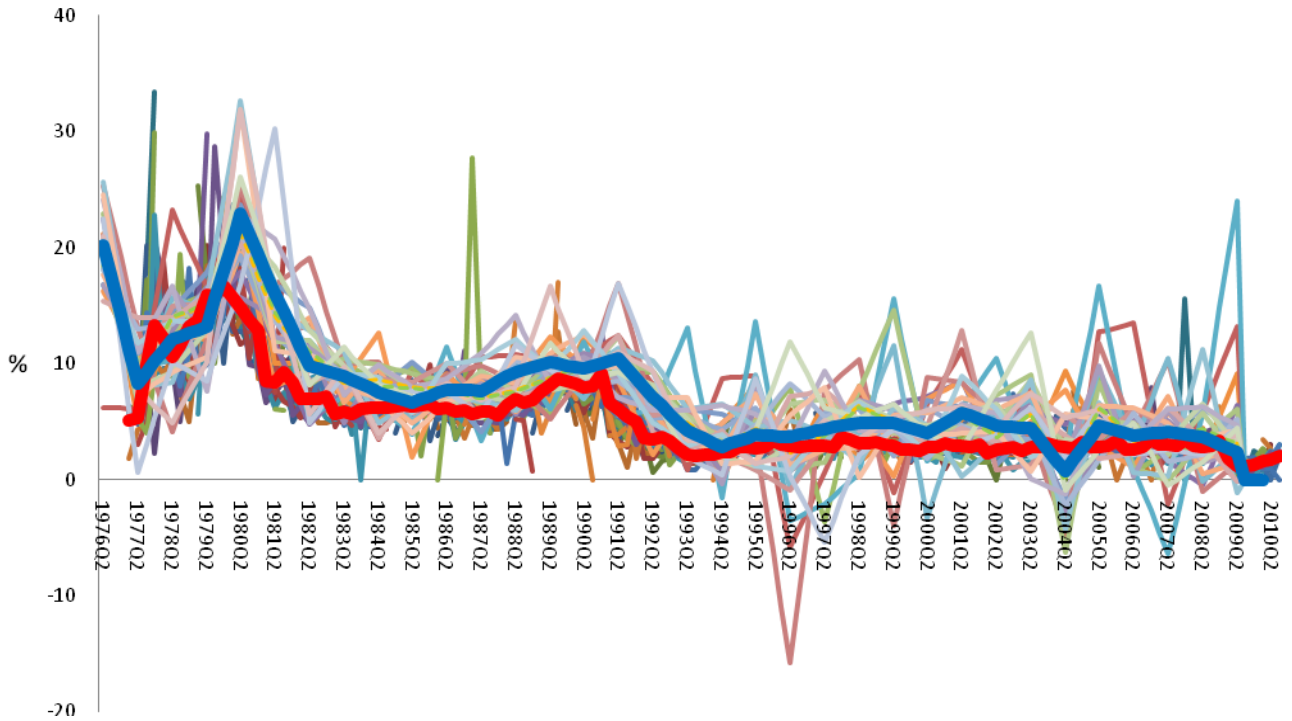
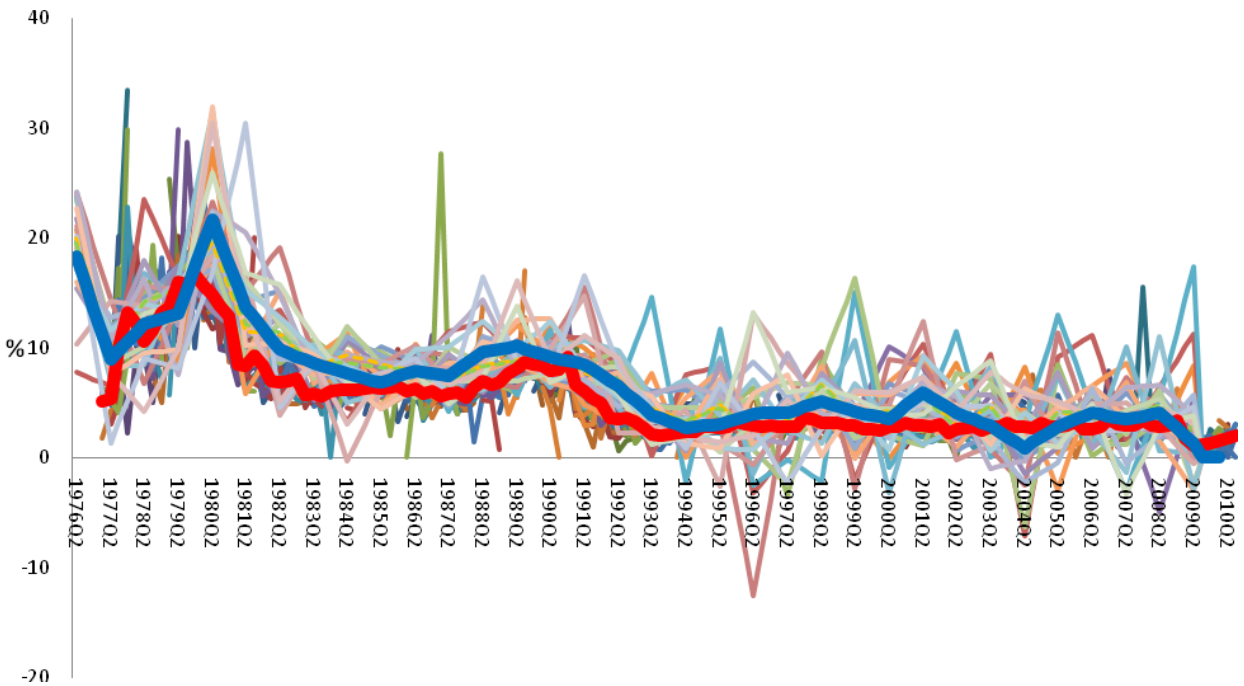
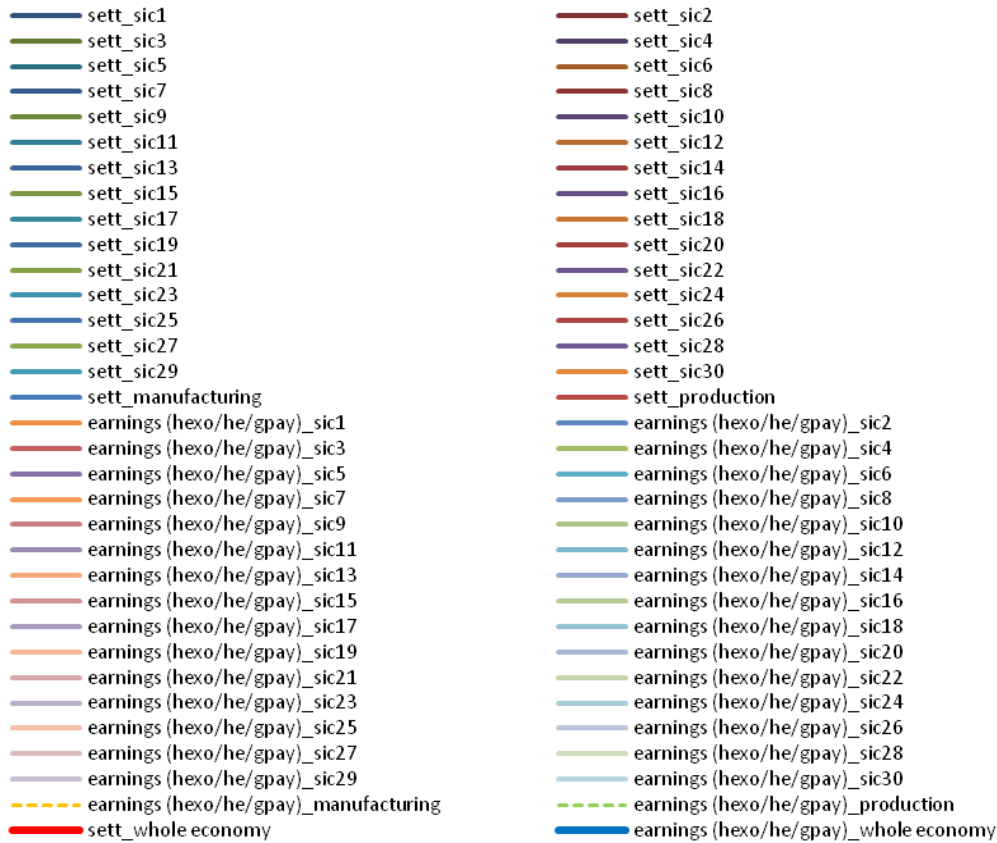


Figure 12 By Quarter By 30 SICs: Rate of Increase in Settlements (%) and Rate of Increase in Gross Weekly Pay (%)



Legend



DATA APPENDIX

1. Data of Settlements

1.1 Data Sources

Raw micro settlement data at firm level is available from Incomes Data Services (IDS), Industrial Relations Services (IRS) and CBI Pay Settlements Survey. It is extracted to perform a microeconomic analysis of the distribution of pay settlements, and is used to construct aggregate data of pay settlements over time and across industries.

IDS pay settlements data 1977-2010

An electronic database of pay settlements 1994-2010 is provided by IDS and includes key variables such as the percentage increase in pay settlements, company names, subsectors, number of employees, and effective date of settlements. The historical data prior to 1994 is manually inputted and added to the electronic database from the quarterly reviews (for 1979-1993 data) and the monthly summaries (for 1977-1978 data) published in the IDS Pay Reports (No. 248 to 659).

In cleaning data we carefully check the changes in company names over time so as to obtain a consistent database and map the company names to specific subsectors. The final data has 33,587 observations of pay settlements.

IRS pay settlements data 1984-2009

The IRS data relates to minimum and maximum increase in settlements, industries, number of employees, and date of settlements. We take the average of minimum and maximum increases in settlements to calculate the increase rate of settlements. This data is available for 16 industry groups from 1984 to 2009, with 29,623 observations.

CBI Pay Settlements Survey 1979-1992

From the CBI pay settlements data we extract variables including increase in settlements, industries, number of employees, and date of settlements, and obtain 32,648 observations of pay settlements.

1.2 Reconciled Index of Industries

The main problem when we combine the above three data sets is that they are based on different classifications of industries. The IDS data is classified as 64 subsectors, and in IRS data there are 17 sectors. CBI data defines industries based on SIC 1968. To reconcile different definitions of industry groups we use SIC 1992/2003⁷ as a benchmark. Sectors in the IRS data are broadly mapped to SIC 1992/2003. In a similar way we define the industry groups in the IDS data based on the information on subsectors; in addition, we refer to the individual company names to double check which specific group a company belongs to. For CBI data we have to map SIC 1968 to SIC 1992/2003 based on RLAB's works on mapping different SICs.⁸ With the industries converted to a consistent classification, we have a data set of 16 industries, with manufacturing industries as one sector. To facilitate a more detailed analysis by industry, we construct a

⁷ Source: UK Standard Industrial Classification of Economic Activities UK SIC(92)

http://www.statistics.gov.uk/methods_quality/sic/contents.asp

⁸ Sources:

http://rlab.lse.ac.uk/data/reference/docs/SIC80_to_SIC92.xls and http://rlab.lse.ac.uk/data/reference/docs/SIC68_to_SIC80.xls

second version of SICs by replacing the manufacturing industry with 14 individual manufacturing sectors, again based on SIC 1992/2003. Details of the two versions of SICs are shown in Table 1. Tables 2 and 3 show how we map the sectors in IDS and IRS to SIC 1992/2003, respectively.

1.3 Aggregate Panel Data of Pay Settlements

Having got the micro data we are able to construct a panel data on pay settlements from 1977 to 2010 for 16 or 30 sectors. The time dimension of the panel data runs either by year from 1977 to 2010, or by quarter from the first quarter in 1975 to the second quarter in 2010. With the two classifications of industries, we have four versions of panel data sets: by year and by 16 sectors, by quarter and by 16 sectors, by year and by 30 sectors, and by quarter and by 30 sectors.

2. Data of Earnings

2.1 Data Sources

The earnings data is constructed from New Earnings Survey (NES) and Annual Survey of Hours and Earnings (ASHE). Key variables include hourly earnings including overtime, hourly earnings excluding overtime, gross weekly pay and working hours.

2.2 Reconciled Index of Industries

As in the data of settlements, there are different definitions of industries over time in the earnings data. Specifically, raw data is defined on SIC 1968 from 1975 to 1981, SIC 1980 from 1982 to 1992, and SIC 1992 from 1996 to 2009. To solve the problem we reconcile the data by mapping SIC 1968 and SIC 1980 to SIC 1992.

2.3 Aggregate Panel Data of Earnings

The micro data of earnings is aggregated to panel data by time and by sectors, in the same format as the settlements data.

3. Other Data

Other key aggregate data are mainly extracted from statistical publications. The main data sources are ONS statistics and Department of Employment Gazettes. Key variables include productivity, working days lost, trade union density, average earnings index, (long term) unemployment and (long term) employment. See the data dictionary for more details.

Table 1. Definition of Industries

16 SICs		30 SICs	
1	Agriculture, hunting, forestry and fishing	1	Agriculture, hunting and forestry
2	Mining and quarrying	2	Fishing
3	Manufacturing	3	Mining and quarrying
4	Electricity, gas and water supply	04-17	Different Manufacturing industries
5	Construction	18	Electricity, gas and water supply
6	Wholesale and retail etc.	19	Construction
7	Hotels and restaurants	20	Wholesale and retail etc.
8	Transport, storage and communication	21	Hotels and restaurants
9	Financial intermediation	22	Transport, storage and communication
10	Real estate, renting and business activities	23	Financial intermediation
11	Public administration and defence; compulsory social security	24	Real estate, renting and business activities
12	Education	25	Public administration and defence; compulsory social security
13	Health and social work	26	Education
14	Other community, social and personal service activities	27	Health and social work
15	Private households with employed persons	28	Other community, social and personal service activities
16	Extra-territorial organisations and bodies	29	Private households with employed persons
		30	Extra-territorial organisations and bodies

Table 2. Subsectors in IDS and SIC 1992/2003

Subsector in IDS	SIC 1992/2003
Advocacy	N Health and social work
Agriculture & forestry	A Agriculture, hunting and forestry
Animal welfare	<i>Mapped to SIC 1992/2003 based on individual company names</i>
Business services	K Real estate, renting and business activities
Call centres	K Real estate, renting and business activities
Care services & housing	N Health and social work
Catering	H Hotels and restaurants
Central government	L Public administration and defence; compulsory social security
Chemicals, pharmaceuticals & oil	DG Manufacture of chemicals, chemical products and man-made fibres
Cleaning	K Real estate, renting and business activities
Construction	F Construction
Culture	O Other community, social and personal service activities
Domestic services	O Other community, social and personal service activities
Education	M Education
Employment services	N Health and social work
Energy & water	E Electricity, gas and water supply
Engineering services	DL Manufacture of electrical and optical equipment
Engineering: Aerospace & defence	DM Manufacture of transport equipment
Engineering: Electronics	DL Manufacture of electrical and optical equipment
Engineering: General	DN Manufacturing not elsewhere classified
Engineering: Rail infrastructure	DM Manufacture of transport equipment
Engineering: Shipbuilding	DM Manufacture of transport equipment
Engineering: Vehicles & components	DM Manufacture of transport equipment
Environment	O Other community, social and personal service activities
Fast food, pubs & restaurants	H Hotels and restaurants
Financial services	J Financial intermediation

Fire & police	L	Public administration and defence; compulsory social security
Food, drink & tobacco	DA	Manufacture of food products, beverages and tobacco
Glass, pottery & ceramics	DI	Manufacture of other non-metallic mineral products
Health	N	Health and social work
Helplines, advice, counselling	N	Health and social work
Hotels	H	Hotels and restaurants
IT	I	Transport, storage and communication
Leisure		<i>Mapped to SIC 1992/2003 based on individual company names</i>
Local government	L	Public administration and defence; compulsory social security
Media	I	Transport, storage and communication
Mining & quarrying	C	Mining and quarrying
NGOs	O	Other community, social and personal service activities
Nurseries	N	Health and social work
Other manufacturing	DN	Manufacturing not elsewhere classified
Other membership, research & regulatory	O	Other community, social and personal service activities
Other nurseries, housing & welfare	N	Health and social work
Paper & packaging	DE	Manufacture of pulp, paper and paper products; publishing and printing
Pharmaceutical services	O	Other community, social and personal service activities
Plant hire	F	Construction
Post office	I	Transport, storage and communication
Professional services	O	Other community, social and personal service activities
Property	L	Public administration and defence; compulsory social security
Public sector	L	Public administration and defence; compulsory social security
Recreation	O	Other community, social and personal service activities
Research councils/institutes & research funds	O	Other community, social and personal service activities
Retail	G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods

Security	<i>Mapped to SIC 1992/2003 based on individual company names</i>	
Telecommunications	I	Transport, storage and communication
Textiles, clothing & footwear	DB	Manufacture of textiles and textile products
Timber & furniture	DD	Manufacture of wood and wood products
Trade unions & professional associations	O	Other community, social and personal service activities
Transport: Air	I	Transport, storage and communication
Transport: Buses	I	Transport, storage and communication
Transport: Rail	I	Transport, storage and communication
Transport: Road & distribution	I	Transport, storage and communication
Transport: Shipping & ports	I	Transport, storage and communication
Waste management	O	Other community, social and personal service activities
Wholesale	G	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods

Table 3. IRS Industries and SIC 1992/2003

IRS Industries	SIC 1992/2003
Agriculture, hunting and forestry	A Agriculture, hunting and forestry
Chemicals & pharmaceuticals	DG Manufacturing
Construction	F Construction
Electricity, gas and water	E Electricity, gas and water supply
Engineering and metals	DJ Manufacturing
Finance	J Financial intermediation
Food, drink and tobacco	DA Manufacturing
General manufacturing (including bricks, cement, ceramics, glass, timber product)	DN Manufacturing
General services (including radio and television, security etc)	O Other community, social and personal service activities
Hotels and catering	H Hotels and restaurants
Mining and quarrying	C Mining and quarrying
Not for profit	O Other community, social and personal service activities
Paper and printing	DE Manufacturing
Public services	L Public administration and defence; compulsory social security
Retail and wholesale	G Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods
Textiles	DB Manufacturing
Transport and communication	I Transport, storage and communication