

Why Unemployment in the United Kingdom did not Increase as much as Expected During the Great Recession?

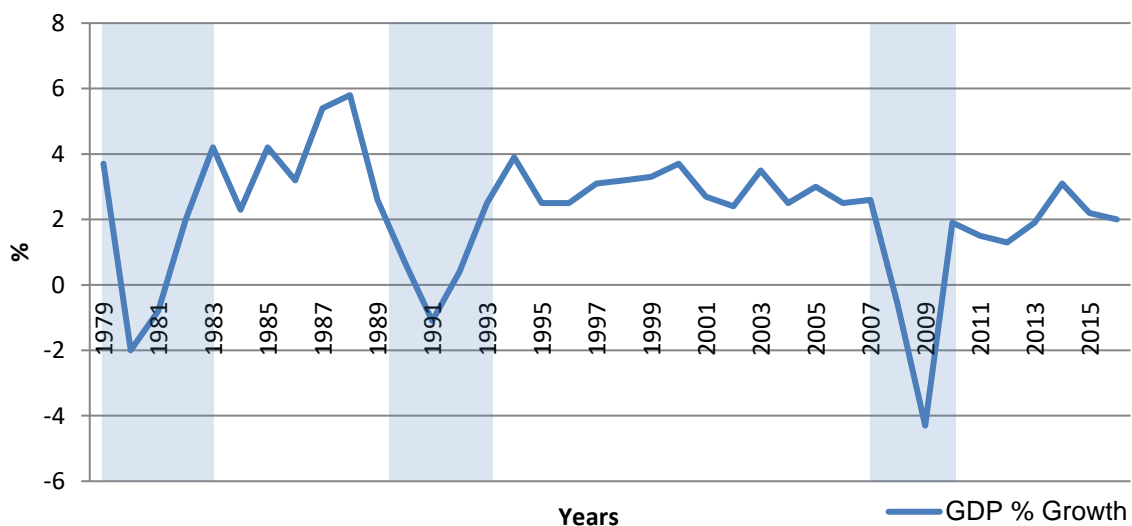
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Following the recent financial crisis, the United Kingdom came up against the worst diminutions of Gross Domestic Product compared to past experience. However, patterns of unemployment have surprisingly been lower than expected. This dissertation is commissioned to demonstrate the reasons why unemployment did not increase as much as expected during the Great Recession compared to past experience. The main reasons presented in the literature were: the increase in labour flexibility, the reduction on productivity and macroeconomic policies. This paper goes further and examines the effect of bank rescue plan as a possible explanation to the unemployment patterns in 2008. The main conclusions to be derived is that, even though all motives can be partly supported to some extent, macro policies and flexibility are mostly supported by evidence as the motives for unemployment trending emphasizing the important role of policymakers during the Great Recession. It is also suggested that bank rescue plan had mainly short run and non-sustainable effects.

1. Introduction

The impact of 2008 financial crisis has been intensively analysed in the literature as it has been the worst recession since Great Depression. The financial crisis was initiated by the sub-prime mortgage crisis in the United States (US), and was rapidly spread internationally because of the high interconnection of financial sector among countries (Allen and Carletti, 2010). Although, in this recession, the United Kingdom (UK) came up against the worst diminutions of Gross Domestic Product (GDP) compared to past experiences, patterns of unemployment have surprisingly been lower than expected (Tetlow and Emmerson, 2015). This dissertation is commissioned to analyse the main motives as to why unemployment did not increase as expected during the financial crisis compared to previous recessions.

Figure 1. Percentage Growth in the UK GDP 1979-2016

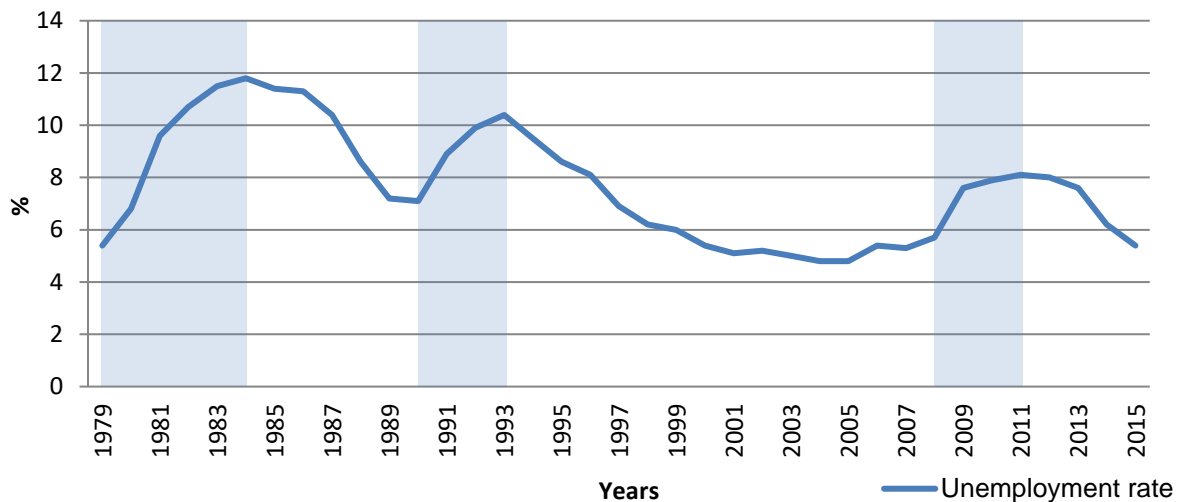


Source: Own Calculations (OC)-Office for National Statistics (ONS), (2017a)

Figure 1 shows the GDP growth, with the shaded areas being the four years after the initial shock, showing the process of falling into recession but also the recovery. From 1979 to 1980, it decreased by 5.7%, from 1990 to 1991 it declined by 1.8%, whereas from 2007 to 2009 it decreased by 6.9%. GDP data shows the worst economic activity in 2008, falling for two consecutive periods compared to past recessions, generating expectations of high unemployment. Conversely, Figure 2 shows the rate of unemployment with shaded areas illustrating the trending after the initial shock until it peaks. As can be observed, unemployment during 2008 crisis did not increase as previous recessions suggesting that some factors prevented unemployment from increasing during that period. From 1979 to 1984, unemployment increased by 6.4%, from 1990 to 1993 it increased by 3.3%, whereas from 2007 to

2011 it increased only by 2.8%. This surprisingly shows a minimal increase in 2008 compared to previous recessions.

Figure 2. UK Unemployment Rate 1979-2015



Source: OC-ONS, (2017b).

This dissertation will assess the data available to address the five possible explanations of unemployment trends in the 2008 recession. As analysed by literature, the greater flexibility of the UK labour might have contributed to lower unemployment rate. Moreover, degraded labour productivity corresponded for the reduction in GDP explaining the lower need for unemployment to increase during that period (Gregg and Wadsworth, 2010). According to Vaitilingam (2011) better organized policymakers shaped fiscal and monetary policy in a way that prevented unemployment to increase to a great extent. Last but not least, even though the bank rescue plan was given little importance in the literature, it will be analysed in this dissertation with the aim to indicate whether the support of government to banking sector had successfully preserved unemployment lower than expected. This paper will then provide data for each one of the five motives with purpose to indicate which of the possible reasons best fits the UK.

This paper is structured as follows. Chapter 2 reviews the existing literature on the main reasons to the unexpected unemployment in the UK during 2008. Chapter 3 discusses the methodology of this dissertation and presents the main variables to be assessed with the limitations that may reduce the reliability of the data. Chapter 4 consists of the analysis of data and interpretation of results. Finally, Chapter 5 concludes and provides an answer as to why unemployment in the UK did not increase as expected during 2008.

2. Literature Review

The purpose of this chapter is to examine and evaluate the existing literature which analyses the reasons to the unexpected lower unemployment trends in 2008. Theory and empirical evidence is focused on the five motives: flexibility of labour, productivity, macro-policies and finally the bank rescue plan introduced in 2008.

2.1 Theory

Since 1980, there have been many changes that induced flexibility of the UK labour and believed by economists to be a reason for the unexpected unemployment trends in 2008 (Millard, 2015). Most important modifications since 1980 were the decline in density and power of trade unions after Thatcher administration and also the introduction of New Deals in 1998 (Clegg, 2010; Blanchflower and Freeman, 1993). Monastiriotis (2006) indicated an adverse connection between unemployment and the UK labour flexibility. Based on theory of wage and price setting curves, after the slow-down in power of trade unions, workers are no longer protected limiting their ability to demand higher wages. This leads to more flexible markets as firms are able to keep labour in the firm by reducing wages rather than firing them leading to lower unemployment in 2008 (Millard, 2015; Blundell *et al*, 2014; Carlin and Soskice, 2006). Guillaume *et al*, (2012) used a panel data model on a group of countries including the UK from 1985-2008 and indicated that labour market flexibility does reduce unemployment through time. Change in hours worked induced the increase of part-time work and self-employment; thus, reduces joblessness (Blundell *et al*, 2014; Gregg and Wadsworth, 2010). However, the connection of flexibility and unemployment was criticized by Rodgers (2007) and Vaitilingam (2011) as fractured connection especially for the UK as there are other, less flexible countries with higher employment levels.

Productivity puzzle is another explanation of why unemployment did not increase as expected in contrast to GDP. Theoretically, productivity is the reason for the great fall in output indicating no means for unemployment to increase as expected (Bryson and Forth, 2015). According to Blundell *et al*, (2014), there is positive connection between productivity and earnings because as earnings are reduced; workers are less encouraged to work hard causing a fall in productivity (Bryson and Forth, 2015). In addition, Griffith and Miller (2010) suggested that the reduction in hours worked because of part-time add more to the reduction in productivity. Another long-run explanation is the contraction in capital compared to labour, known as the capital shallowing (Bryson and Forth, 2015). Since cost of labour is reduced, capital now seems more expensive reducing the incentive for investment, causing

a more prolonged reduction in productivity. However, researchers such Bryson and Forth (2015), Barnett *et al* (2014) and Pessoa and Van Reenen (2013), state that there is an error while measuring productivity level as intangible assets are not included in the measurement of GDP causing misrepresentative calculations.

Macroeconomic policies can be considered as a reason for the UK unemployment trends in 2008. Policy makers having experience from previous recessions of 1980s and 1990s were more prepared during the recent recession and able to react wisely by adopting expansionary fiscal policy (Vaitilingam, 2011). Considering the literature, an increase in government expenditure, increases demand for output and, therefore, demand for workers indicating a positive relationship (Hiller, 1991). According to the Okun's law, which is the inverse association between joblessness and output, as GDP increases, unemployment will be reduced providing a significant guidance for policy makers on how to set policies (Stober, 2015). Stockhammer (2016), Akinsoyinu (2015) and Cimadomo and Benassy-Quere (2012) find out that increase government expenditure and reduction in tax revenue, can lead to positive multiplier effect and increase in output and employment leading to stability of the economy during 2008. Crossley *et al* (2014) estimated a positive relationship on output and reduction in Value-Added Tax (VAT) announced in the UK in 2008 as prices were considered to be lower. Nevertheless, Perotti (2002) provides evidence that the effect of fiscal multipliers are declining through time leading to lower impact on unemployment.

During the Great Recession, unconventional monetary policy was used to stimulate the economy and lead to lower unemployment levels. According to Vaitilingam (2011) and Gregg and Wadsworth (2010) expansionary monetary policy did have positive effects on keeping unemployment lower compared to past experience. According to Joyce *et al* (2011), Bank of England (BoE) reduced the interest rate and introduced a program of Quantitative Easing (QE), the buying of financial assets in order to stimulate the economy. Fall in interest rates, reduces the cost of capital, encourages consumption through investment and, thus, reduces unemployment. Weale and Wieladek (2014), Baumeister and Benati (2012), Miles *et al* (2012) and Kapetanios *et al* (2012), state that QE is successful in reducing unemployment as it acts as an additional supply of money which increases properties' prices and boost confidence and consumption through the wealth effect. This is known as the portfolio balance channel. However, Joyce *et al* (2011) states that there is uncertainty on the impact of QE because measurements are unhinged and there are time lags, leading to doubts whether monetary policy was one of the reasons for the unemployment trends. Furthermore, there is limited past experience of such program and consequently is highly undertrained (Miles *et al*, 2012).

Literature concerning the reasons for the unexpected lower unemployment during 2008 gave little importance to the bank rescue plan by the government as means of preserving unemployment at low levels. Considering the initiations of past recessions as being high inflation there was no need for such rescue plan leading to minimal literature available (Jenkins, 2010). Brei *et al* (2011) provided evidence on a group of countries including the UK on whether rescue plan helped to improve lending activity and indeed found positive results for the UK as capitalization was large in magnitude. Some evidence was provided in the effectiveness of rescue plan in the US indicating that such government aid can lead to enhancements in the economy (Kollman *et al*, 2012). Gordon, (2016) explains that London has performed better than competitors because of the extensive support to financial sector. According to IFSL (2009) London is considered as one of the most important financial centres around the world providing large amount of both GDP and work, therefore, its rescue would lead to a boost in economic performance and reduction in job losses.

2.2 Empirics

Millard (2015) studied a Dynamic Stochastic General Equilibrium (DSGE) model to forecast the unemployment level if labour was less flexible than in 2008 and resulted with 0.4% higher unemployment. Increase in the flexibility of labour by 1 standard deviation reduces joblessness by 0.35-0.49 (Guillaume *et al*, 2012). According to Blundell *et al* (2014) earnings were reduced by 10% during the period 2009 to 2012; where Solon *et al* (2013), using cross-sectional and longitudinal measurements found that everything else equal, wages in 1980s were almost not affected and slightly affected in 1990s. The reason for the great fall of earnings during the 2008 was the reduction in members of trade unions from 13 million in 1980 to 7.5 million in 2008, increasing flexibility (Blundell *et al*, 2014). Self-employment was increased from 7.2% to 10.7% from 1979 to 1992, whereas in 2001 to 2016 it increased from 13% to 15% indicating greater level of self-employment through the years and, possibly, lower unemployment (Wales and Amankwah, 2016; Blanchflower and Freeman, 1993). In 1980 part-time employment was 16% whereas in 1995 increased to 22% suggesting more flexible workers through time (Gregg and Wadsworth, 2010).

During the Great Recession, output has fallen by 6% where the fall in jobs was considerably smaller, by around 2%, indicating the lack of productivity. This shows a large difference in output and unemployment in comparison to past experience. Wage flexibility caused greater reduction in earnings in 2008 than 1980s and 1990s, as in 2011, average hourly wages were 4% below the 2008 rate but in 1980s and 1990s, after three years' time, wages were 5% and 10% greater respectively reducing the incentive to work hard leading to larger fall in productivity (Blundell, 2014). Bryson and

Forth (2015), found that in 2014, productivity was 0.4% lower than the year before the onset of the crisis. Pessoa and VanReenen (2013) found that output per head would have been 10% higher if productivity still grew by 2%. Adding to that, they indicated that a fall in wages decreased output per labour input by 23%. Also, they found that capital per head reduced by 5% leading to around 68% of the drop in worker's productivity. Barnett *et al* (2014) predicts 8% higher capital per head and 2.5% greater productivity if investment progress did not fall.

Stober (2015) following a regression analysis from 1971 to 2013 concluded that a 1 point increase in the UK output will lead to a fall in unemployment by 0.296 points indicating useful explanations of fiscal policy through Okun's relationship. Stockhammer (2016) concludes that fiscal effect on the UK economy was around 4.5% up to 2010. Cimadomo and Benassy-Quere (2012), state that government expenditure multiplier for the period 1971-2009 is 0.28 and tax cuts multiplier is 0.12 causing an enlargement of output in 2008 by 1% and 0.5% respectively, thus, causing a fall in unemployment. In addition, Sawyer (2011) demonstrates that net borrowing from 1970 to 2007 averaged at 2.5% whereas in 2008 enlarged from 2.9% to 5.3% suggesting boost in government expenditure and reduction in taxation. According to Crossley *et al* (2014) the fall in VAT from 17.5% to 15% expands purchases by 1% and output consumption by 0.4%. Conversely, government expenditure multiplier reduced from 0.91 before 1980 to -0.01 after 1980 where the cumulative multiplier 20 quarters afterwards, was around 90% greater before the 80s showing that multipliers are reduced through time (Perotti, 2002). In contrast, Cimadomo and Benassy-Quere (2012) suggest that multipliers increase through time because of fiscal consolidation in 80s.

According to Joyce *et al* (2011) the Bank of England reduced the interest rates in March 2009 at 0.5% and the buying of financial assets reached £200 billion in 2010. Miles *et al* (2012) denotes that the impact of QE on output was about 1.5% where impact on output from the fall in interest rates was 1.5%-2.5%. This leads to greater demand for labour and, hence, falls in unemployment. Baumeister and Benati (2012) estimated that without the unconventional monetary policy, GDP would have been -12% in 2008 indicating preservation of large amount of jobs. They also provided some evidence on US which indicates that in the absence of QE unemployment would have deteriorate by 0.75%. Weale and Wieladek (2014), using a Vector Autoregressive (VAR) model from 2009-2013, calculated that an increase of 1% in asset purchasing in terms of GDP could lead to 0.18% increase in output and hence employment. Kapetanios *et al* (2012), in the use of 3 econometric models averaged that the fall in 100 basis points of QE enlarged output by 1.4%-3.6%. There is also some evidence provided by Boivin and Giannoni (2006), on the US evolution of monetary policy the prior 40 years indicating stronger effects

after 1980 since output is now more sensitive to interest rates by 0.18 points. This is also supported by Baumeister and Benati (2012), for the UK.

Edmonds (2016) provides information on the projected amount of banking sector stimulus plan being around £500 billion. However, little information was provided on the impact of such plan on economic performance. Kollmann *et al* (2012), indicates that after the stimuli to the banking sectors in US employees hours increased by 1.56%, output by 1.17% and investment by around 6% indicating a valuable reason why the impact of the UK bank rescue plan should have been further examined. Brei *et al* (2011) derived an econometric model on a group of countries including the UK from the period 1995-2010 and concluded that there is a rise in the amount of loans by 0.4% with a 1% increase in banking stimulus to an average bank.

3. Data and Methodology

This chapter indicates the methodology used in this dissertation which is a comparison of the response to unemployment and other variables in the last three recessions in the UK to show which of the motives introduced by literature are mostly supported by evidence. This chapter will identify why UK is considered an appropriate country to analyse, the rationale for the selected time period, 1979-2016 and the explanation of techniques used. Finally, it indicates the variables and sources to be analysed thereafter.

3.1 Geographical and Time Scope

Initially, the UK will be analysed in this dissertation because of the escalating importance of London as being an international financial centre providing high levels of employment and GDP, prior to crisis reaching 7.6% and 1.04 million employees correspondingly (IFSL, 2009). Considering 2008 as being a financial crisis, the collapse of major financial institutions caused expectations of enormous unemployment levels in the UK, but unpredictably this was not the case. Other countries such as Germany experienced even declining patterns of unemployment, from 7.4% in 2008 to 5.8% in 2011 consisting of a better case to be analysed (Eurostat, 2017c). However, the UK was chosen because of the paramount importance of London financial centre compared to Frankfurt and the availability of more data on historical basis (IFSL, 2009).

Data is collected and compared among the three last recessions tackled in the UK, in 1980s, 1990s, and 2000s. Recessions during 1950s to 1970s were decided not to be included in the sample because of possible gaps and limitations in the data that could lead to inaccurate results. Firstly, for the 1980s recession, sample period starts from 1979 to 1989, the second period covers 1990s recession starting from 1990 to 2006 and the last period consists of the Great Recession and comprises 2007 to 2016. An approximately ten to fifteen year period among each recession is used with aim to incorporate both the process of falling into recession but also the process of recovery. Initial year of each period entails the first year that the country fell into the recession in accordance to the NIES (2017) and Hill *et al* (2010).

3.2 Data Sources and Techniques

Most of the data is collected through the use of ONS, Bank of England and the Eurostat, since they all consist of high validity and accuracy. Most of the data arises from high sample surveys which even though consist of sampling error it has negligible effect on the accuracy of the results (ONS, 2015). In

this dissertation all variables presented in monetary terms were transformed to ratios of GDP to make them relative, eliminate inflation issues and provide better judgments (Munro, 2016). Any percentage change or comparison is made among the first three to four years after the initial shock, because they are the ones to illustrate the greater impact of crisis but also, beyond that period, some variables recover and inclusion in the calculation may lead to misrepresentative results.

3.3 Variables

According to the ONS definition, unemployed, is considered a person that even though has been looking for a job in the previous four weeks, he is in a position to work in the next two weeks, but still cannot find a job. Data on unemployment is collected through the Labour Force Survey (LFS). However, LFS omits workers of age below 16 and armed forces limiting the accuracy of the data available (Clegg, 2016; ONS, 2015).

GDP comprise for the economic growth in the UK. There are three approaches to GDP known as the income, expenditure and production approach. Usually an average of the three is measured and illustrates the value for the final GDP (Lee *et al*, 2015). However, the calculation of the average of the three approaches limits the accuracy of GDP since not accurate values are used. GDP may not represent actual values of economic activity since it omits intangible assets leading to imprecise values of GDP and, hence, volatiles the hypothesis (Lee *et al*, 2015).

Average Weekly Earnings (AWE) represent the measure of total pay including bonuses per week and the data were collected by Monthly Wages and Salaries Survey. AWE was chosen as variable of flexibility because it also demonstrates the strength of trade unions. It is the only source to consider bonuses, industrial separation and high frequency, therefore is stronger than any other source (Evans, 2015). However, in 2010 there was a change in the way of presenting data from Average Earnings Index to AWE creating limitations to the analysis because data available were separated in two periods from 1963-1999 and 2000 onwards. Historic values of AWE were estimates presented by ONS because of limited microdata and thus cannot be considered as a fully comparable source but this was the best historic data obtainable (Crane and Elliot, 2013). As it will be noticed in the next chapter there is no big jump from 1999 to 2000 suggesting that changes in the method did not have a massive impact on trends.

Self-employment was chosen to illustrate flexibility as it demonstrates the movement of workers among employment types. It is represented by the number of employees, collecting data from LFS or

number of self-employed jobs in the economy with data collected from Workforce Jobs (WFJ) (Clegg, 2016). The number of employees data consist of higher quality because one person may have more than one self-employed job, therefore, WFJ will differ by around ± 250000 than the number of employees creating some inaccuracy (ONS, 2013). However, most of the existing employment data on ONS consist of 1992 or 1984 onwards; therefore, number of employees is less comparable in terms of containing all three recessions (Clegg, 2016). For that reason both measurements will be represented in this dissertation with aim to show more accurate trending in self-employment.

Part-time employees are the ones that work for fewer than 30 hours per week as their main job with data collected by LFS (ONS, 2013). They were chosen as an indication of flexibility because it also incorporates the hours worked by workers since if there is an increase in part time employment it directly indicates a fall in hours worked and increase in labour flexibility. However, as mentioned before, data are only available from 1987 onwards reducing the comparability of part-time employment since it omits the 1980s period.

Productivity is expressed as output per hour worked and consists of how the output varies considering same use of input. Data were collected through the use of national accounts and LFS. In this dissertation output per hour worked was the preferred variable because it creates a link with part-time employment since if it increases, causing a fall in hours worked, will similarly reduce labour productivity (ONS, 2017c).

As an indication of capital shallowing, Gross Fixed Capital Formation (GFCF) was used. GFCF consists of the producer's purchase of fixed assets like plant and machinery, equipment and land (Lee *et al*, 2015). The main source for GFCF is the Quarterly Acquisition and Disposal of Capital Assets Survey (Evans, 2017). Business investment could, also, be used but GFCF is superior since it also represents the general government, dwellings and transferring costs making it more accurate on the indication of capital use (McCrae, 2017). Conversely, the inclusion of buildings and land may not be associated with capital and reduce the precision of analysis. The use of GFCF on plant and machinery may be considered more appropriate in this case, but data are only available from 1987 onwards omitting the 1980s period. For that reason, the use of both data will be analysed to reduce the possibility of invalid conclusions. In order to check any miscalculations of productivity, the GFCF of intangible assets was used.

For the analysis of fiscal policy, net borrowing was used which consists of the main difference of income gains by government and the total government expenditure (Munro, 2017). Data on Public Sector Finances (PSF) is collected through government sources such as Online System for Central Accounting and Reporting (Daffin, 2012). Due to the fact that there were changes in the framework of fiscal policy, some of the PSF measurements begin at 1997, as a result separation of total revenue and expenditure could not be attained by the use of ONS thus the use of Net Borrowing was preferred (Hobbs *et al*, 2012). A specific separation of general government revenue and expenditure could be attained through Eurostat calculations. Main sources of government statistics on Eurostat arise from ONS; therefore, there will be no reduction in consistency (Eurostat, 2011). However, data are available from 1990 onwards omitting one recession period. In this case the use of both sources will enrich this dissertation as it crosschecks the two and ensures high validity conclusions.

For the use of monetary policy, the official bank rate of BoE is used. It is the rate at which the bank will provide liquidity to other financial institutions with data composed through the BoE database. The use of bank rate is more appropriate in this case because it represents both quoted and effective rate. Some changes in the reform occurred through the years without causing problems of continuity (BoE, 2017a).

Another variable to be used for monetary policy is the Asset Purchase Facility (APF). The APF is the program where BoE acquires financial assets known as gilts with aim to inject money into the economy (Munro, 2017). The rationale for the use of gilts is that the more purchases of gilts, the higher will be their prices and thus the lower the return, which reduces cost of borrowing and encourages investors to become more optimists and increase spending, causing changes in unemployment (BoE, 2017b). However, APF was firstly introduced in 2009, reducing comparability with previous recessions and certainty of conclusions.

Finally, the bank rescue plan is analysed through the performance of financial sector in terms of number of jobs and Gross Value Added (GVA). Initially, for the number of jobs and GVA this dissertation considers the financial and insurance activities (F&I) as a ratio of whole economy since it was the most relevant to represent the financial sector. These measurements were chosen to demonstrate if the plan was successful to save some jobs in the financial sector during the recession. However, as mentioned above the number of jobs consists of limitations that may reduce the accuracy of the analysis, however, it is the only variable that consists of historic trending since 1979 in order to

have meaningful comparisons. Therefore, GVA is appropriate to crosscheck the conclusion derived by number of jobs aiming to overcome any inaccurate conclusion.

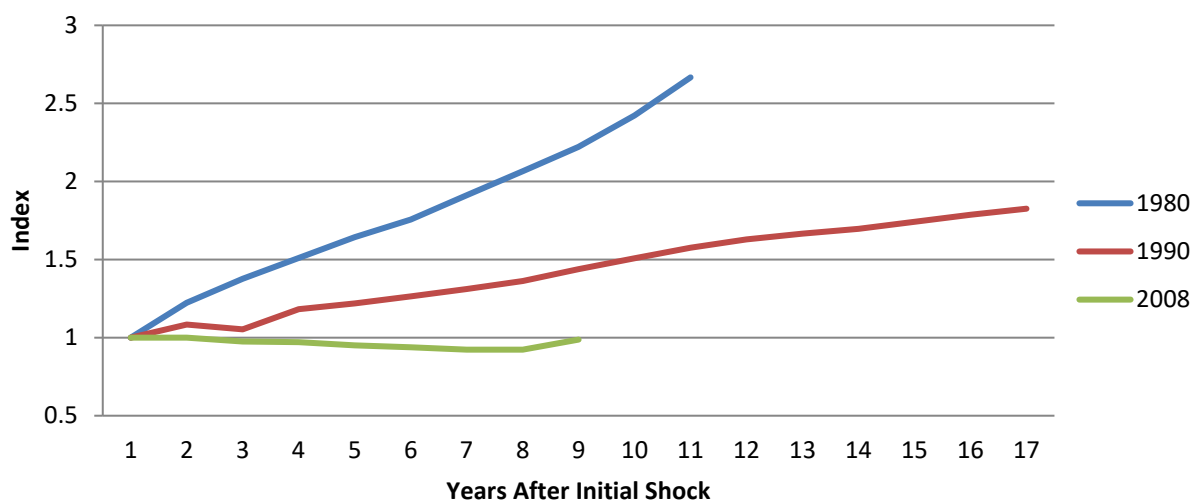
Another variable to use is the lending to UK business. The plan was initiated with aim to ease credit; therefore its successfulness can be examined through lending, aiming to show improvements in economic activity and thus reductions in unemployment during that period. Lending to UK business is defined as number of loans provided to private non-financial organizations in the UK (BoE, 2015). Data on lending activity is collected by BoE and information from local banks and building societies (BoE, 2017c). Since 2010 lending to UK business did not include securitisation, changing the measurement from M4L to M4Lx and reducing the instability of the data. Although, M4Lx would be considered a better measurement for lending, no historic data is available before the change making M4L the best data to be presented (Owladi, 2010). Another limitation to acknowledge is that the lending activity available presents only 70% of lending to non-financial corporations, thus, reduces accuracy of the data (BoE, 2015).

4. Data Analysis

4.1 Flexibility of Labour

The first hypothesis to be tested is whether flexibility of labour increased through time providing an explanation to the unexpected lower unemployment in 2008. If this is the case, AWE must decrease, whereas self-employment and part-time work must increase compared to past experience. Figure 3 suggests increasing AWE in the 1980s period since it has a much steeper curve compared to the 1990s and 2008, with an increase of 37.7% in three years after the initial shock. Considering 1990s, curve is initially increasing by 8.3% but then declines by 3%. However, this reduction cannot reach in magnitude the lessening of 2008 period which is reduced approximately by 3%. Figure 3 shows that 2008 is the only period that AWE reduced for 8 continuous periods confirming that labour market could be more flexible during 2008 compared to other recessions since the fall in wages suggests diminishing power of LMI and hence flexibility. Figure A1 in appendix shows the evolution of AWE throughout the sample period.

Figure 3. UK AWE Index



Source: OC-ONS, (2017d,e).

Self-employment is the second variable for flexibility. Figure 4 demonstrates that in 1990s, number of self-employed is decreasing by around 4% in the first four periods. The 2008 curve is overall upward trending suggesting that the number of self-employed is increasing by 4.3% four years after the shock. Since the number of self-employed is increasing in 2008 but decline in 1990s suggests an overall acceptance of the hypothesis of higher flexibility. However, no data are available for the 1980 period, therefore the number of self-employment jobs are presented with aim to fill in the gaps.

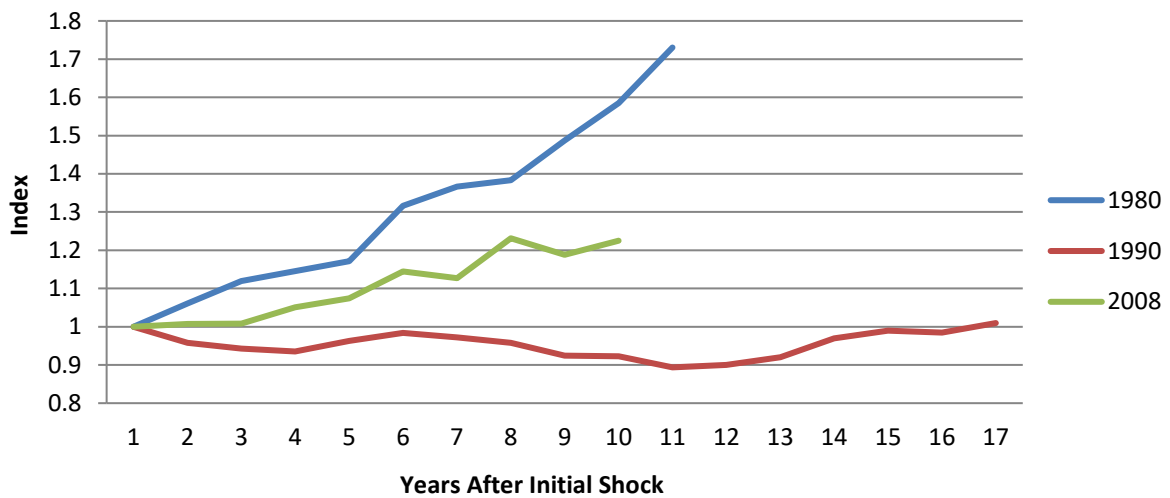
Figure 5 suggests increasing patterns of self-employment jobs in the 1980s and 2008 recession as in four years after the initial shock it increased by 14.5% and 5% respectively, whereas, at the same time during 1990s it decreased by around 7%. It can be argued that as it concerns the 1990s, hypothesis is confirmed because of the 2008 curve being higher than the 1990s. Nevertheless, the greater increase in 80s compared to that of 2008 recession, suggests more self-employment jobs and, hence, possibly greater flexibility, causing inability to support the hypothesis. However, as explained in the data section, evidence from workforce jobs need to be taken with caution, because one person could have more than one self-employed job therefore the rejection in the 80s may not be absolutely equitable.

Figure 4. Number of UK Self-Employed Index



Source: OC-ONS, (2017f).

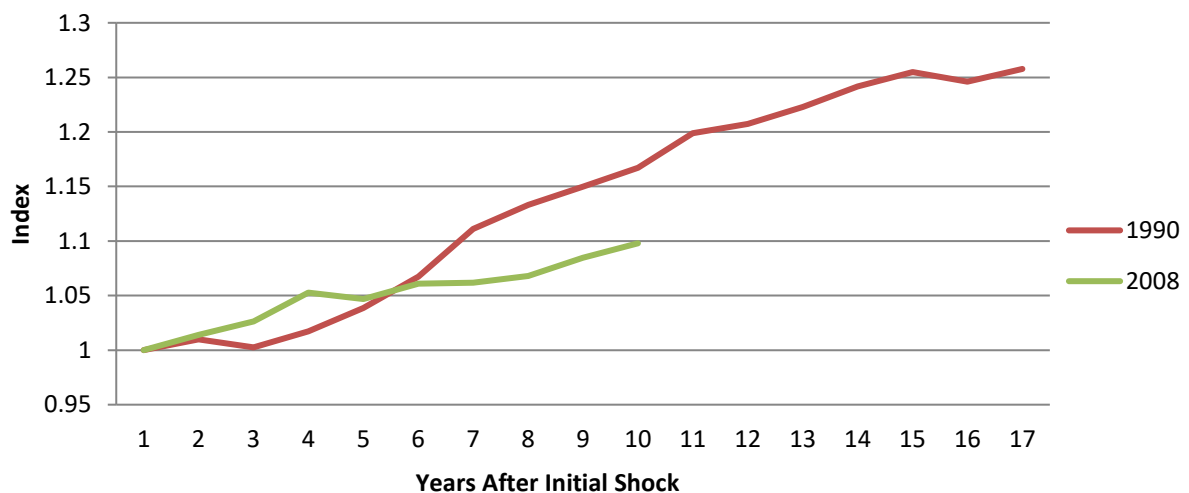
Figure 5. UK Self-Employment Jobs Index



Source: OC-ONS, (2017g).

Figure 6, indicates the number of employees working part-time. It shows an overall upward trend curve for both 2008 and 1990 recessions. The magnitude of increase in 2008 was greater than 1990s as in 2008 number of part-time employees increased by 5.2% whereas in 1990 by 1.7%, in four years period, suggesting more flexible labour during the Great Recession. On the other hand, the omission of 1980 sample period reduces the reliability of the data. For the full sample data on self-employed and number of part-time workers see Appendix A2-4.

Figure 6. Part-Time Employees Index



Source: OC-ONS, (2017h).

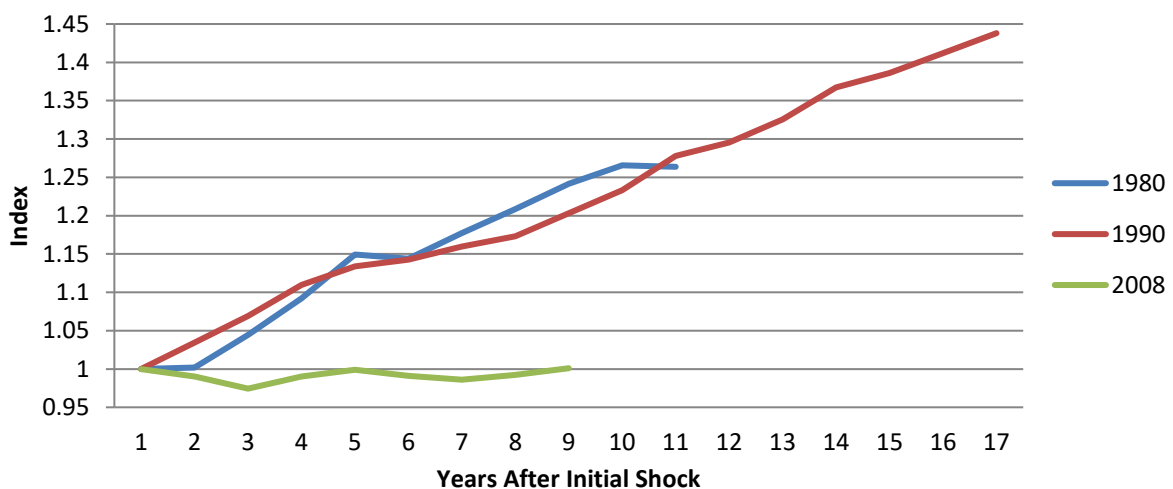
Overall, as it can be observed, the hypothesis of flexibility can be clearly supported by 1990s recession but limits the ability to conclude for the 1980s. Even though AWE and part-time work support the

higher flexibility, the higher self-employment jobs during the 1980s rejects the hypothesis creating doubts to whether flexibility is one of the reasons to the lower unemployment than expected during 2008. However, considering the limitations of workforce jobs mentioned before, recommendations of refusal of the hypothesis in the 1980s is not enough to fully reject the hypothesis of higher flexibility, indicating that it can be possible answer to the question. These findings are in line with the literature papers like Millard (2015).

4.2 Productivity

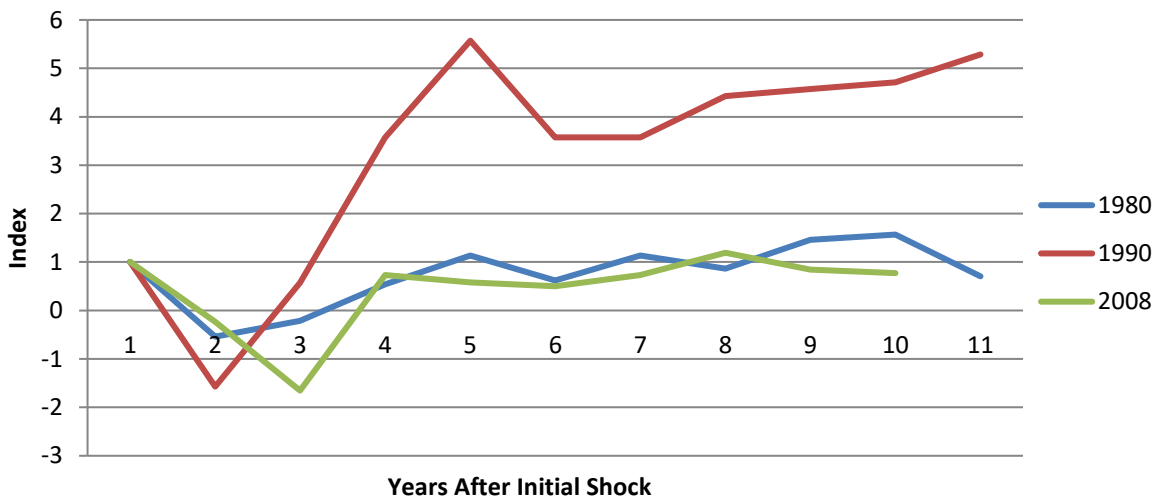
The second hypothesis to be analysed is that productivity in 2008 was lower than 1980s and 1990s; therefore, this is the reason for the rapid fall in GDP providing an explanation why unemployment did not increase by large extent during that period. Labour productivity is demonstrated on Figure 7 which illustrates that productivity in 1980s and 1990s was increasing by 4.4% and 6.9% correspondingly, whereas in 2008 was declining by around 3% three years after the shock. This coincides with Figure 3 and increasing AWE during 1980s and 1990s while falling in 2008. Labour productivity is also, in line with the upward trending curve of part-time work in Figure 6, since as it increases; following the abbreviated hours worked, output per hour worked will be reduced signifying an interconnection of the two. Also Figure 8 shows the GDP growth index. As can be observed the extensive and prolonged reductions in output growth during the first three periods of 2008, are in line with the falling productivity and therefore can support the hypothesis, explaining the lower needs for unemployment to increase.

Figure 7. UK Labour Productivity: Output per Hours Worked Index



Source: OC-ONS, (2017i).

Figure 8. Percentage Change in UK GDP 1979-2016 Index



Source: OC-ONS, (2017a).

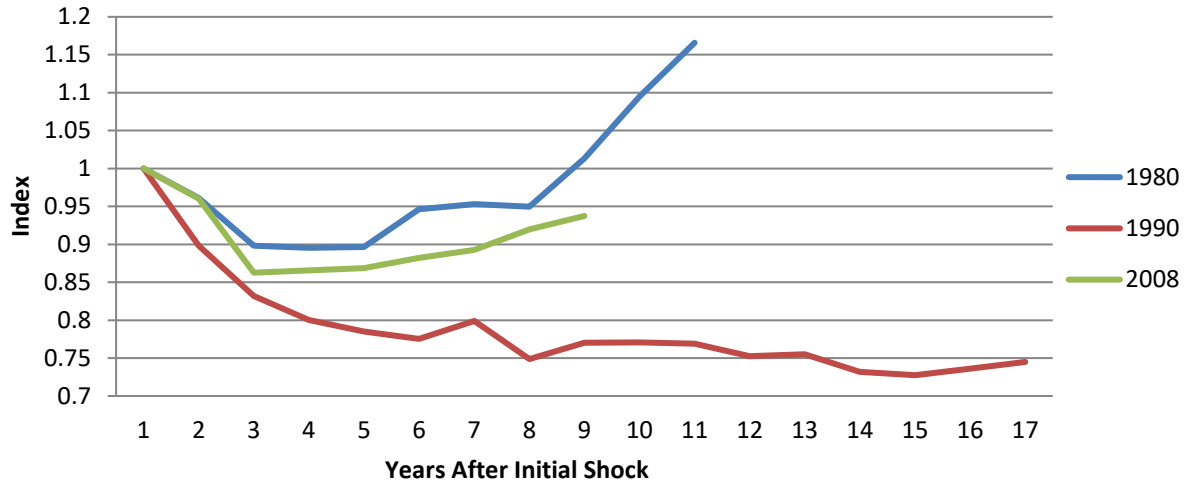
In addition to labour productivity, capital shallowing can explain the declining productivity levels. For this to be true, GFCF must be lower in 2008 period compared to 1980s and 1990s. According to Figure 9, during all three recessions there was a reduction in GFCF with 1980s and 2008 having commensurate patterns while 1990s had a more extended reduction. Considering the third period of recession, in 1980s GFCF falls by 11%, in 1990s by 17% whereas in 2008 by around 14%. Accounting for 1980s GFCF being preponderant than 2008, advocates acceptance of the hypothesis while as regards to the 1990s leads to a rejection. The use of Figure 10 overcomes any problem arising from the inclusion of land and buildings while defining GFCF. It confirms the results obtained since the GFCF on plant and machinery in 2008 recession is greater than 1990s corroborating the suggestion of rejecting the hypothesis during that period.

Another important aspect worth examining is the importance of intangible assets as omitting them from GDP leads to miscalculations of output and productivity of labour. Accounting for the first three years of recession, Figure 11 which illustrates GFCF of intangible assets, displays that both curves increase initially and then decline. The 2008 curve in the third period, overall increased by 3.4%, whereas, the 1990 curve end up to a reduction of approximately 2%. The greater increase during 2008 crisis compared to 1990s, suggests greater investment on intangible assets in that period leading to greater importance through time and, thus, possible miscalculations of productivity.

Primarily, labour productivity supports the hypothesis and might consist of a reason for the lower unexpected patterns of unemployment in 2008 as mentioned by literature in the paper Bryson and Forth (2015). However, taking into consideration the miscalculations of productivity because of

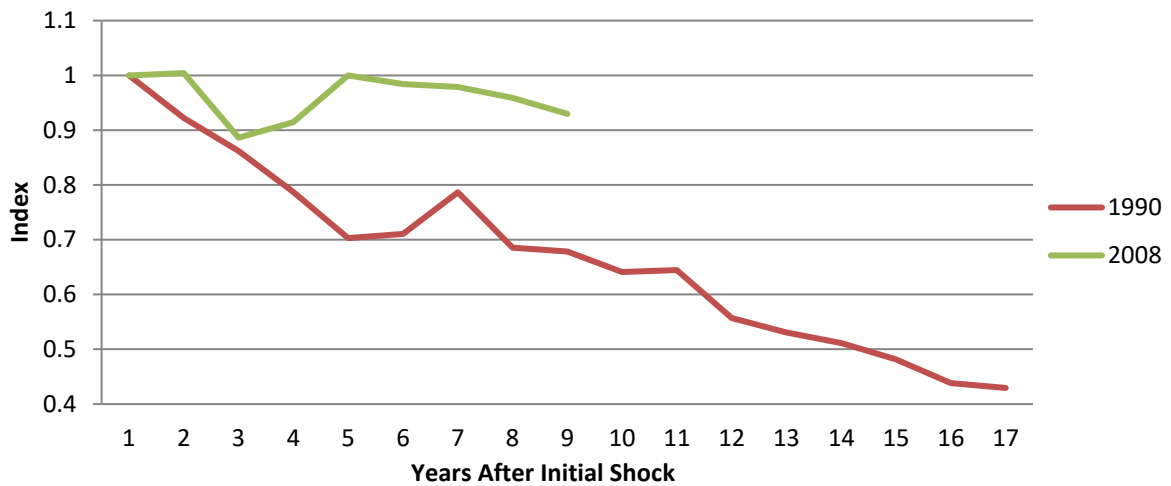
intangible assets, being in line with the higher than expected GFCF and, thus, potentials for higher productivity during that period, creates a doubt to whether productivity falls by the amount presented leading to ambiguous conclusions and inability to accept the hypothesis.

Figure 9. UK GFCF as % of GDP Index



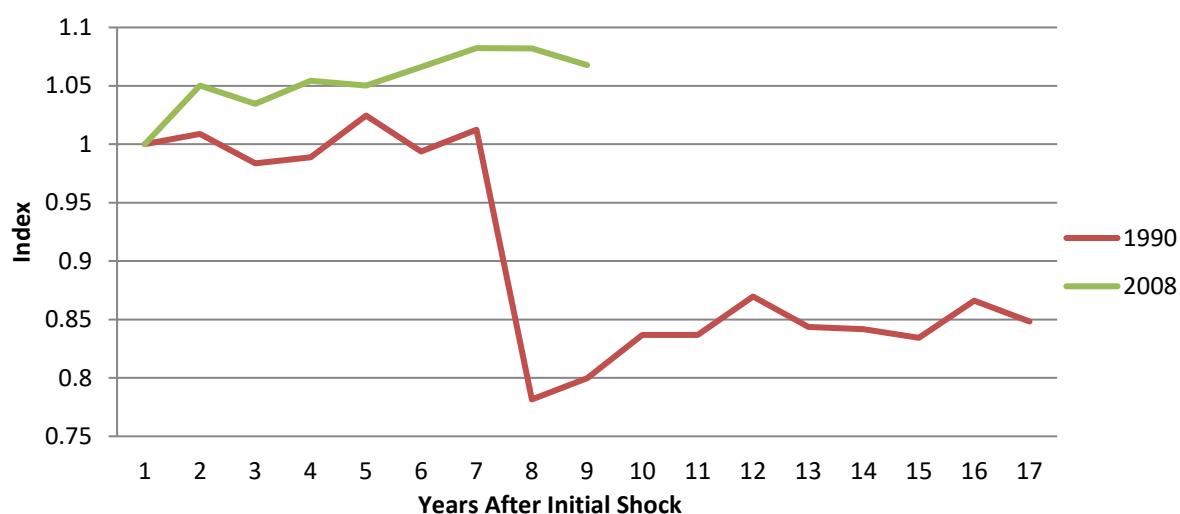
Source: OC-ONS, (2017j).

Figure 10. UK GFCF Plant and Machinery as % of GDP Index



Source: OC-ONS, (2017k).

Figure 11. UK GFCF Intangible Assets Index



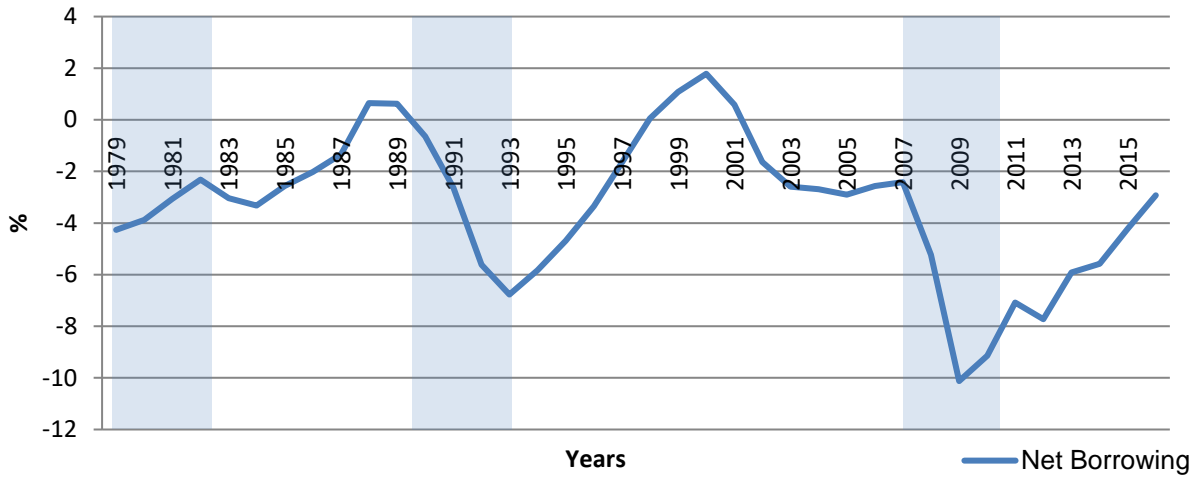
Source: OC-ONS, (2017).

4.3 Fiscal Policy

The third hypothesis to be examined is whether or not the greater expansionary fiscal policy had an effect on the lower unemployment patterns in 2008 compared to past recessions. Concerning Figure 12, with the shaded areas being the four years after the initial shock, net borrowing reduced from -4.26% to -3.06% in 1979-1981, increased from -0.64% to -5.62% in 1990-1992 and finally in 2007-2009 increased from -2.41% to -10.12% demonstrating that in 2008 there was the greatest budget deficit, hence, the greater expenditure and lower taxation compared to previous recessions. It is evident that data support the hypothesis advocating that it could be a reason to the not increasing unemployment as anticipated in 2008. These findings are also in line with literature papers like Vaitilingam, (2011). However, as net borrowing increases, there is a delay in the increase of GDP and employment since they both increased in 2009 onwards and this could be because of time lags.

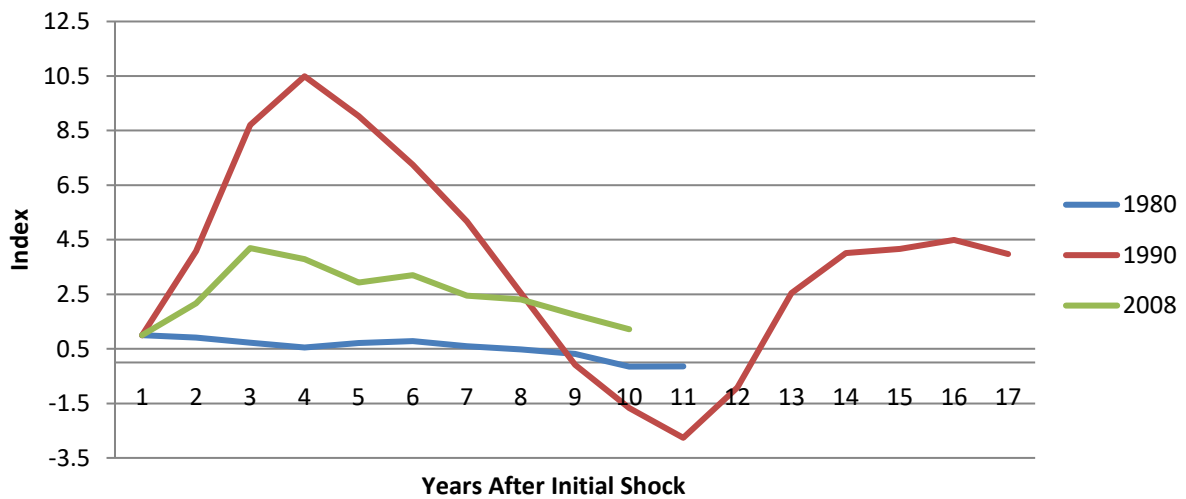
However, considering Figure 13, we can detect that even though the level of deficit was greater during 2008 the magnitude of increase in 1990s was considered more shocking. In the first period of 1990s, it increased by approximately 4 times from 1 to 4.07 whereas in 2008 it increased by around 2 times from 1 to 2.16 leading to doubt whether or not data support the hypothesis. In contrast, government revenue such as taxation is based on level of employment; due to the fact that employment was higher in 2008 than other recessions, government revenue remained high reducing the difference of government expenditure and revenue and, hence, no large increase in net borrowing was demonstrated in 2008 compared to 1990s. This causes endogeneity and causality of the variables as it is not the fiscal policy that shapes the unemployment trends but the unemployment level that shapes the fiscal policy.

Figure 12. UK Net Borrowing 1979-2016



Source: OC-ONS, (2017m).

Figure 13. UK Net Borrowing Index

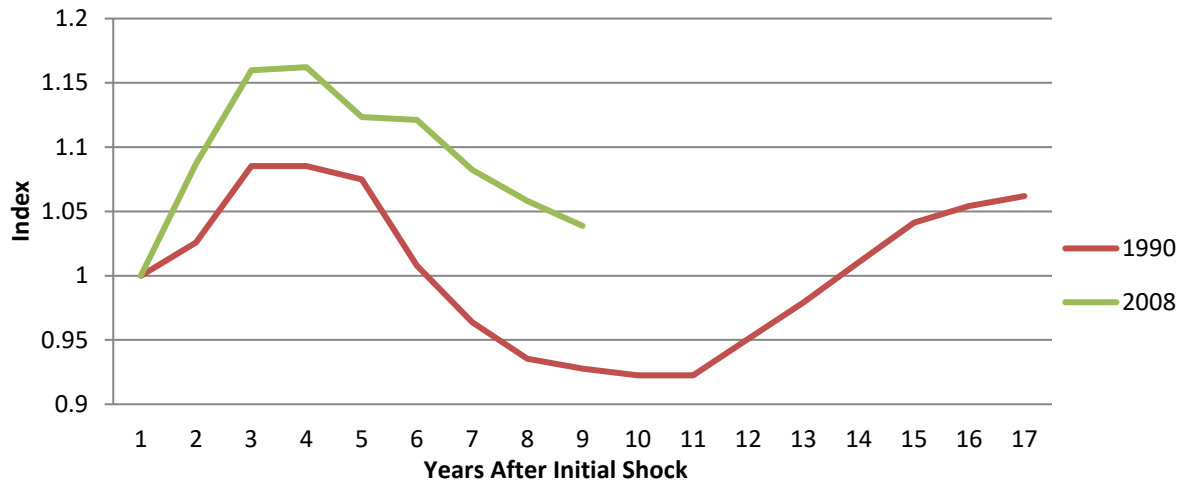


Source: OC-ONS, (2017m).

To get a better grasp of how fiscal policy might have played a part we separate revenue and expenditure in Figure 14 and 15. Initially, Figure 14 supports the hypothesis since government expenditure in 2008 was greater than in 1990s. In the third period of recession, expenditure in 1990s increased by 8.5% whereas in 2008 by almost 16%, indicating that the government in 2008 recession was more prepared to spend money in the economy compared to 1990s. Moreover, Figure 15, illustrating the revenue, shows that 1990 curve lies below 2008 resulting to rejection of hypothesis since taxation is considered to be increasing by 4.4% in 2007 rather than decreasing. However, it is important to mention that taxation reduced in mid-2008, suggesting that if we consider mid-2008 as the initial year of the period, as signposted by the dotted line, then it supports the hypothesis and

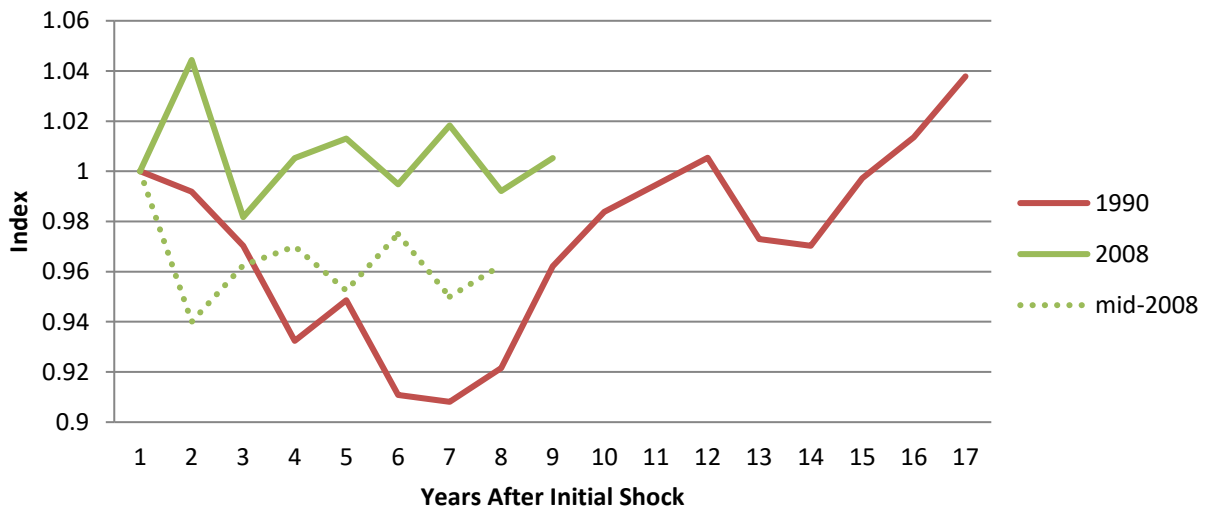
indicates that revenue in 2008 is much lower than the 1990s, leading to greater budget deficit. Consequently, fiscal policy data support the hypothesis and are in agreement with the literature suggesting that it can be a possible explanation for the lower than expected unemployment in 2008.

Figure 14. UK General Government Expenditure Index



Source: OC-Eurostat, (2017a).

Figure 15. UK General Government Revenue Index



Source: OC-Eurostat, (2017b).

4.4 Monetary Policy

The fourth hypothesis to be tested concerns monetary policy and whether bank rate and QE have contributed to the unexpected trends of lower unemployment. Figure 16 demonstrates the bank rate index with 2008 curve having the more shocking change during that recession. The 1980s rate was initially increasing by 18.5% and then reduced by 23% but even then it had much higher rate compared

to 1990s and 2008. In the third period after the shock, 1990s rate decreased by 36%, whereas, the 2008 rate, declined by 89%. Although, at the first two periods of recession the 1990 curve is steeper than 2008 suggesting greater reduction, the difference of the two is negligible compared to the shocking reduction of 2008 in the next period and, therefore, is unable to reject the hypothesis. As a result, Figure 16 recommends that the lower bank rate in 2008 as suggested by the literature can be a possible explanation to the unexpected trends of unemployment. Full sample data for bank rate can be observed in Appendix A5.

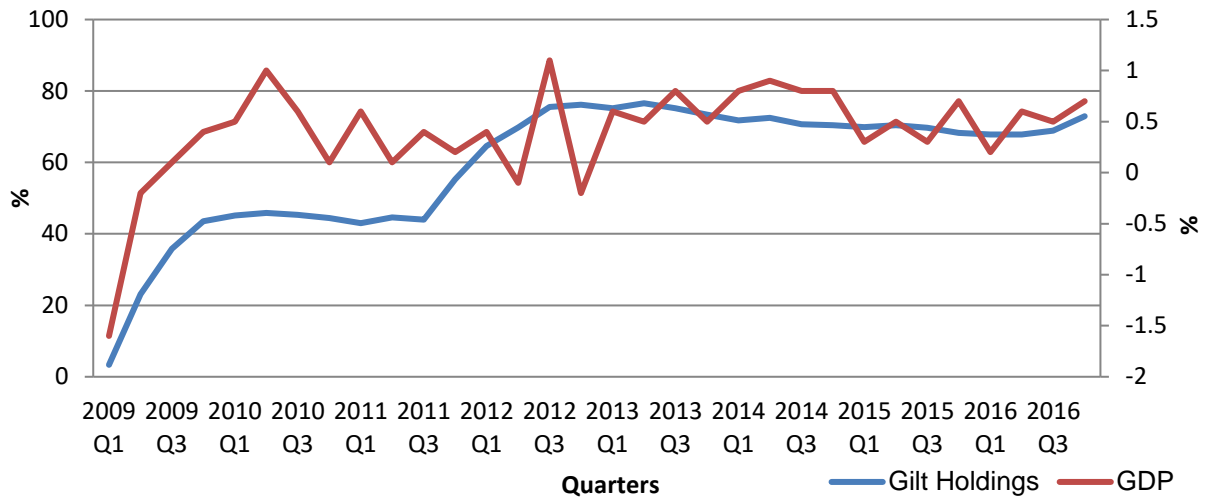
Figure 16. UK Official Bank Rate Index



Source: OC-BoE, (2017d).

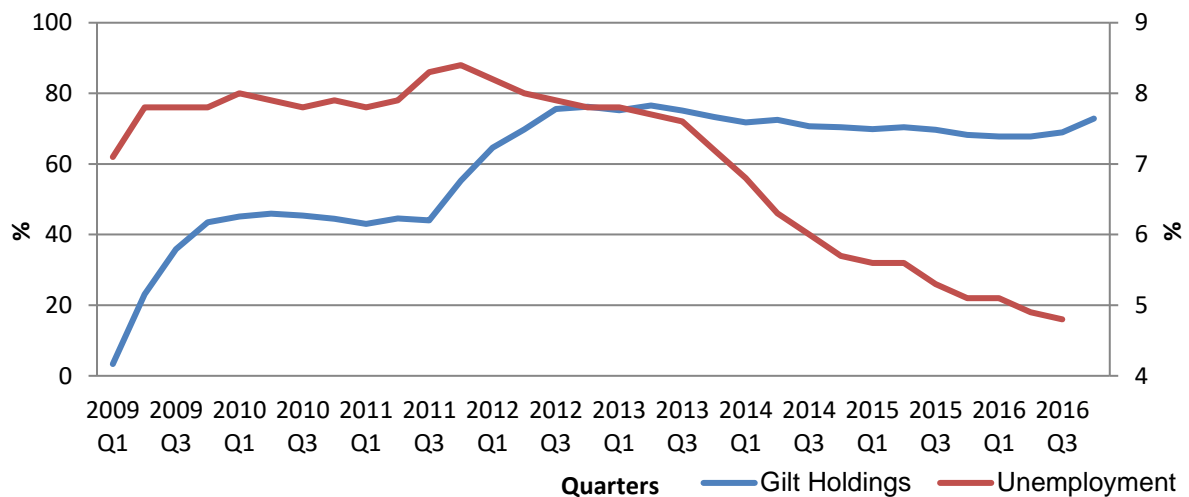
Furthermore, Figure 17 introduces the effectiveness of QE through the gilt holding as a percentage of GDP. It is evident that since 2009, gilt holdings boosted by around 40% in four quarters causing a reduction to the yields, and cost of borrowing, thus, encourage investment, consumption and possibly reduce unemployment supporting the program’s effectiveness. Moreover, this can also be supported by the GDP growth trending on Figure 17 where after 2009Q1 starts to recover with curve trending upwards and even reach positive growth of 1% in 2010Q2. Furthermore, Figure 18 and the non-increasing unemployment curve after 2009Q2 suggests that unemployment becomes more stable at around 7.8% and even declines after the second round of asset purchasing illustrating effective QE program. Consequently, monetary policy data on interest rates and QE are in line with the hypothesis and literature papers like Gregg and Wadsworth (2010), suggesting that the monetary policy can provide a potential clarification to why unemployment was not increasing as expected during 2008. However, the fact that QE program was firstly introduced in 2008 recession reduces comparability and confidence to accept the hypothesis since we cannot be sure whether program would have been more effective during 1980s or 1990s.

Figure 17. UK Asset Purchase Facility Gilt Holdings as % of GDP and GDP Growth 2009-2016



Source: OC-ONS, (2017a+n).

Figure 18. UK Asset Purchase Facility Gilt Holdings as % of GDP and Unemployment Rate 2009-2016



Source: OC-ONS, (2017b+n).

4.5 Bank Rescue Plan

Finally, the last hypothesis to be analysed is whether bank rescue plan was effective in saving jobs in the financial sector during 2008 and this can be achieved through analysing the ratio of number of jobs in the F&I activities relative to the whole economy. Financial sector jobs in 2008 recession must have increased or even reduced at a slower rate compared to previous recessions for the hypothesis to be accepted. Figure 19 illustrates the 1980s curve being the steepest and upward trending, while the 1990s and 2008 curves are initially increasing but then decline. Those figures suggest that, considering 1980s, the hypothesis cannot be supported because although the number of jobs in whole economy decline, jobs in F&I activities increase more than the 1990s and 2008. Conversely, taking into

consideration 1990s, hypothesis is supported because ratio is increasing faster in 2008 period compared to 1990s, suggesting that bank rescue plan managed to save some jobs during the 2008 recession. However, as it can be observed the positive effects only last in the short-run. In the long-run, the rate of decline of jobs in financial sector is greater in the 2008 period compared to the 1990s rejecting the hypothesis and concluding that effects of bank rescue plan are only short-run without any dynamic change in unemployment (see Appendix A6 which shows the ratio throughout the sample period).

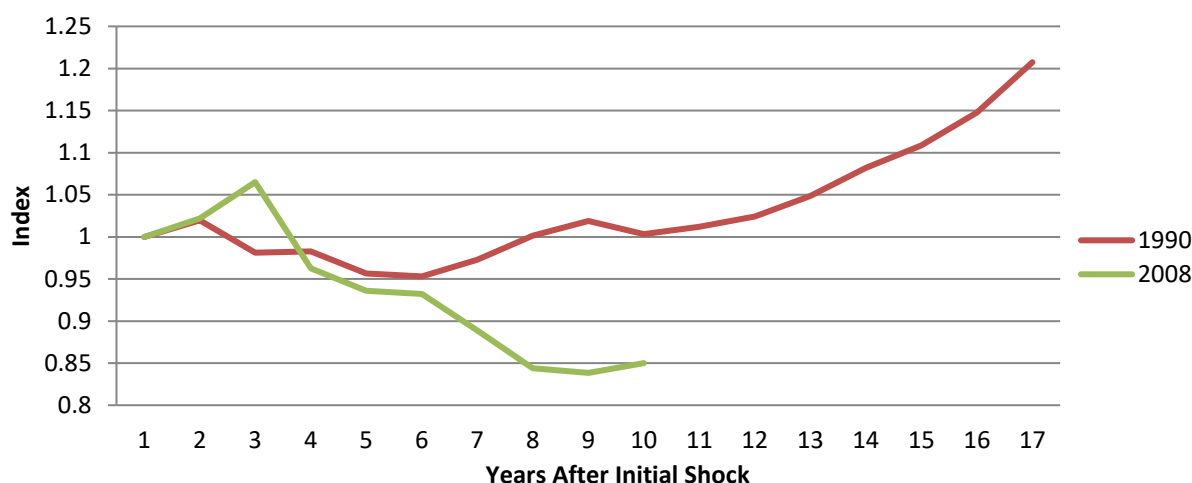
Figure 19. UK Ratio of WFJ in F&I to Whole Economy Index



Source: OC-ONS, (2017o+p).

Additionally, GVA of financial sector can also indicate the effectiveness of bank rescue plan. The hypothesis to analyse is whether GVA in F&I activities in 2008 increased faster than the whole economy due to the financial sector rescue it received. If this is the case plan was effective to keep GVA, and therefore level of employment, at higher levels during 2008 recession. As it can be observed, Figure 20 illustrates faster growth of GVA in F&I activities during the initial years of 2008 recession as in the third period it increased by 6.5% compared to 1990s which reduced by approximately 2% supporting the hypothesis of greater GVA in 2008 crisis. Even though during 2008 prevailed financial crisis, the UK managed to keep increasing rates of F&I activities GVA and therefore possible lower unemployment than past experience and this was achieved through bank rescue plan. Contrarily, this is only a short-run effect as shown in Figure 20, after the third period of 2008 recession F&I activities' GVA declines at faster rate than 1990s, recommending the rejection of the hypothesis and confirming the results of short-run effects obtained above. However, data limitations of the 1980s sample period does not allow for meaningful comparisons (see Appendix A7 which shows the ratio throughout the sample period).

Figure 20. UK Ratio of F&I GVA to Whole Economy Index

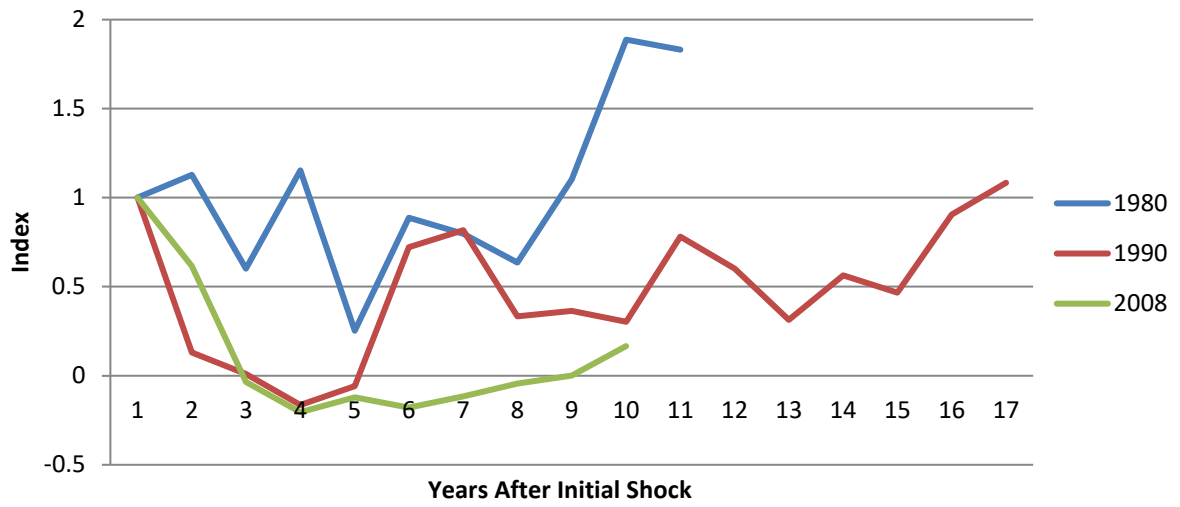


Source: OC-ONS, (2017q+r).

Last but not least, lending to UK businesses is an important indicator of bank rescue plan because the rescue was supposed to ease credit. The plan would be considered effective if lending to UK business during 2008 did not decline to a great extent after initiation of rescue plan suggesting that it was effective to boost economic activity and thus reduce unemployment compared to 1980s and 1990s. Figure 21 indicates that in 1980s, lending to UK businesses was higher than both 1990s and 2008 rejecting the hypothesis as it confronted a moderate reduction and even increasing trending during the first period. In contrast, in 1990 and 2008 periods, reduction was experienced reaching even negative values. 2008 curve lies above 1990 suggesting less reduction in lending activity during 2008 and hence supports the hypothesis, because even though it was a financial crisis, provision of loans were less affected in 2008 than 1990s. More lending indicates more confidence, greater consumption and employment explaining why unemployment was lower than expected during that period. However, after the fourth period of recession, lending activity in 1990s increased at a faster rate than 2008 rejecting the hypothesis. This supports the conclusion already mentioned that effects of bank rescue plan can only be effective in the short-run.

On the other hand, bank rescue plan was only applied in the 2008 recession, thus, limiting comparison with the past because it is questionable how lending growth would be affected if rescue plan was applied. Also considering 2008 sample period in Figure 21, although bank rescue plan was provided, improvement in lending activity was moderate compared to the past and required six years to commence actual recovery suggesting that bank rescue plan might not have been that effective during 2008 recession.

Figure 21. UK % Growth in Lending Index



Source: OC-BoE, (2017e, 2012).

5. Conclusion

This dissertation attempted to analyse the reasons why unemployment in the UK did not increase as expected during the financial crisis in comparison to previous recessions. This was accomplished through the review of existing literature and theoretical framework around this topic that allowed me to form my methodology. Literature supported the idea that more flexibility, lower productivity and expansionary macro-policies are the main reasons why unemployment did not increase as expected in 2008. However, as omitted by literature, in this dissertation bank rescue plan was also examined with the aim to indicate the effectiveness of government plan and whether it managed to keep unemployment lower.

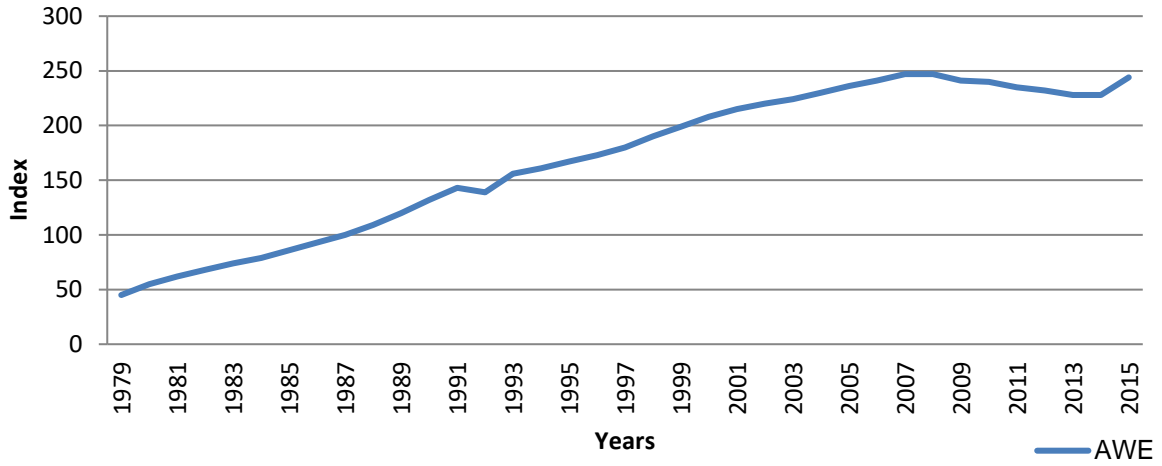
While scrutinised available data, the main conclusions to be derived is that, as concerns flexibility of labour, hypothesis is supported by evidence with some certainty. Regarding AWE and part-time work, the hypothesis is supported and labour was more flexible in 2008 than the 1980s and 1990s, however, concerning self-employment jobs, hypothesis cannot be supported by the 1980s. Nonetheless, limitations in self-employment jobs are not enough to fully reject the hypothesis. Even though labour productivity supports the hypothesis that unemployment did not increase as expected, GFCF does not support the proposition of capital shallowing. Also, increase in importance of intangible assets through time leads to miscalculations of labour productivity and limits the ability to support the hypothesis. With regards to macro-policies, they are mostly supported by evidence to the unexpected patterns of UK unemployment. The greater in magnitude net borrowing during 2008, the reduction in bank rate and the extensive support by QE managed to keep unemployment lower in 2008 recession. Finally, bank rescue plan should not have been omitted by the literature because, mostly supported by 1990s, it consisted of having a positive impact on unemployment patterns in 2008; however, this was only a short-run impact.

The greatest constrain to cope with, was the limited historic data available since 1979 and the limitations of some statistics, which reduced the comparability of the data through all three sample periods, making the generation of my conclusions more difficult. Further improvements can be achieved through the modification and addition of some variables to reach higher quality conclusions. Also this paper provides an addition to the existing literature by the inclusion of bank rescue plan as a contributor towards the less than expected patterns of unemployment.

Finally, although all motives can be partly supported to some extent; this paper suggests that macro-policies and flexibility of labour are mostly supported by evidence as the motives for the lower unemployment trending in 2008 providing an answer to the question. Also bank rescue plan did have an effect but this was only considered to be short-run. The indication of the importance of macro-policies suggests that policymakers obtained an important role during the Great Recession as regards the labour markets.

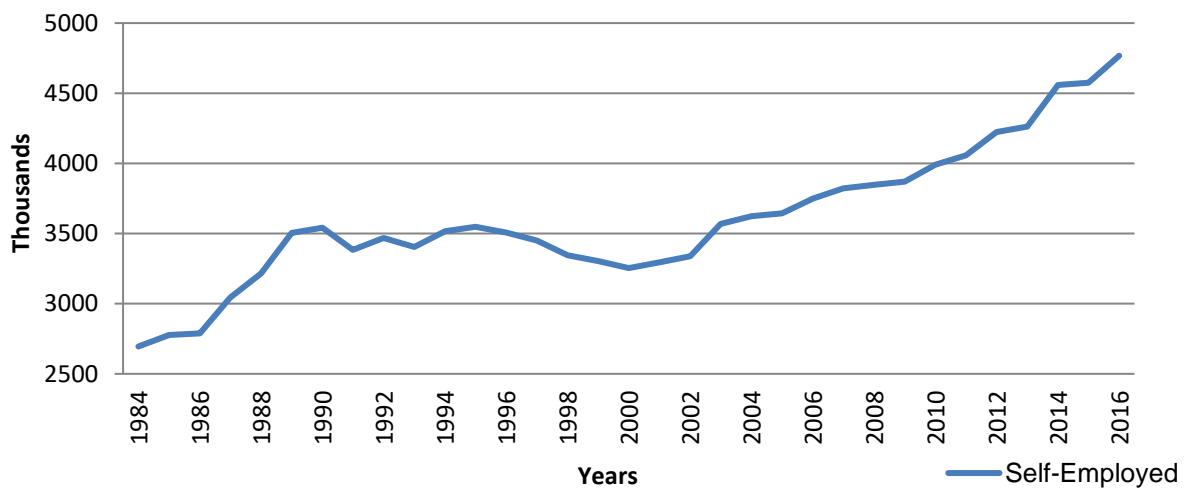
6. Appendix

Figure A1. UK AWE 1979-2015



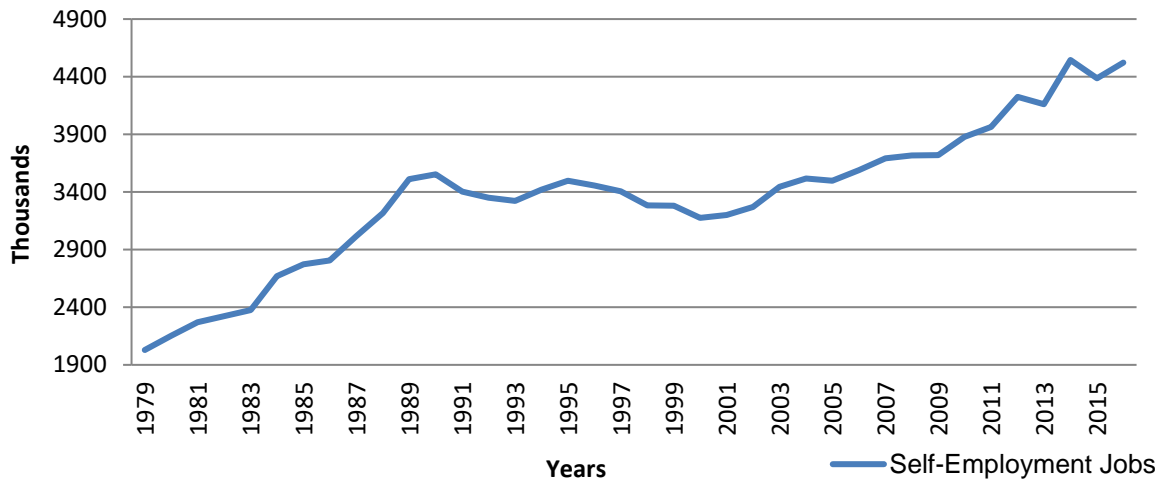
Source: OC-ONS, (2017d+e).

Figure A2. Number of UK Self-Employed 1984-2016



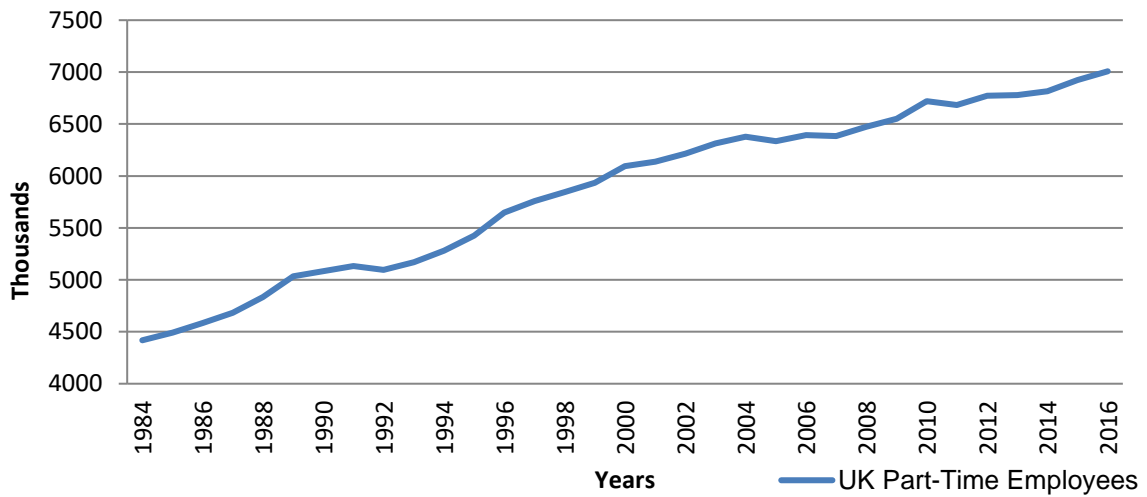
Source: OC-ONS, (2017f).

Figure A3. UK Self-Employment Jobs 1979-2016



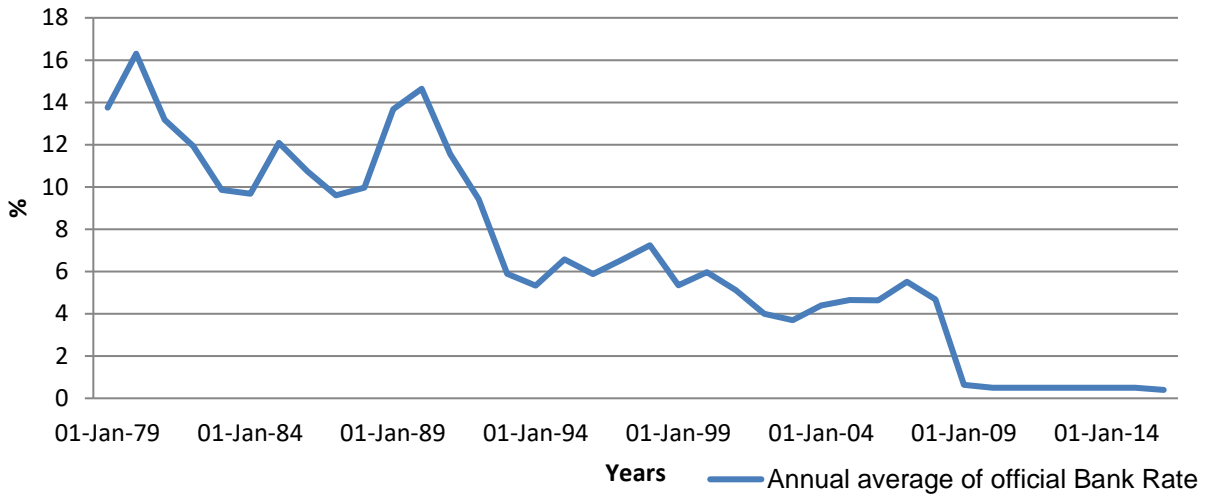
Source: OC-ONS, (2017g).

Figure A4. Number of UK Part-time Employees 1984-2016



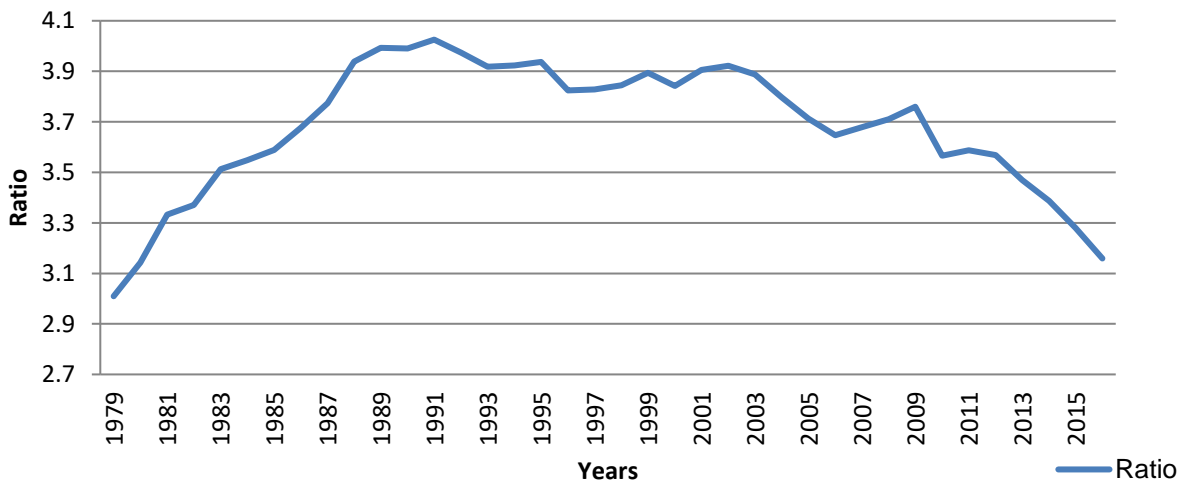
Source: OC-ONS, (2017h).

Figure A5. Annual Average of Official UK Bank Rate 1979-2016



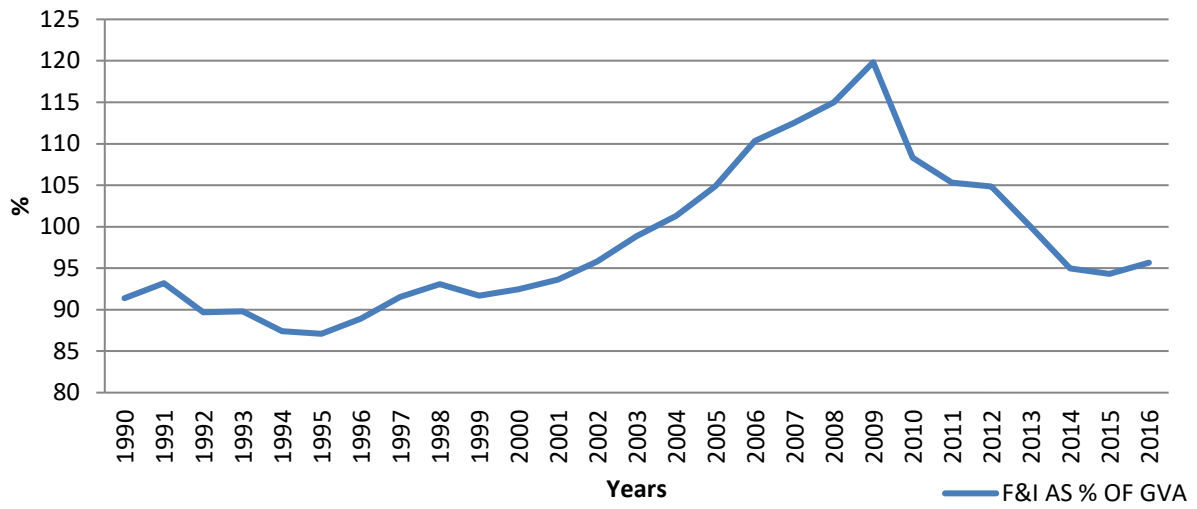
Source: OC-BoE, (2017d).

Figure A6. UK Ratio of WFJ F&I to Whole Economy 1979-2016



Source: OC-ONS, (2017o+p).

Figure A7. UK F&I as % of Total GVA 1990-2016



Source: ONS-NA, (2017q+r).

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