

# Impact of Brexit on Unskilled Labor

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Presented by **Citadel** and **Citadel Securities**  
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# Background Information:

- Advocates of Leave Party, lead by Boris Johnson and other influential party members, have campaigned for Brexit on the basis of controlling immigration, bettering the economy, and allowing greater sovereignty. As Brexit will officially begin on October 31st of 2019, millions of citizens in the UK will be forced to reconcile with the consequences of Brexit.
- As many sectors may face economic turmoil from new immigration and economic policies, we hope to be able to analyze unskilled labor, consisting of 1/4th of UK's employment, in hopes of understanding UK's economy as a whole. From maintenance, manufacturing, and numerous other jobs, unskilled labor is necessary for all economies to thrive.



# Data Sets

Job Listings: Job description, date posted, type of job, company type, and additional references (2.7 million entrees)

Labor Market Statistics: Economic activity rate of different regions of the UK

London Stock Exchange Data: Company stocks before and after Brexit



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# Questions to Solve:

- Has the announcement of Brexit caused a change in skilled and unskilled labor openings?
- The economic activity rate of which region impacted the numbers of unskilled jobs the most?
- Which sector/industry will the decrease of unskilled labor jobs impact the most?
- Has immigration been greatly affected by Brexit inside and outside the EU?



# Main Findings

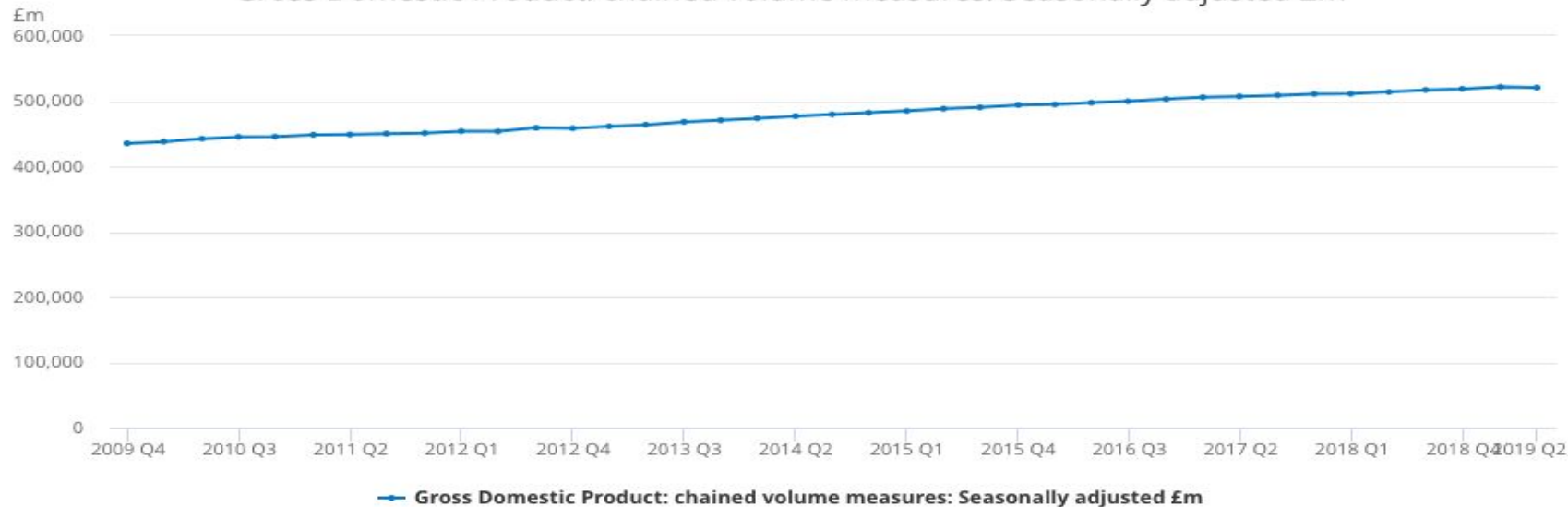
- **Impact of Brexit is not observable from the outset.**
- Unskilled labor jobs substantially decreased since the announcement of Brexit in 2016, while skilled labor jobs significantly increased.
- Immigration to the UK has fluctuated dramatically from the EU.
- Job listings for skilled labor have continued to rise, showing large unfilled gaps between skilled and unskilled roles.



# Impact on GDP

## Chart

Gross Domestic Product: chained volume measures: Seasonally adjusted £m



Source:



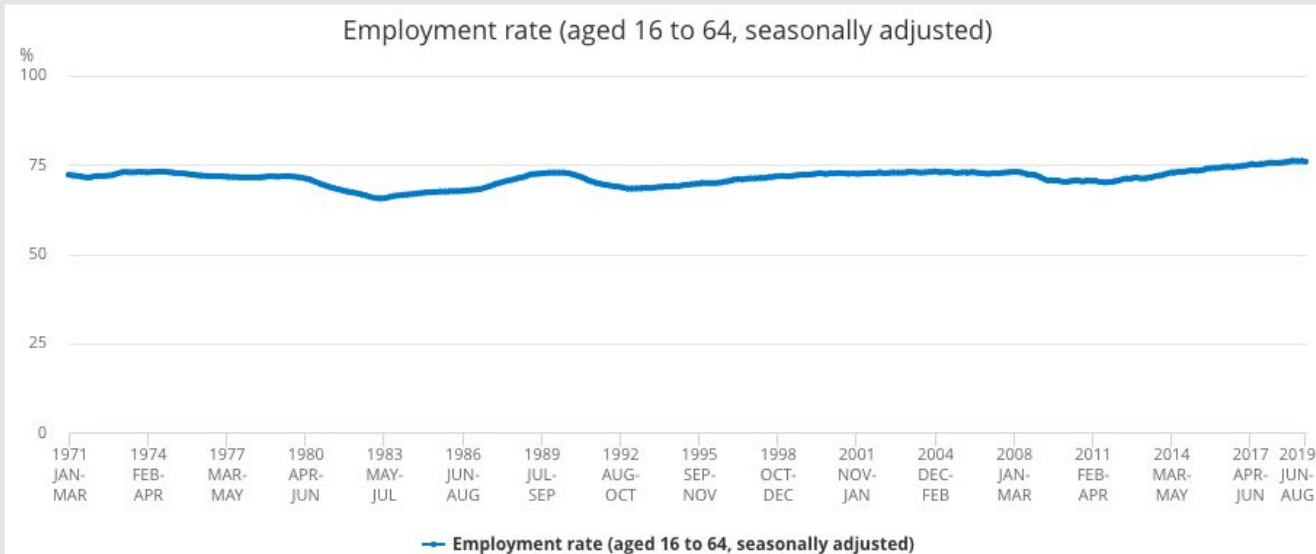
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- The impact on GDP is negligible from the outset. However, **Is this really true?**

Source: <https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/abmi/qna>

# Impact on Employment rate

Chart



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- The impact on Employment is unseen
- Let's dig deep into Job Classification

Source <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/l24/lms>

# What's going on?

- GDP and Employment is not affected from brexit, However there is always a buzz that about the impact of brexit on UK economy
- Who is getting impacted from brexit is the big question
- Let's classify job categories and industries people are working in
- Data Analysis PROVIDES revealing insights



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- The impact on Employment is unseen
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Source <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/timeseries/tf24/lms>



# Defining Skilled and Unskilled Labor

The Standard Occupational Classification consists of the following major groups:

1. Managers, Directors and Senior Officials
2. Professional Occupations
3. Associate Professional and Technical Occupations
4. Administrative and Secretarial Occupations
5. Skilled Trades Occupations
6. Caring, Leisure and Other Service Occupations
7. Sales and Customer Service Occupations
8. Process, Plant and Machine Operatives
9. Elementary Occupations

The sub-major, minor group and unit group structure of these major groups is defined as follows:

From dividing the job listing data into the nine SOC groups, we are able to split the data set into two categories:

- Skilled labor - requiring additional educational or extensive training
- Unskilled labor - elementary jobs and few training requirement



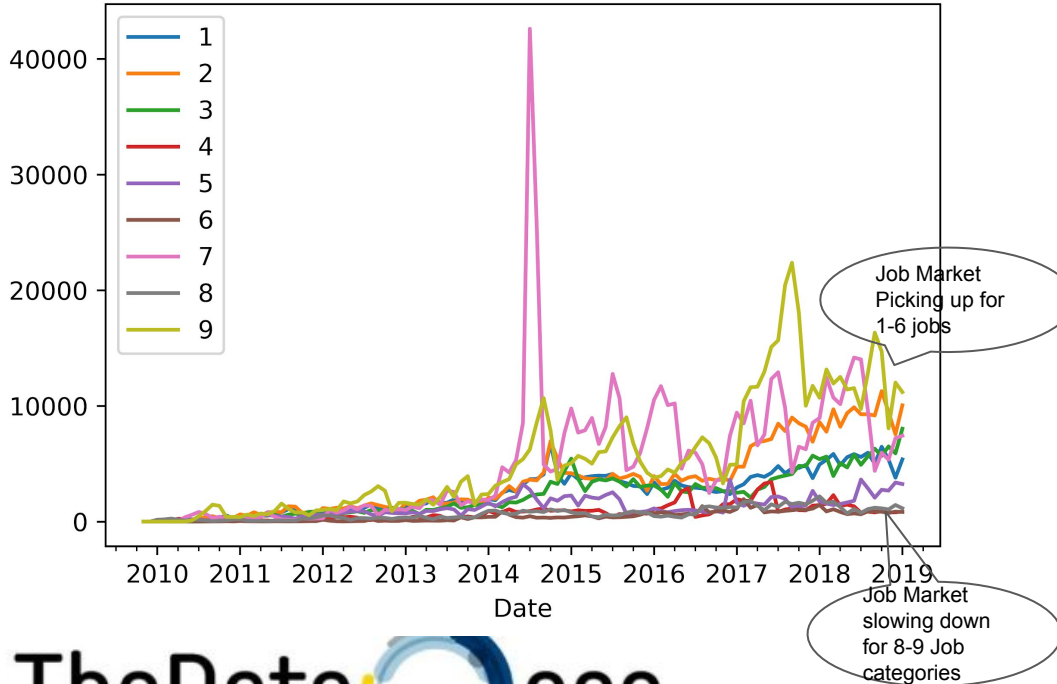
# SOC Areas in Unskilled Labor

**Table 2: General nature of qualifications, training and experience for occupations in SOC2010 major groups**

Major group	General nature of qualifications, training and experience for occupations in the major group
Managers, directors and senior officials	A significant amount of knowledge and experience of the production processes and service requirements associated with the efficient functioning of organisations and businesses.
Professional occupations	A degree or equivalent qualification, with some occupations requiring postgraduate qualifications and/or a formal period of experience-related training.
Associate professional and technical occupations	An associated high-level vocational qualification, often involving a substantial period of full-time training or further study. Some additional task-related training is usually provided through a formal period of induction.
Administrative and secretarial occupations	A good standard of general education. Certain occupations will require further additional vocational training to a well-defined standard (e.g. office skills).
Skilled trades occupations	A substantial period of training, often provided by means of a work based training programme.
Caring, leisure and other service occupations	A good standard of general education. Certain occupations will require further additional vocational training, often provided by means of a work-based training programme.
Sales and customer service occupations	A general education and a programme of work-based training related to sales procedures. Some occupations require additional specific technical knowledge but are included in this major group because the primary task involves selling.
Process, plant and machine operatives	The knowledge and experience necessary to operate vehicles and other mobile and stationary machinery, to operate and monitor industrial plant and equipment, to assemble products from component parts according to strict rules and procedures and subject assembled parts to routine tests. Most occupations in this major group will specify a minimum standard of competence for associated tasks and will have a related period of formal training.
Elementary occupations	Occupations classified at this level will usually require a minimum general level of education (i.e. that which is acquired by the end of the period of compulsory education). Some occupations at this level will also have short periods of work-related training in areas such as health and safety, food hygiene, and customer service requirements.

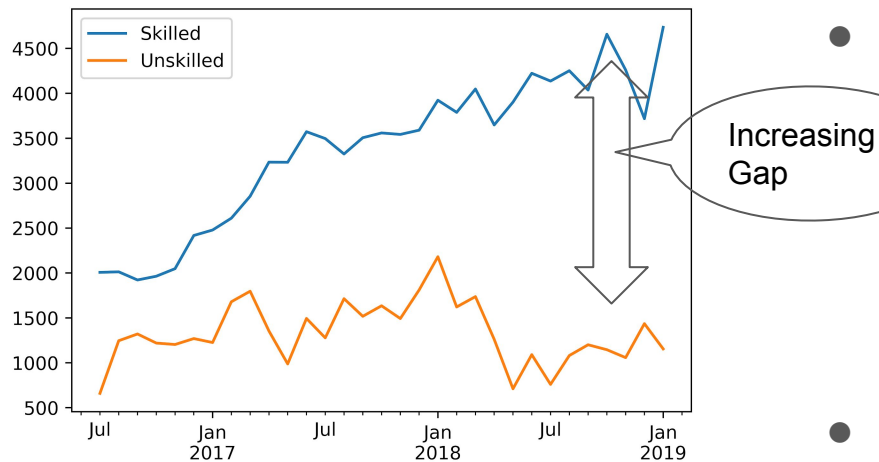
- From the Labour Statistics definitions of each group, we define areas 8-9 as unskilled due to no additional higher education.
- We define areas 1-7 as skilled due to general or higher education requirement.

# Effect of Brexit on the number of jobs created



The adjacent graph depicts the total number of jobs introduced every month from 2010 to 2019, for every job category. At 2016, there is a clear dip in the number of jobs across all categories. After 2016 there has been different growth rates for each category. It can be observed the categories 1-6 have a higher growth rate.

# Brexit: Skilled and Unskilled Labor Trends



- After further grouping the nine SOC job categories into skilled labor and unskilled labor, we demonstrate that the number of jobs that were introduced every month since June 2016 (the referendum vote).
- We see that while the number of skilled jobs increased, the number of unskilled jobs decreased
- This gap neutralizes any impact on overall Job Market (Slide 7)





# Economic Activity of Different Regions of UK vs. Unskilled Labor Jobs

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	-466148.3	208320.4	-2.238	0.03892	*
LF3H	1146.1	2760.4	0.415	0.68320	
LF3G	-8064.5	3906.3	-2.064	0.05457	.
LF3F	-3472.6	1662.7	-2.089	0.05210	.
LF3E	-1891.9	2486.5	-0.761	0.45717	
LF3L	16778.4	14578.2	1.151	0.26569	
LF3K	-8227.3	2528.7	-3.254	0.00468	**
LF3J	1283.5	4332.7	0.296	0.77064	
LF3I	-2837.4	4347.0	-0.653	0.52267	
LF3P	1838.9	906.6	2.028	0.05849	.
LF3O	4822.2	15306.5	0.315	0.75656	
LF3N	-1129.2	2254.1	-0.501	0.62283	
LF3M	1452.7	1596.5	0.910	0.37556	
LF3T	4851.2	2474.6	1.960	0.06655	.

- Through building a linear model among the economic activity of the UK regions, showing that there is a relatively strong linear relationship between unskilled labor jobs and certain regions in the UK: **East Midland, South West, West Midlands.**
- Linear model justifies the impact of**

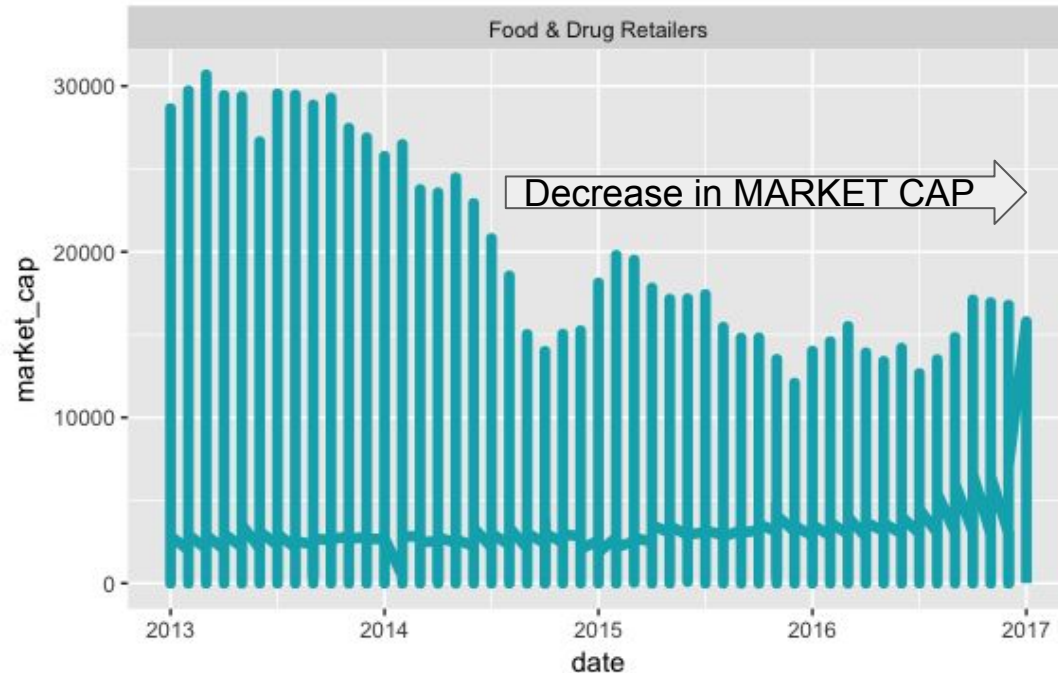
# What industries are getting impacted by unskilled jobs

- The major jobs getting affected are unskilled labours
- From our analysis, the top three industries employing unskilled labour in huge numbers are:
  - Food and Drug retailers
  - Personal Household goods
  - Telecommunication

Lets analyse how the industries are doing after brexit



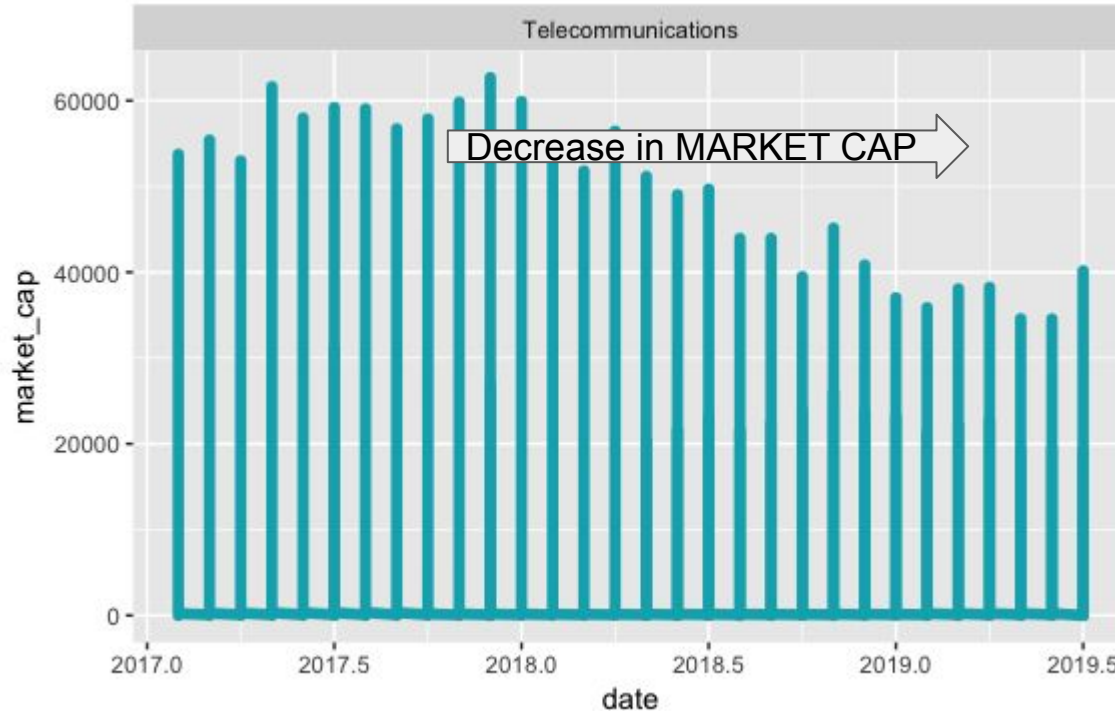
# Unskilled Industries: Food and Drug Retailers



- From analyzing the market cap of food and drug retailers, there is ~25% drop from 2015-2016 leading up to Brexit vote. A similar drop is experienced at the beginning post Brexit vote (June 2016).
- This directly correlates to number of immigrants from Non-EU countries.

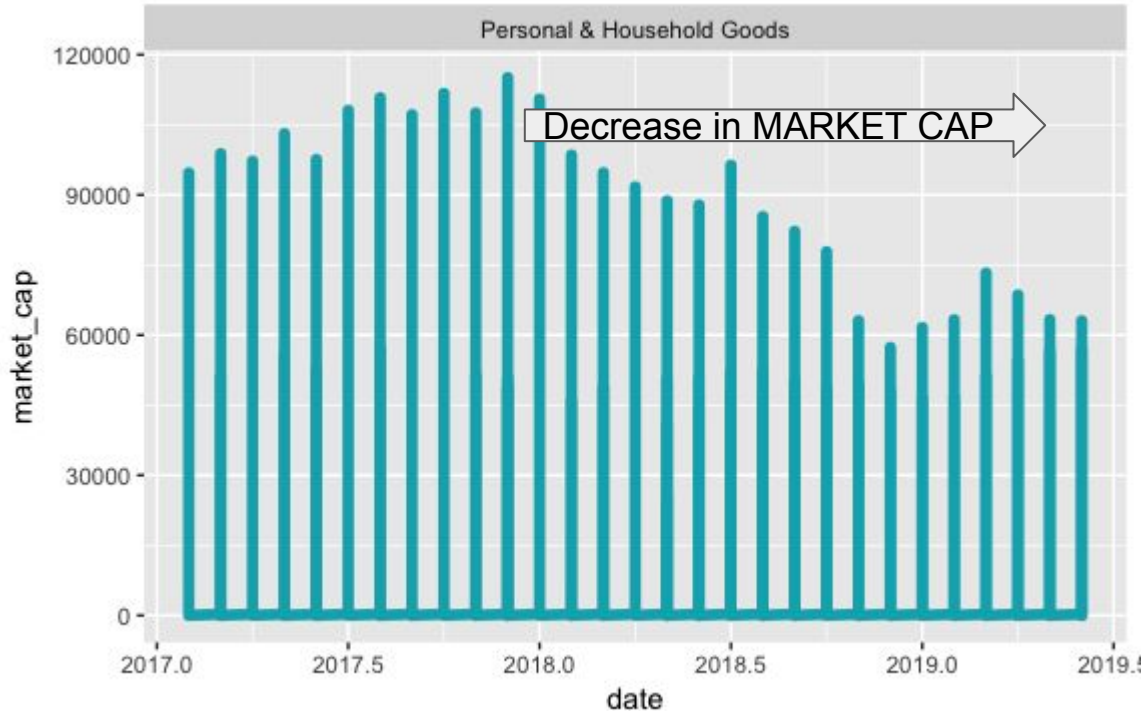


# Unskilled Industries Affected: Telecommunications



- From 2018.0 to 2019.0, there is a 37% drop which remains for the rest of 2019. This is directly related to the decrease in unskilled jobs and immigration.

# Unskilled Industry: Personal and Household Goods



- From 2018 to 2019 there is a sustained decrease of 45%.
- Many of those who work in this industry are unskilled laborers.

# Conclusion:

- The economic activity rate of East Midlands, Scotland regions impact the number of unskilled jobs in the UK the most and are most likely have a unskilled labor shortage crisis after the completion of Brexit.
- The sectors greatest impacted from this are service based sectors with a substantial decrease in the number of jobs and hefty decrease in market capital.
- The overall impact on economy is not experienced from outset. However digging deep reveals how unskilled or low skilled jobs are getting worse after Brexit

# Bibliography

Office of National Statistics. (2010). Standard Occupational Classification of 2010 Vol. 1. *UK Government Statistical Service*.

Retrieved

<https://www.ons.gov.uk/file?uri=/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2010/soc2010volume1structureanddescriptionsofunitgroups/soc2010volume1webtem77181317.pdf>



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