UK unemployment

The UK's rate of unemployment is currently around 5.8%, a figure that is the envy of the rest of Europe with the exception of Germany. However, it seems that Westminster wants to push that percentage even further down. Let's be honest: Great Britain is doing a great job. Yet there is certain restlessness among the political establishment.

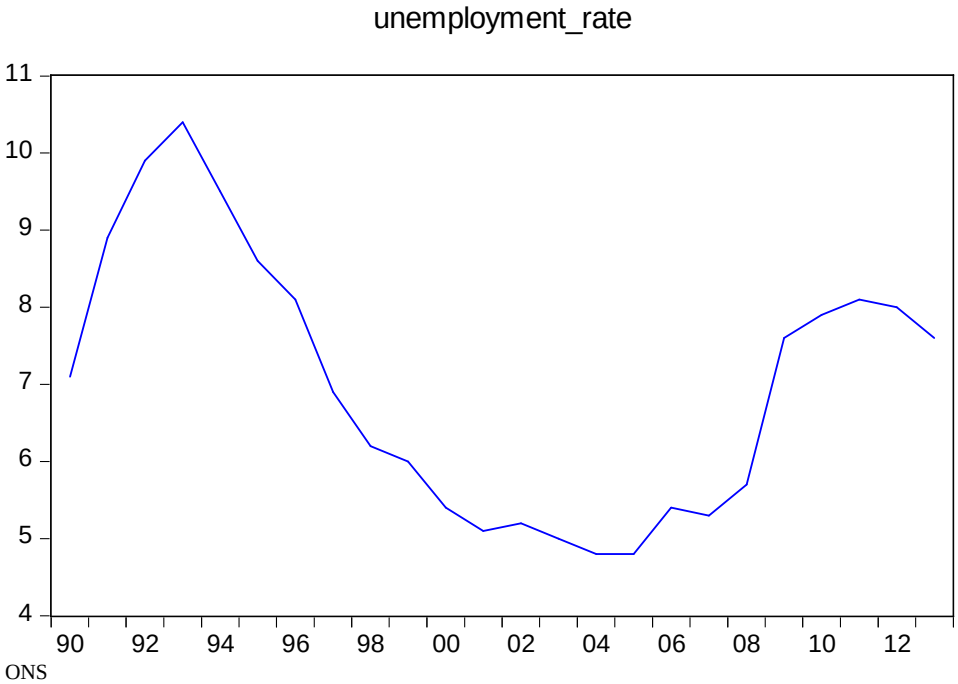
Some accuse the unusual number of migrants arriving to the British shores, whereas others want to lay their mitts on social spending. Still there is not a solid relation on how those factors affect unemployment in this country.

The opinions about the issue are rather varied. There are multiples studies advocating for a more deregulated labour market, and as many claim otherwise. I do not pretend to solve the matter, but I will try to investigate the question.

In order to study this area of the UK's economy, I obtained statistic data about a set of variables, namely: Social expenditure, net migration, oil prices, net debt, profit taxation, investment in R&D and domestic credit to the economy. The data has been obtained from reliable British sources such as the Office for National Statistic (ONS), government publications, World Bank as well as the OECD database. The data ranges from 1990 to 2013.

Data

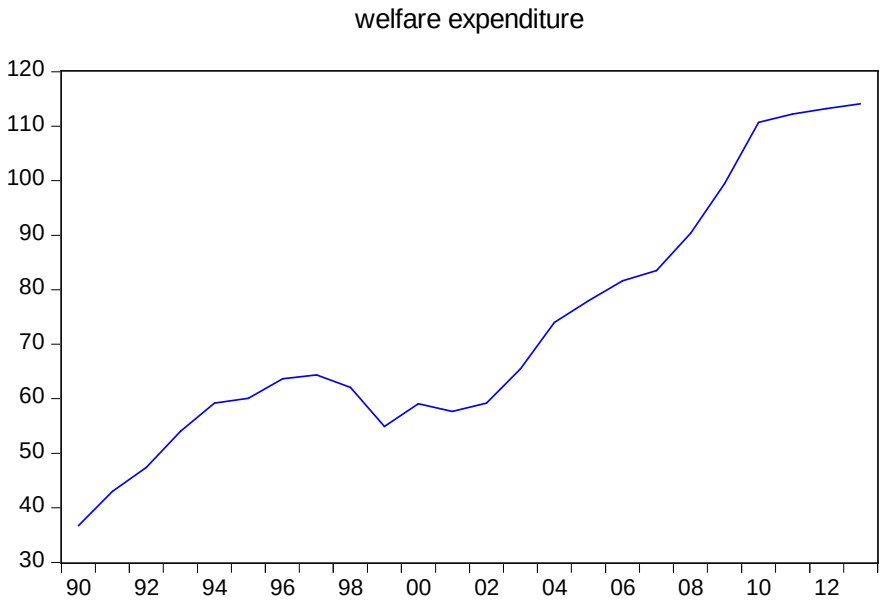
Unemployment: Measured as those people who have actively sought work in the last four weeks and are available to start work in the next two weeks or; out of work, have found a job and are waiting to start it in the next two weeks



ONS

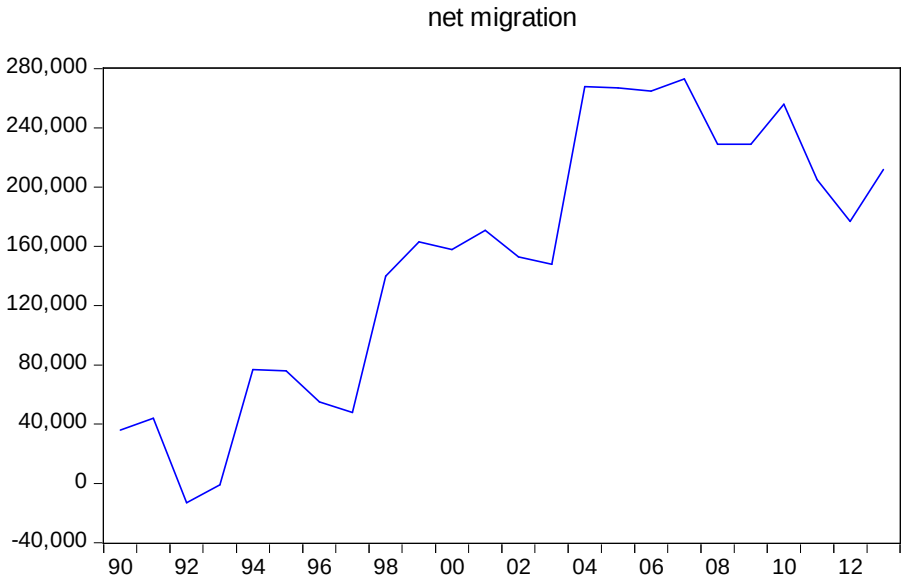
http://www.ons.gov.uk/ons/datasets-and-tables/data-selector.html?cdid=MGSX&dataset=lms&table-id=1

Social Expenditure*: It measures the main social policy areas as follows: old age, incapacity-related benefits, health, family, active labor market programmes, unemployment benefits, housing, and other social policy areas.



OECD databaase *Billon

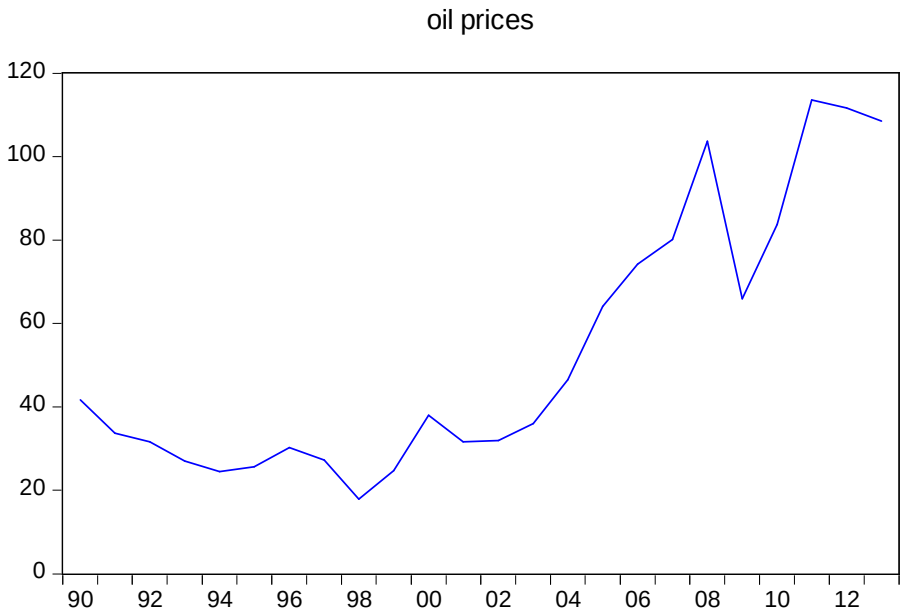
Net migration: Net migration is the difference between people moving into the UK (immigration) and people moving out of the UK (emigration). If net migration is positive then it means that more people have moved to live in the UK than have left to live elsewhere



ONS

http://www.ons.gov.uk/ons/dcp171778_335330.pdf

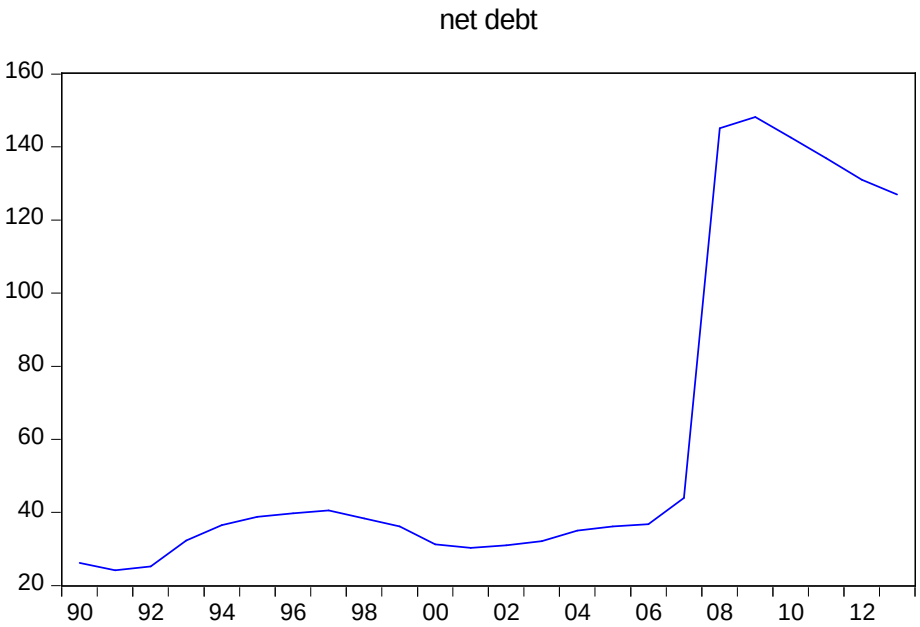
Oil price:* It is measured taking into consideration the price of Brent crude.



Parlamentary publications. *In $USA.

http://www.parliament.uk/briefing-papers/SN02106/oil-prices

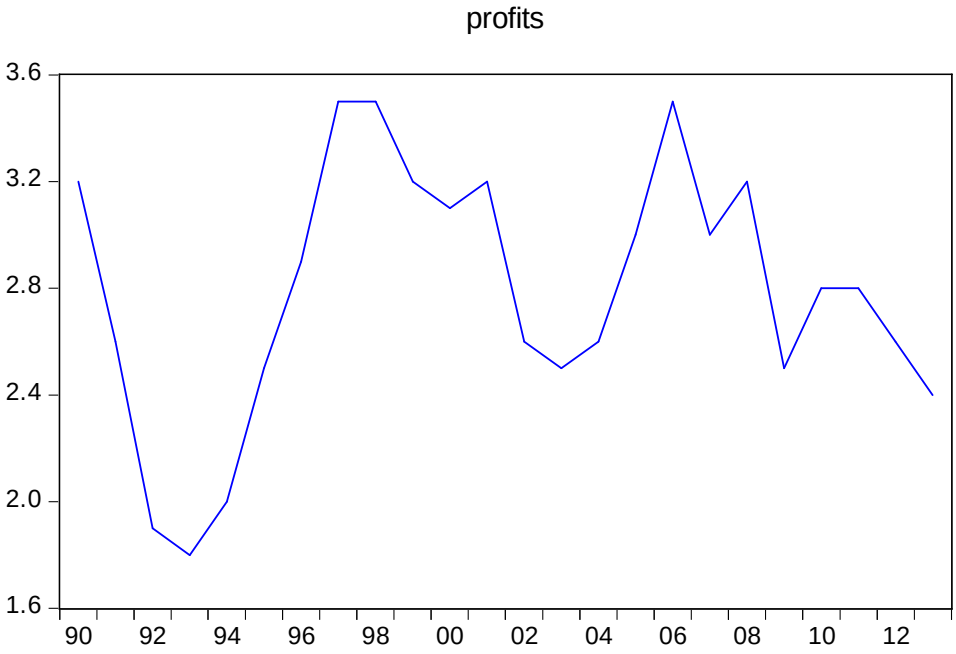
Net Debt: Net debt as a percentage of GDP at market prices



ONS

http://www.ons.gov.uk/ons/datasets-and-tables/data-selector.html?cdid=RUTO&dataset=pusf&table-id=PSF1

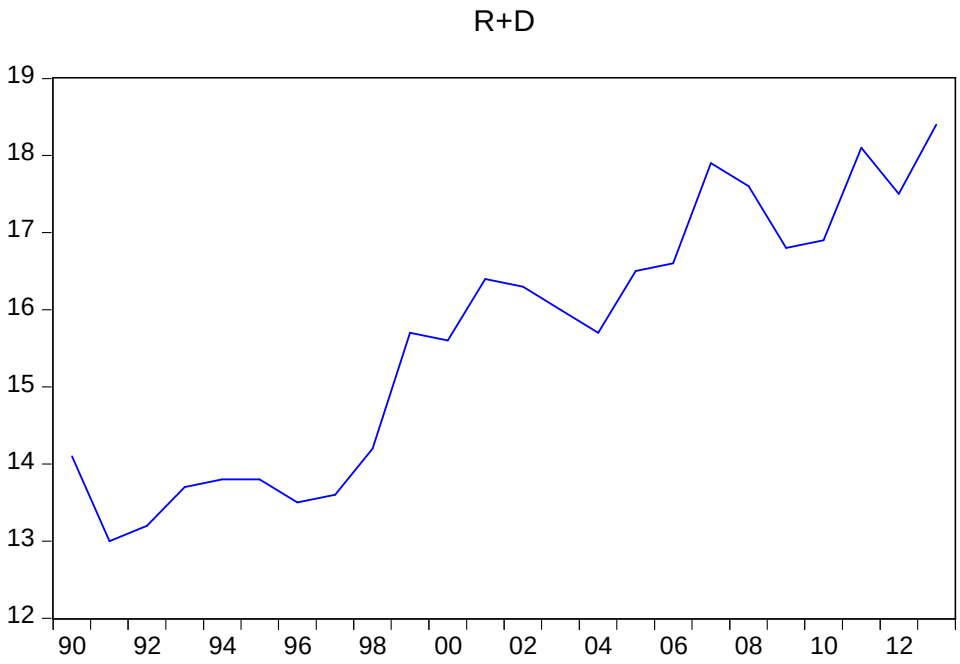
Profits: Taxes revenues on profits as a percentaje of GDP.



OECD

http://stats.oecd.org/index.aspx?DataSetCode=REV

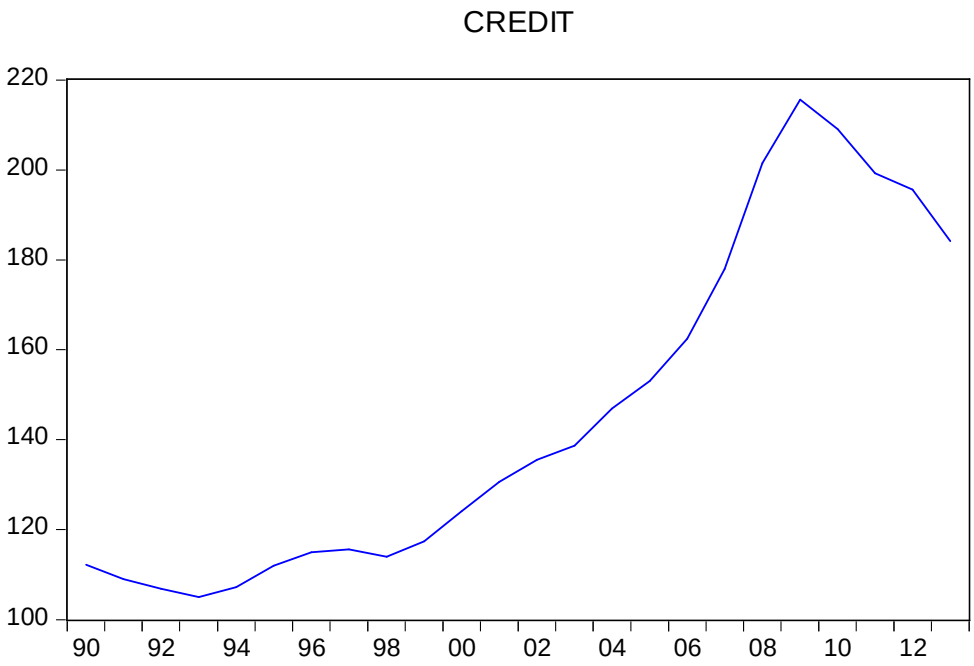
Research and development (R&D) Expenditure in R&D in cash terms. The main sectors included are computer programing and information service activities, motor vehicules, pharmaceutical industry and defence.



ONS

http://www.ons.gov.uk/ons/dcp171778_385959.pdf

Credit to the economy: Domestic credit provided by the financial sector includes all credit to various sectors on a gross basis



World Bank

http://data.worldbank.org/indicator/FS.AST.DOMS.GD.ZS/countries

Model

Using the information above mentioned, I generated the following equation:

LOG(UNEMPLOYMENT_RATE/100) = C(1) + C(2)*LOG(WELFARE_EXPENDITURE) + C(3)*LOG(NET_MIGRATION) + C(4)*LOG(OIL_PRICES) + C(5)*LOG(NET_DEBT/100) + C(6)*LOG(PROFITS/100) + C(7)*LOG(R_D) + C(8)*LOG(CREDIT/100)

Using the above econometric model, I obtained the following table whereby Eviews:

Dependent Variable: LOG(UNEM_/100)

Method: Least Squares

Sample: 1990 2013

Included observations: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.490557	1.550885	-0.316308	0.7564

LOG(WELFARE_EXPENDITURE)	0.089415	0.236052	0.378793	0.7105
LOG(NET_MIGRATION)	-0.120330	0.111362	-1.080530	0.2982
LOG(OIL_PRICES)	0.146109	0.125431	1.164853	0.2635
LOG(NET_DEBT/100)	0.316860	0.113654	**2.787945**	0.0145
LOG(PROFTS_/100)	-0.441906	0.172256	**-2.565402**	0.0224
LOG(R_D)	-1.051807	0.678740	**-1.549646**	0.1435
LOG(CREDIT/100)	-0.575050	0.464167	-1.238886	0.2358

R-squared	0.843516	Mean dependent var	-2.728402
Adjusted R-squared	0.765275	S.D. dependent var	0.224294
S.E. of regression	0.108667	Akaike info criterion	-1.325766
Sum squared resid	0.165320	Schwarz criterion	-0.929024
Log likelihood	22.58343	Hannan-Quinn criter.	-1.232306
F-statistic	10.78090	Durbin-Watson stat	1.734982
Prob(F-statistic)	0.000108		

The results have to be interpreted in percentages given the log-log transformation used in the model. The first 4 variables are not very significant statistic-wise given their T-values. However, the value of their coefficients can give an idea of how these variables affect the unemployment rate.

In the case of 1% increase in net migration, it would reduce unemployment by 0.12%. This factor would dismantle the rhetoric of some politicians who allege that immigration is the main root of UK joblessness rate. It has to be accepted that most people who come from abroad to the UK make their contributions to the society, working and at the same time consuming goods and services, boosting aggregate demand and therefore creating more jobs.
(More information here: http://www.cream-migration.org/publ_uploads/CDP_22_13.pdf).

The theory that increasing demand stimulates employment is shared by many renowned economists, among them E. Stockhammer in his paper *Capital accumulation, labour market institutions and unemployment in the medium run* (2010) and Paul Davison in *Post Keynesian employment analysis and macroeconomics of OECD unemployment (*1998).

The level of net debt in the UK has been increasing dramatically in the last few years. According to the model, it causes unemployment to increase by 0.32% if the net debt increments by 1%.

The next significant input is taxation on profits. The City of London is home of many great companies' headquarters, which are due to pay taxes in the UK. However, according to the BBC economic editor Robert Peston(28th April, 2014), the UK government is designing a scheme through which companies would be attracted to take up residence here tempted by a low tax rate system. Nonetheless, it is still to be seen what consequences this will bring about in the long run.

Pursuant to the model constructed with data from the last 23 years, increasing tax on profits by 1% would provoke a reduction in unemployment by 0.44% due probably to a better redistribution of wealth among the population, increasing purchasing power and consequently demand. Investment in R&D also has a major impact on unemployment, reducing it by 1.05%. This input might give

policy makers a glimpse of how important is research and development when tackling job losses. The last input is credit to the economy. Although is not very substantial statistically speaking as its T-value is not significant, its coefficient has a negative value, emphasizing the importance of a sound financial sector responsible for an appropriate flow of money in the economy.

Statistically speaking, the model has a significant R squared value of 0.76, indicating that around 76% of the changes in the dependent variable can be attributed to changes in the inputs. Concerning autocorrelation, the model could be more robust, but still it can be reliable given the following correlagram of residuals:

Sample: 1990 2013
Included observations: 22

Autocorrelation	Partial Correlation		AC	PAC	Q-Stat	Prob
. |* . |	. |* . |	1	0.136	0.136	0.4676	0.494
***| . |	***| . |	2	-0.403	-0.429	4.7487	0.093
. *| . |	. | . |	3	-0.152	-0.019	5.3945	0.145
. |* . |	. | . |	4	0.135	-0.007	5.9275	0.205
. |* . |	. | . |	5	0.133	0.045	6.4770	0.263
. *| . |	. *| . |	6	-0.153	-0.166	7.2531	0.298
. *| . |	. |* . |	7	-0.069	0.074	7.4228	0.386
. |* . |	. | . |	8	0.116	0.010	7.9271	0.441
.**| . |	***| . |	9	-0.222	-0.359	9.9333	0.356
. *| . |	. | . |	10	-0.117	0.072	10.536	0.395
. |* . |	. | . |	11	0.131	-0.044	11.355	0.414
. | . |	. *| . |	12	0.066	-0.100	11.588	0.479

Signs of autocorrelation can be seen (**or ***) but they do not obstruct our interpretation of the model. Moreover, the Darwin-Watson test seen in the previous table (1.734982) is also representative

Using the results attained with this model it can be concluded that the reduction of the debt burden would have a major impact in unemployment.
A significant crackdown on tax avoidance as well as overhauling the current trends in corporate taxation might have good results in unemployment. Developing new infrastructures, investing in communications and services, easy credit lines for start-ups with client-tailored low interests could be a good start. The argument of blaming migration for the existing unemployment does no longer hold, in fact, and according to the coefficients, unemployment would drop.

More information about UK investment needs can be found on the following links:

http://www.thecityuk.com/media/latest-news-from-thecityuk/greater-private-investment-needed-to-boost-uk-infrastructure/

https://www.npower.com/large-business/energy-news/npower-news/WCMS_161559

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/331071/DECC_Energy_Investment_Report.pdf

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