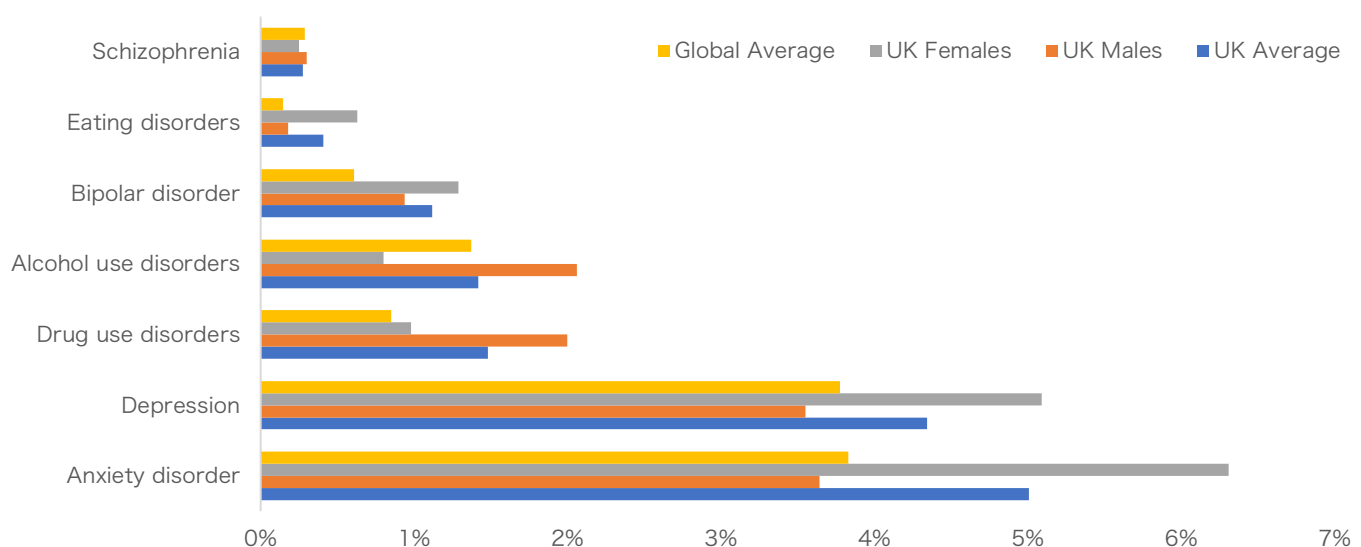# Mental Health and the UK Economy

Estimating the monetary impact of mental health illnesses on the UK economy is a complex task. There are several ways one could choose to do this, and it would rely on a large amount of assumptions or guesswork to get to a final number. In this article we would prefer to simply convince you that the impact is large and is hence something we should be concerned about. This is the goal of the first section of the paper; we would like to persuade you that mental health creates a big enough problem that governmental policies need to be designed to address the issue, and that doing so would benefit the UK economy. Next, if we assume we have done a good job in convincing you, then you will agree with us that policymakers need to create conditions within society to generate the greatest possible happiness and the least possible misery in the population. In order to do this, policymakers need to know the causes of happiness and misery. Therefore, we have chosen to study what are the causes of life satisfaction and mental health. We do this using two methods: using within-country and cross-country data. Lastly, we will discuss further work that we plan to conduct on this topic, which will be focussed on policy design and suggestions for addressing mental health in the UK.

How mental health impacts the UK economy

At Exploring Happiness, we chose mental health as a topic to study early on because it sits at the centre of happiness economics and what it is trying to achieve. Within a country there will always be a distribution of happiness scores. Arguably, we are more interested in designing policies to impact the lower end of the distribution. Surely it is more important to eradicate the misery in society for those at the bottom end of the happiness distribution, than to focus on increasing the happiness of those that sit at the top. In the end, it becomes an inequality argument; aiming to eradicate misery decreases happiness inequality and aiming to increase the happiness of the happiest in society increases happiness inequality. The only caveat to this point is that if we could design policies to increase happiness for all in society, meaning the total distribution will shift, rather than one end benefitting more than the other, then clearly, we should not abstain from doing so. Essentially, these are the two ways that policymakers should look to impact a happiness distribution: by either shifting the bottom end upwards or by shifting the whole distribution upwards.

Figure 1: Prevalence of mental health and substance use disorders, 2016[1]

Mental health affects a lot of people in the UK – 17.6% of the UK population have either a mental health or substance use disorder. And these are just the people that have been diagnosed. Figure 1 splits out mental health and substance use disorders into different types, displaying the UK and global averages. The UK figures are also

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[1] Percentages are as a share of the total population. Source: Institute for Health Metrics and Evaluation (IMHE), Global Burden of Disease.

split by gender. Notice the UK averages are higher than global averages – partly due to greater data quality and an increased proportion of cases being diagnosed and recorded in the UK compared with the rest of the world. In terms of the results for gender in the UK, women are more likely to be diagnosed with depression, anxiety, eating or bipolar disorders than males. Although males are more likely to be diagnosed with schizophrenia or alcohol and drug use disorders. One should note that the data displayed in Figure 1 only relates to cases that have been diagnosed, and that shockingly, we should expect the true values will be much higher than these.

Additionally, the results of a rather concerning YouGov poll were released this month.[2] The number of young people in the UK who say they do not believe that life is worth living has doubled in the last decade. In 2009, 9% of 16-25 year-olds disagreed with the statement that "life is really worth living", but that has now risen to 18%. Moreover, 27% of young people do not feel that their life has a sense of purpose – which is one of the most important ingredients of a happy life.[3] The results of this survey are also supported by recent trends in suicide rates among teenagers in the UK. Currently, just over 5 in 100,000 teenagers commit suicide compared with just over 3 in 100,000 back in 2010. We prefer not to speculate as to what are the main causes of these trends, but the effect of social media on young people is thought to be one of the main drivers behind this.

From the evidence discussed thus far a fair conclusion would be that mental health in the UK is a large and also fairly complex problem. It affects many people, across different age groups, genders and backgrounds, but the form of these effects can differ depending which of these groups a person fits into. Analysing how mental health illnesses impact the economy is also a complex issue. In order to simplify this, we will focus on the main area of the economy that mental health illnesses have an impact: the labour market. By the labour market, we refer to those who are in work (employees), those who are looking for work (unemployed people) and those who offer work (employers). Employment is central to many people's lives and identities. Happiness research has shown that being made unemployed can have a significant impact on a person's happiness; this is most prevalent when an individual faces long-term unemployment. The majority of the effect is due to the loss of a sense of purpose that employment offers and the lack of social interaction whilst being unemployed.

Figure 2: Prevalence of depression by level of education and employment in the UK, 2014[4]
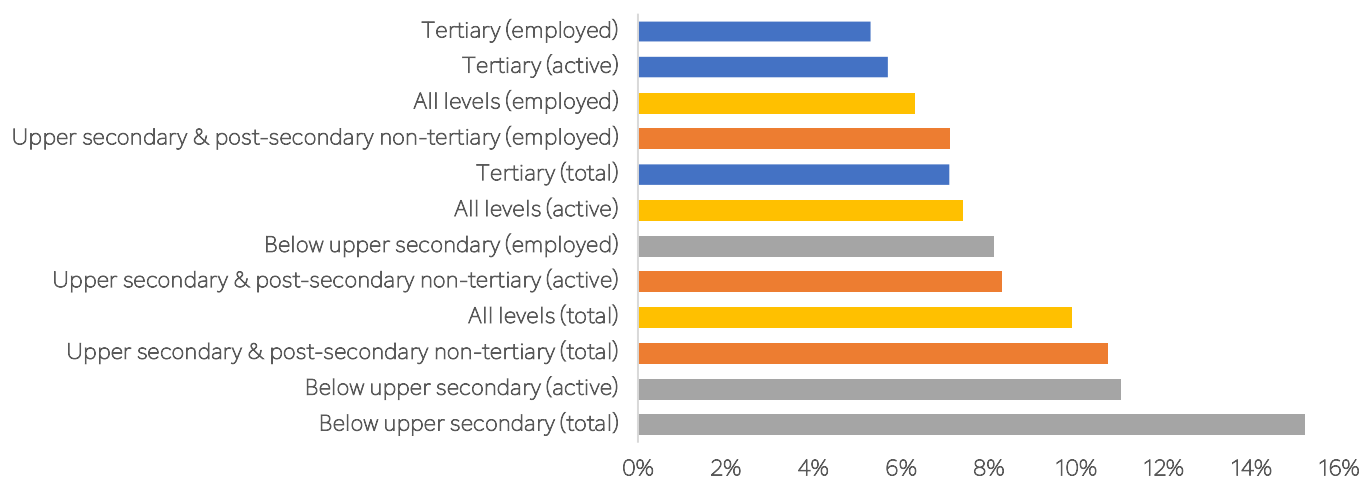

Figure 2 highlights the effect of unemployment on an individual's mental health and also shows that their level of education matters too. For all levels of education, the prevalence of depression is much greater for those seeking a job and therefore currently unemployed (labelled 'active' in the graph), than those currently employed. Unemployment not only decreases an individual's happiness level, but also increases the likelihood that a person will suffer from a mental health illness. The data in Figure 2 confirms this. Given that depression is known to affect motivation, and therefore aspiration levels, it is clear to see how this problem could form a vicious cycle (see Figure 3 below). This vicious cycle, without any form of intervention, can leave people in an unemployment trap which is extremely challenging to get out of.

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[2] Prince's trust YouGov online poll of 2,162 adults aged 16-25 conducted between 13/11/18 and 02/12/18.

[3] See Layard (2011).

[4] The percentage on the x-axis represents the share of adults aged 25-64 years old who reported having depression in a large-scale survey study. Source: OECD Statistics.

Individuals that are unemployed are a financial burden to the government through unemployment benefits. Offering apprenticeships or short-term employment contracts to those that are in long-term unemployment is a potential solution that would increase efficiency of government spending. These individuals would be back into work, earning a wage, and the government funds could be spent by treating their mental health illness. Therefore, two issues are being addressed at the same time: long-term unemployment rates would be dropping, and government funds are spent more efficiently by treating mental health illnesses. The mental health treatment and this short-term employment policy combined will increase the probability of an individual finding a permanent job thereafter and will decrease the probability of future mental health illness. This would be an effective way of breaking the unemployment trap.

Figure 3: The vicious cycle of long-term unemployment and mental health
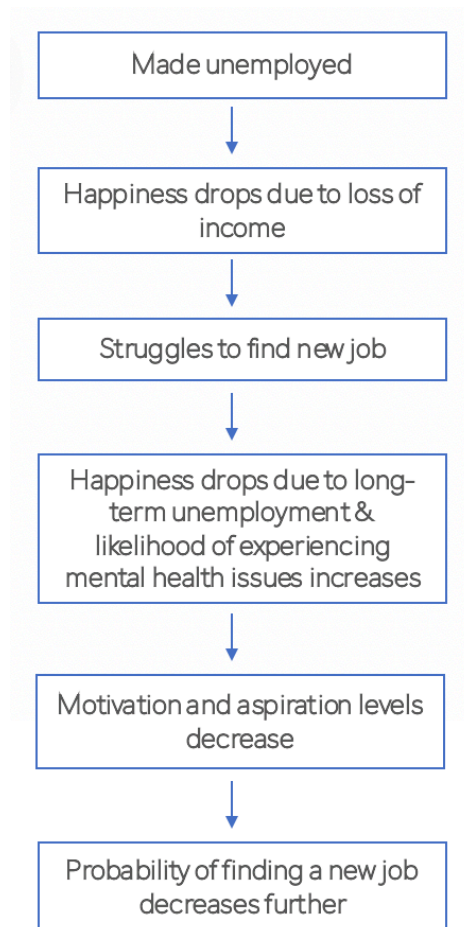
From a labour market perspective, we are also interested in those that are currently employed but struggling with mental health illnesses. Again, this can be viewed as an efficiency problem but this time the majority of the onus is on the employer to make the right decisions, leading to benefits for their firm and the wider economy. The current view is that the best approach is a flexible one from the employer. Flexibility allows employees time to sort through their mental health difficulties. It is important to create a collaborative approach between the employer and the employee to solve the issue. Solutions will not be the same for everyone. Some individuals will need time off to be able to come back refreshed to continue with their role within the firm. Other individuals would find this isolating and simply require increased support. Destigmatisation of mental health within the firm will also help to increase the effectiveness of this. This approach will increase employee loyalty to the firm, leading longer tenures and therefore an increased likelihood that employees will become experts in their role. Additionally, more loyal employees are more likely to work hard, as they respect their bosses.[5] The opposite of this approach leads to greater staff turnover, increased costs in training of new staff, fewer experts, lower staff loyalty and a lack of cohesion between staff within the firm.

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[5] See Wright et al (1993).

The labour market is the area of the economy that is most directly affected by mental health illnesses. As we have discussed, all areas of the labour market are impacted: employees, employers and the unemployed. This leads to what we call in economics 'first order effects' on the economy, or primary effects – meaning this is where the initial impact takes place. There are many second order effects that occur off the back of this. For example, the aforementioned unemployment trap will lead to lower consumption and investment. As such, policies aimed at providing solutions will have economic benefits that go beyond the labour market. It should lead to greater efficiency in the use of government resources, a more productive workforce, with more stable firms that nurture their employers, greater consumption and investment. These can lead to further order effects (e.g. increases in innovation), that can snowball further than one can imagine at this time. The message is that positive policies can reinforce further positive economic outcomes.

Life satisfaction and mental health correlations using within-country and cross-country data

In this section of the paper we compare two methods of estimating what are the main contributing factors that lead to a happy life: using cross-country and within-country data. The results show that using cross-country data (Table 1 in Annex) is a less effective approach than using within-country data (Table 2 in Annex). In Table 1 and 2, conditional correlation coefficients have been computed. A conditional correlation coefficient is a statistic that calculates the relationship between two variables whilst considering that other variables will also play a part. A positive value means that the two variables move in the same direction (e.g. happiness goes up as income goes up). All of the coefficients are bound between 1 (strongest possible positive correlation) and -1 (strongest possible negative correlation). As an example, in Table 2 the conditional correlation for life satisfaction and income produces a coefficient equal to 0.16 for the USA. This represents the correlation between these variables whilst considering that the other variables in the table also effect life satisfaction. We have computed the conditional correlation coefficients in Table 1, whilst the coefficients in the Table 2 are part of a piece of analysis conducted by the United Nations (UN) for their World Happiness Report in 2017.

In Table 2, the conditional correlations are calculated from large scale surveys of individuals within a country. Within each survey the researchers have a lot of information about each individual which took part. As such, the results are extremely persuasive in highlighting the importance of mental health. For all countries the negative impact of having a mental health illness on life satisfaction is greater than the impact of having a physical illness (except for Indonesia where the impact is the same). In addition, the size of the coefficient is larger in all cases (except Indonesia) for mental health than the coefficient for income.

In Table 1, we have computed conditional correlations using three different measures for both happiness and mental health, across three different samples of countries.[6] The coefficients produced are informative and intuitive at a cross-country level but are less useful for policy analysis than the coefficients in Table 2. For example, the effect of income on life satisfaction is much more pronounced when we use the global sample of countries. We know that the wealthiest countries in the world have higher life satisfaction scores than the poorest countries. Notice that this effect gets smaller as we remove these countries from the sample, as shown in the results for the sample of European and Post-Communist countries. Hence, the results make sense, but they provide little impetus for policy, other than the fact that the poorest economies should continue to target income growth.

The three different mental health variables perform quite differently. The first variable labelled 'Mental Health' is the percentage of people diagnosed with either a mental health or substance use disorder within a country and this performs the worst of three. Our expectation is that part of this is due to better quality of data collection and an increased proportion of cases being diagnosed in more developed countries. These are the countries that tend to have higher life satisfaction scores due to greater income and as such the coefficients produced are counterintuitive. The other two variables used for mental health produce more intuitive results. The depression variable is the percentage of the population that is diagnosed with having depression. The suicide rate variable is the amount per 100,000 people in each country that have committed suicide. The results become more comparable to the coefficients in Table 2 as we remove the poorest countries from the dataset. The final sample of 40 post-communist and European countries produces the most intuitive results.

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[6] Our data is linked on the website and please email us if you would like us to share the code for how we computed the coefficients.

To summarise, for policy analysis within-country data is more useful than cross-country data when estimating the determinants of life satisfaction and mental health. Using within-country data you get a much more granular view as to what matters most for the people that live in this country. However, the results using cross country data do become more informative and therefore useful for policy analysis when using subsets of countries that are more comparable to each other.

Further Work

In this article we have shown that mental health is an issue that has a large impact on the UK economy. When doing so, we mentioned some examples of the types of policies that are likely to be effective in providing solutions to this problem. However, this was not the main focus of this article. In a future article we will concentrate on this in greater depth. By outlining a range of mental health related policy ideas that will look to positively impact the UK economy. We will look to discuss the practicalities of these policies, how cost effective they are and through which channels they will benefit the economy.

Annex

Table 1: Cross-country conditional correlations[7]

Global Results (n=114)						
	Income	Unemployment	Physcial Health	Mental Health	Depression	Suicide Rates
UN Happiness Indicator	0.59***	-0.4***	0.19**	0.01		
UN Happiness Indicator	0.64***	-0.35***	0.21**		-0.16*	
UN Happiness Indicator	0.63***	-0.43***	0.08			-0.17*
Subjective Wellbeing Measure	0.57***	-0.44***	0.16*	-0.08		
Subjective Wellbeing Measure	0.59***	-0.40***	0.19**		-0.12	
Subjective Wellbeing Measure	0.57***	0.45***	0.07			-0.13
Sustainable Wellbeing	-0.34***	-0.1	0.61***	-0.11		
Sustainable Wellbeing	-0.34***	0.08	0.63***		-0.27***	
Sustainable Wellbeing	-0.27***	-0.1	0.45***			-0.27***
Results for countries with GDPPC PPP greater than $10,000 (n=43)						
	Income	Unemployment	Physcial Health	Mental Health	Depression	Suicide Rates
UN Happiness Indicator	0.44***	-0.57***	0.02	0.37**		
UN Happiness Indicator	0.57***	-0.46***	0.11		-0.03	
UN Happiness Indicator	0.58***	0.50***	0.03			-0.14
Subjective Wellbeing Measure	0.50***	-0.63***	0.03	0.29*		
Subjective Wellbeing Measure	0.61***	-0.57***	0.9		0.03	
Subjective Wellbeing Measure	0.62***	-0.59***	0.03			-0.13
Sustainable Wellbeing	-0.39**	-0.09	0.48***	0.2		
Sustainable Wellbeing	-0.34**	0.07	0.56***		-0.33**	
Sustainable Wellbeing	-0.31*	-0.14	0.39**			-0.31*
Results for European and Post-communist countries (n=40)						
	Income	Unemployment	Physcial Health	Mental Health	Depression	Suicide Rates
UN Happiness Indicator	0.36**	-0.37**	0.02	0.14		
UN Happiness Indicator	0.59***	-0.28*	-0.03		-0.57***	
UN Happiness Indicator	0.47***	-0.38**	-0.09			-0.21
Subjective Wellbeing Measure	0.30*	-0.45***	0.03	0.16		
Subjective Wellbeing Measure	0.54***	-0.38**	-0.02		-0.55***	
Subjective Wellbeing Measure	0.45***	-0.46***	-0.11			-0.24
Sustainable Wellbeing	-0.48***	-0.27*	0.48***	0.21		
Sustainable Wellbeing	-0.41**	-0.21	0.51***		-0.34**	
Sustainable Wellbeing	-0.26	-0.28*	0.31*			-0.23

Table 2: Within-country conditional correlations[8]

	USA		Australia		Britain (BCS)		Britain (BHPS)		Indonesia	
	Life satisfaction	Misery	Life satisfaction	Misery	Life satisfaction	Misery	Life satisfaction	Misery	Life satisfaction	Misery
Income	0.16	-0.12	0.09	-0.09	0.08	-0.05	0.09	-0.07	0.18	-0.17
Years of education	0.05	-0.04	-0.03	0	0.03	-0.02	0.02	-0.01	0.05	-0.06
Not unemployed	0.05	-0.06	0.04	-0.06	0.03	-0.03	0.06	-0.07	0.02	-0.03
Partnered	0.34	-0.19	0.14	-0.1	0.21	-0.11	0.11	-0.08	0.04	-0.04
Physical illness	-0.05	0.05	-0.17*	0.16*	-0.06	0.05	-0.11	0.09	-0.07	0.07
Mental illness	-0.21	0.19	-0.18	0.14	-0.11	0.09	-0.32*	0.26*	-0.07	0.08
Female	0.08	-0.06	0.08	-0.06	0.11	-0.06	0.05	-0.04	0.07	-0.06

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[7] The stars represent the level of significance of that coefficient. 3 stars represents significance at a 1% confidence interval, 2 stars is a 5% confidence interval and 1 star is a 10% confidence interval.

[8] Britain has two results using two separate surveys: the British Cohort Study (BCS) and the British Household Panel Survey (BHPS)

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