

Video games and unemployment: Are gamers noobs as workers?

Petr Parshakov

Dennis Coates

Sofia Paklina

Abstract

Video games are treated as an innovation in leisure activity, which makes being unemployed more attractive than before, especially in rich countries because of cohabitation. In this study we use eSports prizes as a proxy of video games popularity to analyze its influence on youth unemployment. We use the total prize money won by representatives of a country in a season in a panel regression model with country-year as a unit of observation. Our preliminary results shows positive influence of video games popularity to unemployment.

Last decades we observe huge transformation in the leisure activities. Digitalization affects different human activities, including leisure. The nature of digital leisure goods makes them easy to grow. For example, Facebook, started in 2004, grew from 12 million users in 2006 to 2.23 billion in 2018. Video games are another example, World of Warcraft started in 2004 and grew to 10 million monthly subscribers by 2010; in 2017 the number of frequent eSports viewers and enthusiasts amounted to 143 million, which is almost equal to the population of Russia (147 million).

Growing popularity of video games affects the work-fun time distribution. Video gaming is an innovation in leisure activity which makes leisure, and, therefore, being unemployed more attractive. This result in a decrease in labor supply, which is negative shock of labor market. However, it might be the case that through playing video game and related activities employees acquire “digital” skills like computer literacy. Such skills can potentially increase productivity of workers. The report by the World Bank argues that the lack of digital skills might lead to greater inequality in a society (World Bank, 2016). Now these skills are more in demand and gives more opportunities for companies that have vast data available (The Boston Consulting Group, 2017). With this regard, video games might potentially benefit to the quality of labor supply.

In our paper we focus on the first part of this story. We analyse if video games popularity increase unemployment in countries. Our focus on time allocation is in line with papers of Mincer (1962) and Becker (1965), which emphasize that labor supply is influenced by how time is allocated outside of market work.

In most of the similar studies the authors highlight the difficulties in measuring work and fun time allocation, since modern working activities often do not require specific place or equipment. For that reason the authors use self-reported survey data on time spend playing video games. However, people might underestimate such time even they are not intended to do so. In our study we use data on the eSports prizes by country to measure video games popularity, which means that we observe data for professional eSports players. However, since Bernard and Busse (2004) show that in traditional sport talent is distributed uniformly, and later Parshakov and Zavertiaeva (2018) prove this also in the context of eSports, we assume that total prize won by country correlates with the number of gamers. Number of gamers, $\Pi T \text{ } \epsilon \text{ } \text{K} \text{ } \text{T} \text{ } \text{O}$ reflects the popularity of video games. So, we use eSports prizes by country as a proxy of video games popularity.

We obtained the information eSports prizes from the eSports Earnings project. This resource is based on freely available public information on different tournaments in eSports, including the

nicknames of winners in a particular tournaments and the sums won. The sample consists of 11,865 player-year observations for the period from 2000 till 2015. The data is aggregated to country-year level. The data on GDP per capita, export, import, labor productivity, internet users and unemployment ratios is taken from World Bank statistics¹.

To estimate the effect of video games popularity on unemployment we use regression analysis. Since one might argue that video game popularity is endogenous to unemployment we estimate two stage regression with IV. Our instruments are lags of the covariates from the main equation and internet popularity measured as percentage of people with internet access. Since our dependent variable on the first stage regression (prize money) is left-censored by zero, we use tobit regression model.

Our main result is that video games, as an innovation in leisure activities, affect work-fun time distribution and increase unemployment rate in countries. In general, this proves the idea of Greenwood and Vandenbroucke (2005), Vandenbroucke (2009), Kopecky (2011) and Aguiar et al. (2017) that leisure innovations affects labor supply.

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¹ The data and replicating R code is available upon a request.