

Problem Set #1

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1 A brief summary of research interest

I am interested in behavioral economics in crisis period and analyzing decision makers' behaviors in any section of economy to reveal their accumulate effects. In this regard I like to dig into game theory, now-casting methods and working with big data. I think by using big data and employing method of game theory I can categorize people's decision, specially in crisis. In the following paragraph, I will elaborate on the path which guides me to develop aforementioned interest.

Working in market, among people without academic background, taught me great lessons. While working in accounting company as an accountant and financial advisor, majority of people asked me to increase their wealth and they all had suggestions more accurate and tenable than mine. So it made me to think in a different way than I used to. I always try to analyze economy and financial markets based on historical data and the most up-to-date one without paying attention to the market decision makers and main costumers, in general, to the people who play the main role in the market. But as I mentioned, nonacademic people who gave me great recommendations analyze market based on behavior rather than statistics. Therefore, I decided to find the more reliable way to analyze this important factor which lead me to game theory and big data.

For now-casting and monitoring economic conditions we need to use real-time data flow in high volume [Bok et al. \(2018\)](#) which is called big data and for analyzing this type of data programming and web-scraping skills are crucially important because data should be not only comprehensive but also relevant. In this regard, following initial formula summarize the raw idea which I mentioned in previous paragraph: **phase one** is modeling decision makers' decisions in crisis by using game theory

$$D_t = d_f + d_h + d_g + d_o + d_{fi} \quad (1)$$

In the first formula D_t is total affections of decision makers in all sectors, d_f is firms decision makers affections on all sectors, d_h is households decision makers affections on all sectors, d_g is firms decision makers affections on all sectors, d_o is overseas decision makers affections on all sectors d_{fi} is financial decision makers affections on all sectors. For formula 1 we use "Five-sector model" [Buultjens \(2000\)](#) as shown in figure 1 and 2

In the second phase, we nowcast the near future by using the outcome of first phase as follow:

$$y_t = \beta_1 D_{Tt} + \beta_2 x_t + \varepsilon_t \quad (2)$$

where y_t is the economic variable of interest in the economy, D_{Tt} is the outcome first step, and x_t is the vector of other variables affecting the outcome variable. β_1 and β_2 are the coefficients and ε_t is the vector of residuals.

2 Research area limitations

After doing research about my research area I faced some problems with regards to choosing my research interest. reading game theory books and lecture notes and watching YouTube videos are really interesting for me but I found out doing research related to game theory is really challenging for following reasons:

1. People who work in this field are mostly Mathematicians. So, working and competing with them in the job market and publishing articles is even more challenging. Therefore, I will need more time to build

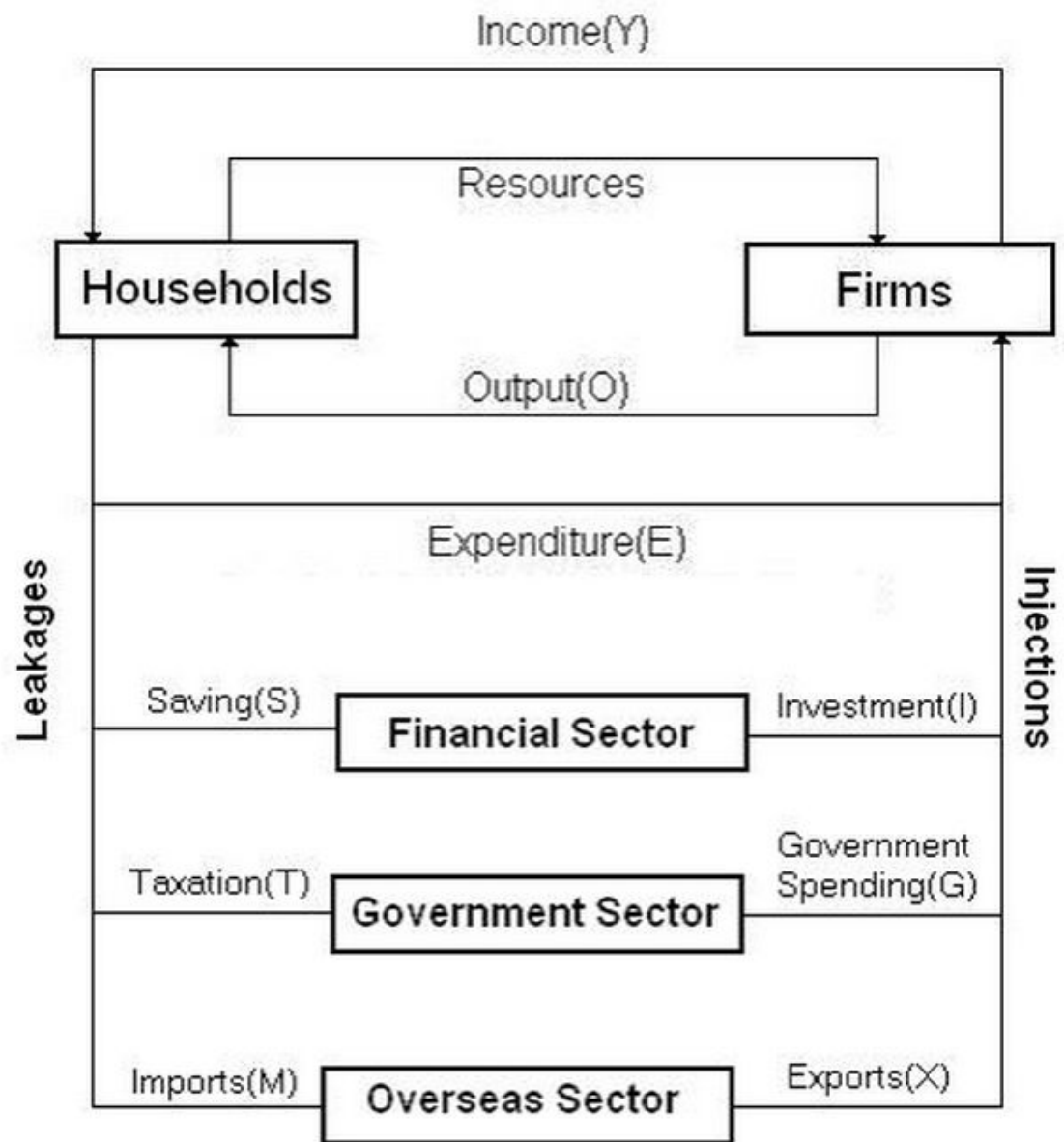


Figure 1: five sector circular of income.

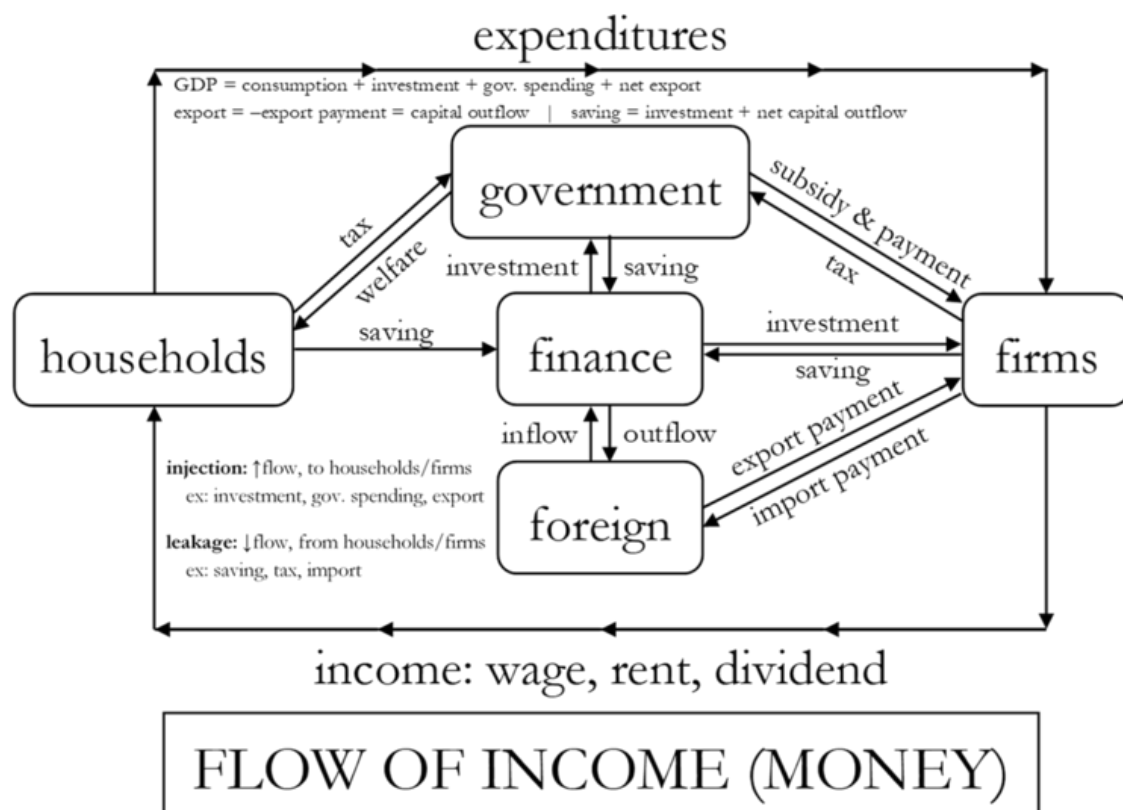
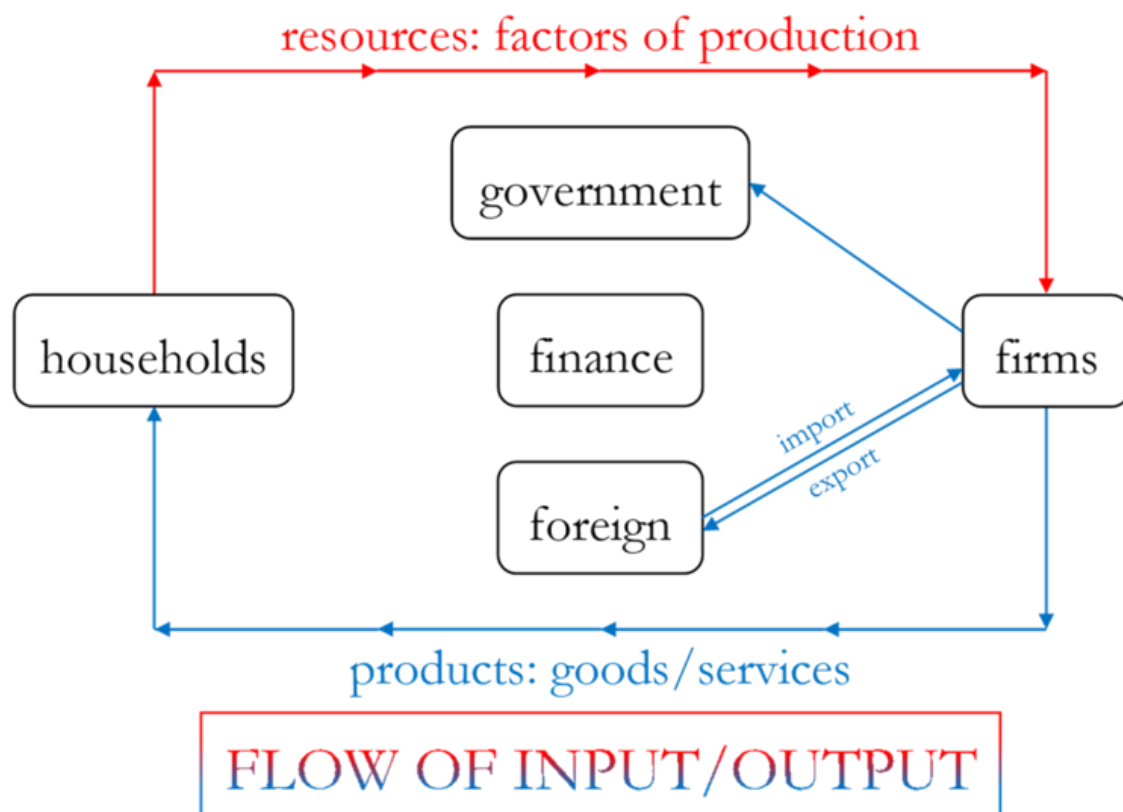


Figure 2: Five sector circular flow

such a mathematical background.

2. In addition to the math background, as I mentioned before, it is time consuming to build the knowledge during Phd periods. So I decided to search about other research areas that I am already familiar with.

3 My current assessments

3.1 Public Economics

I found out for doing research in public economics, I should be a citizen to get access the data. So, I drop it from my list.

3.2 Political Economics

I have no idea about political structure of USA. So, I don't know if I can design a good research questions.

3.3 Education, Health Economics

I'm not interested.

3.4 Development

I'm not interested.

3.5 Public finance

I'm not interested.

3.6 IO

Again, I would need to build a powerful math background.

3.7 Monetary Economics

I have general idea about this branch but I heard Macro is hard and we should try Applied micro. So, I have not finalized my decision on this one yet.

3.8 Macro finance and asset pricing

I love this topics But I need to gather more elaborated information about it. One problem related to this topics is that no one works in this field in our department. I did not check the research interests and areas of faculties of finance department to assure someone would help me to deal with the challenges.

3.9 Labor Economy

I'm not interested.

3.10 International trade

I like trade and now I'm doing this course with Dr. Hauk. So I'm still working on this one.

3.11 Macro, Growth

I will have this course next semester. I cannot wait till then so I think I should talk to Dr. Philipe about this topic to finalize my decision as soon as possible.

References

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- Buultjens, Jeremy. 2000. *Excel preliminary economics*. Pascal Press.