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| Tutorial 2(Week starting on 7-mar-2022) |

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| **Objectives**   * Study the concept of inequality * Work with the Gini index and take the first steps toward calculating it * Reproduce graphs and tables from a research paper   **Working materials**   * **Alfani G. [2015]** “Economic Inequality in Northwestern Italy: A Long-Term View (Fourteenth to Eighteenth Centuries)” *The Journal of Economic History.* 75-4, 1058-1096 * **Excel** * You will need the **data base** “Datos ejercitación 2” which can be found in the virtual campus[[1]](#footnote-1). |

**Exercise guide**

The exercises marked with an asterisk (\*) are compulsory and must be submitted by email[[2]](#footnote-2) **before 12.00 on Wednesday 16th March**. To the mark obtained on the evaluation of this assignment, **0.05 points will be subtracted for each minute late**. Consult the course program with regards to the formalities of the presentation.

1. Explain in just a few words what question is Alfani [2015] trying to answer and how he attempts to do so. What are the main results?
2. (\*) In his paper, Alfani [2015] uses the concept of *estimi*, but he mentions that said source has some issues. Explain what bias is introduced and what the author means with the phrase on page 1064 “*Although absence of these poor households biases my inequality measures towards equality,* ***the estimates are a lower bound on inequality***”.
3. What is the Gini index? What does it mean to divide the population into deciles? And that someone is in the 10th decile? What issues does the author mention regarding the use of said index?
4. Replicate Figures 2a and 2b and interpret them.
5. (\*) Replicate Figure 3 from Alfani [2015]. Remember that the graph must be self-contained, in other words, one must be able to interpret what the graph shows without having read the entirety of the research paper. How do we interpret the graph? What is the main conclusion that can be obtained from it? Compare it with Figure 2.
6. Calculate the Gini index for the city of Padua in the year 1549. What conclusion can be drawn?
7. (\*) Calculate the Gini index for the city of Padua in the year 1549. What conclusion can be drawn from the comparison between the index on 1549 and on 1615? Did inequality rise or fall?
8. Alfani attempts to shine a light on the somewhat overlooked front side of the Kuznets curve, where inequality plateaued until reaching the industrial revolution when it grew, supposedly as the consequence of rapid development. Indeed, mostly for lack of data, not a lot could be studied about this period’s inequality, with another analysis of a major area being that of Holland by Van Zanden. He takes tax-collection records which list taxable properties across various years and cities and are quite complete sources. The results appear to discourage approaching the Kuznets curve with too broad a period in mind, since inequality seems to have grown everywhere in northern Italy despite stagnation and more likely due to more extractive institutions and demographic change.
9. His sources are limited in two major ways. First, the estimi usually don’t include exempt property like religious institutions of feudal estates which Alfani says is negligible since feudal estate was a tiny portion of the total and religious institutions weren’t too rich and they do include property acquired by these institutions after the estimi was introduced. Second, since the estimi record taxable properties, only people with some properties are included in the database and there is no accounting for the homeless and the poorest. When defending his study from this criticism he says whatever the estimates arrive at is a lower bound, or a minimum, of inequality for the periods and regions analyzed and adding the propertyless (estimated to be 9.2 percent of the total) means adding to the lowest deciles a group whose wealth approaches zero. In a previous paper from 2010, he states that that difference increases the Gini by 8 percent. (“Wealth Inequalities and Population Dynamics in Northern Italy During the Early Modern Period.” *Journal of Interdisciplinary History* 40, no. 4 (2010a): 513–49. (Page 522))
10. The Gini index is simply a measure of how much a society deviates from a perfect distribution of wealth. It takes the total population and divides it into 10 parts with the same population in them and compares the amount of wealth contained in each portion, from the smallest to the biggest, and is plotted cumulatively. Someone in the tenth decile, for example, would be one of the poorest in the distribution. The coefficient ranges from 0 to 1, so a coefficient of 0 means a society that is perfectly equal and 1 means a society that’s extremely unequal. An issue is the fact that a coefficient says nothing about the real distribution of wealth and two equal coefficients could result from very unequal graphs.
11. Graphing these two sets of data (in the excel file) we can interpret, and the paper also notes, that inequality tended to grow both in rural and urban contexts. The urban chart looks extremely similar to the overall trends while the data for rural inequality returns more varied results with some cities being very stable and some others jumping widely in inequality, which could be related to specific trends in population migration to cities which one could imagine the highest strata have no incentive to leave the rural area while the poorest might want to leave so taking out the lowest deciles might cause continued equality even though if they had stayed inequality would have grown. (Upon further thought that supposition seems unlikely, but we are not sure of the causes of the trends in rural areas) Or it could be related to military conquests in some way.

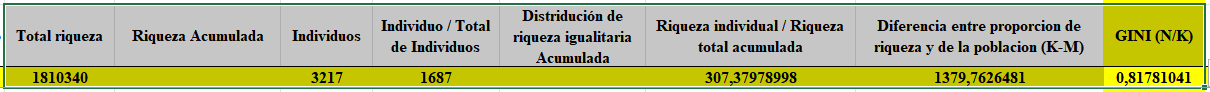
(It looks better in excel) We can interpret, based on this graph, that since 1450 the share of wealth owned by the top decile increases for most cities, which points to a trend of deepening inequality. This condition of the wealthiest never drops below 40 percent of total wealth. Comparing it to figure 2, we can see the trends for the richest run almost parallel to the Gini index over time, both of which decrease until 1450 and keep rising afterwards. As is also suggested by the paper, the 1450 mark looks like a turning point that is related to the years after the black plague having an equalizing effect.

1. 7. We can conclude from comparing the two results for Gini indexes that inequality was higher in 1615 than in 1549. We see that total wealth decreased meanwhile from 1842249 to 1810340 while population increased as well.

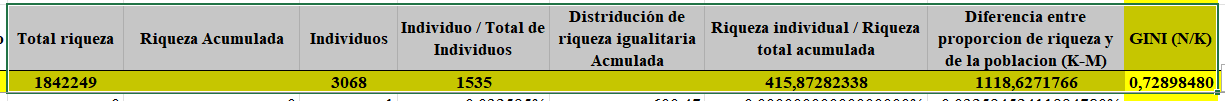
1549: 0,72898480

1645: 0,808962219

1549:



1615:



(It can be better appreciated in the excel file.)

We also divided them into deciles (although we couldn’t come up with a formula to do it so it’s rough) and tried to analyze that but the calculations didn’t work too out so we are going to have to look into it further some other time.

While we were at it, we chose to also calculate coefficients of variation for both cities to check how dispersion around the mean might have changed and, indeed, if our calculations are correct, 1615 shows more unequal distribution with a CV of 2.9, while in 1549 it was lower, at 2.54. This could have been better inspected with data on deciles if only we had done them correctly.

1. This data base was made from the information available on the website: <http://didattica.unibocconi.eu/mypage/index.php?IdUte=49642&idr=19703&lingua=eng> [↑](#footnote-ref-1)
2. Check the course’s syllabus on presentation [↑](#footnote-ref-2)