Are National Data Meaningful?
Brief Note for Ec102 students

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Abstract

Very often we use data defined at national level to compare policy choices. This brief note shows that regional differences among regions in the same country may make national data misleading.

1 Introduction

During Ec102 classes we very often compare national data in order to understand differences and similarities among countries. This data are very easy to find on the web and you too have used them (implicitly or explicitly) in the last homework. But what exactly is a country? Is there a reason why national borders should represent the borders between people starving and people having parties? If people in cities tend to need more money than people living in the countryside, should we consider people living in a small urban country such as Monaco or Hong Kong *richer* than the neighboring countryside French and Indonesian just because the average income in Monaco is higher than in France? If a poor region is annexed to a rich country after a war, does this make this poor region automatically richer and the rich country automatically poorer? Questions like this can make us start doubting the statistical relevance of national level data. One way many political and governmental institutions use these data is to apply different policies to different countries on the base of their GDP, their population, etc. A problem that may arise in this case is that regional differences can make the policy chosen be the wrong one for most (if not all) the country. Clearly a policy designed for big countryside regions like US's Midwest is not well-tailored for a place where there is a big rich city and a very large desolated desert around, though the average values of population density and income may well be the same. Of course one may argue that indexes of inequality between individuals in a country are taken into consideration (the Gini index or coefficient is a very popular one) but what if a country appears to be in the mid-range but it is actually partially very rich and partially very poor in terms of geographic areas? Nothing guarantees that the Gini coefficient is not different in different areas. Tyeing your policy to both income and Gini

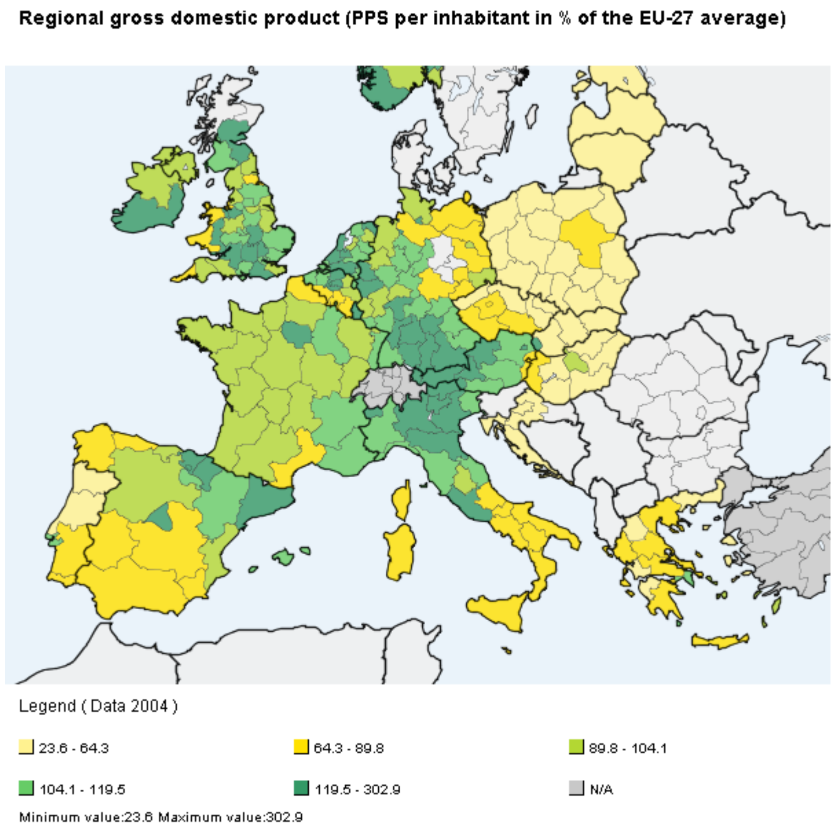

Figure 1: Per Capita GDP in European Regions

index can be still the wrong thing to do since you are using national average values that may have nothing to do with the actual values of the different place within a country. The next section shows an example that should make this argument very clear.

2 Italy and Germany in the EU

The European Union is a confederative union of countries which share some political and economic power together, i.e. they decided to choose together some of their policies. The European Commission (a *government*?) has the power to redistribute resources to poor (and unequal) areas of the Union and implement development policies in those regions. A way to do this could be to get data about the 27 countries in the Union and to apply policy A to the rich ones, policy B to the poor ones and policy M to some of them in the middle. The Commission has very soon realized this way to decide was potentially very

harmful. The Fig. 1 shows the per capita GDP (output per person) levels in several European countries where these have been divided in subnational level regions. The color levels are 5 and represent the per capita GDP of each region as a percentage of the average GDP in the Union.[1] You can easily see that while countries as Poland (in the North-East) or Greece are clearly poorer than the average (are almost all yellow), countries like Italy and Germany have both very rich and (if not *very* at least far more than average) poor regions. Actually both Italy and Germany seem to be divided in two different areas: North and South for Italy, West and East for Germany. This division in two has generated the term *dual economy* to indicate an economy, a country that actually works as if they were two different ones. The question the Commission faces is then "What policy should the EU apply to Italy?" If we use the method stated above, we should apply the policy M for mid-range countries. Potentially this policy would be harmful for both the very rich North and the quite poor South, while it would be good only for a pair(out of 21!) of the Italian regions. The obvious answer is to prepare different policies for the different regions, but this sometimes can be very difficult to do. While the European Commission, for example, has implemented urban and regional plans for the regions in the South of Italy, the European Treaties forbid the Italian government to have different taxation systems in different regions.
The case of the US may be similar. I do not have data for counties, but I show you in Fig. 2 the levels of *per capita GDP* for the 50 states and DC. As you may notice, even in a stable developed economy like the States, there is still a big variance between the riches and the poorest states. One may argue that this is not relevant for developing countries. I have no data at hand, but I would probably answer that the fast growing west coast of China is not similar at all to the vast agriculture-based economy of the inland. The same—probably—could be said about Brazil, India and many other countries. If I should make a guess, I would say that regional differences are most likely to be large in poor vast countries like many of the fastest growing developing countries. Were our policies–as partially they are—based only on average national data, we would not catch the important differences between poor inland Chinese peasants and the relatively rich citizens of the coastal cities.

3 Conclusions

The World Bank and many international institutions refer mostly to country-level data. In many cases this is not dangerous at all: no state of India is even close to be as rich as any European country or US state. Nevertheless the case of Italy, Germany and perhaps other countries in Europe[2] suggest that a closer look at geographical differences within each country could tell these Institution far more than what they expect.

[1] data and map from Eurostat `http://epp.eurostat.ec.europa.eu`

[2] Spain appears to be developing a dual economy as well. This is clearly visible in Fig. 1

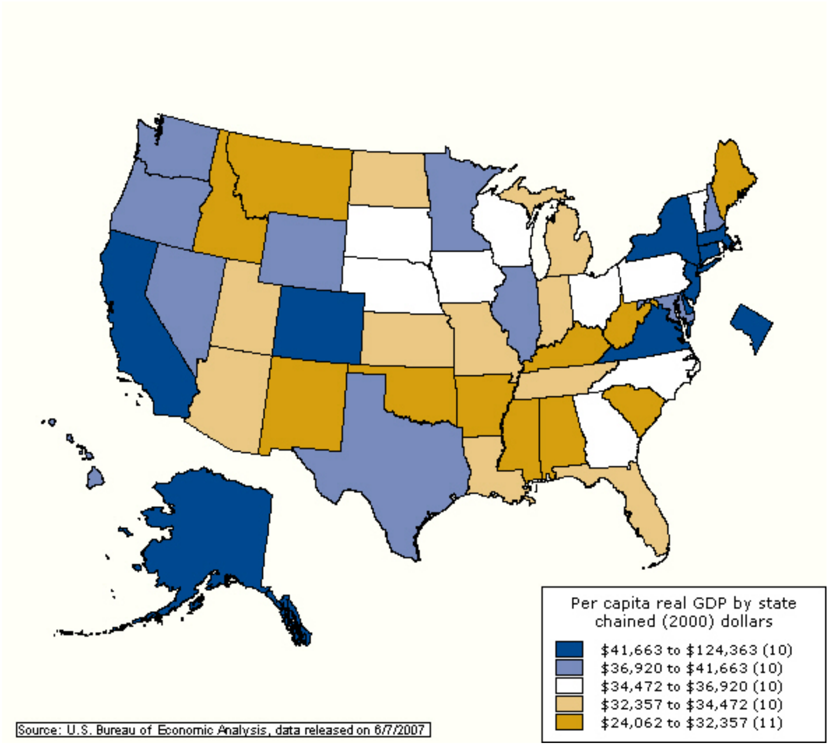

Figure 2: Per Capita GDP in US States