

POLICY BRIEFS

The issue of ageing and immigration

Addressing the relevance of demographic variables in determining the performance of socio-economic systems

Immigration cannot be seen as an issue independent of the global population dynamics of a society, its socio-economic performance and resource availability. Although the driving force of emigration is most often the lack of means of support in the origin country, it is very clear that labour demand in destination countries (associated to ageing) is the required complementing driver to have immigration. Different demographic structures imply a different amount of working hours in the Paid Work sector (Figure 1).

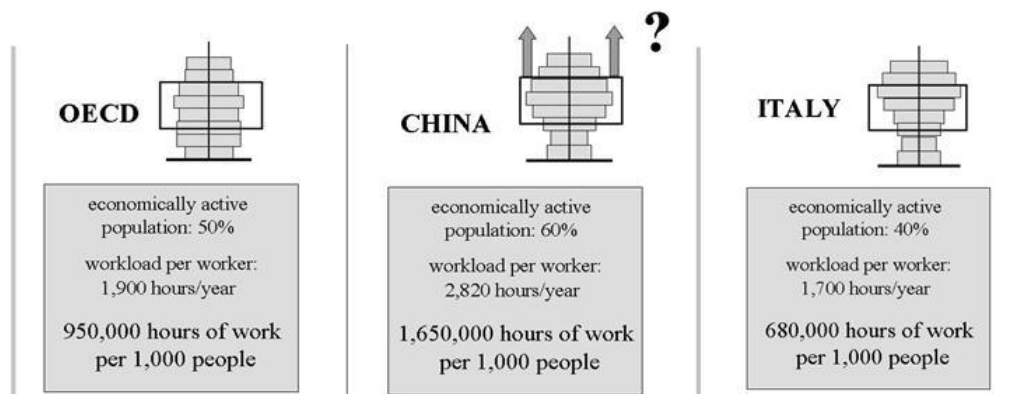


Figure 1. Relation between demographic structure and supply of work hours

Looking at Figure 1, we can see that in 1999 the Italian population supplied 680,000 hours of work to the economy – the PW sector - per every 1,000 people, while Chinese population supplied 1,650,000 hours of work (2.46 times more!). Using the numbers given in Fig. 1 we can say that in China, 1 out of every 5 hours of human activity was allocated to paid work, while in Italy this was only 1 out of every 13 hours. Let's now assume that two countries with a different population structure, like Italy and China, want to achieve the same level of GDP per capita – e.g. 20,000 €/p.c./year. The big difference in the ratio HA_{PW}/THA (1/13 vs 1/5) will translate into the need for the country with the lower work supply per year - like Italy in this example - to reach a higher pace of added value per hour of work in PW sector. Using this hypothetical example this value would be 29.4 €/hour for Italy versus 12.1 €/hour for China.

The problem associated to the phenomenon of ageing

The gradual reduction of the fraction of working time (HA_{PW}/THA) caused by population ageing forces developed country to proportionally increase the pace of added value produced in the PW sector per hour of work (ELP_{PW}). To make things more difficult, it should be noted that the problem with ageing is not only related to the continuous decrease of the fraction of working hours available to the economy (HA_{PW}/THA), but also to a continuous increase in the requirement of specialized hours of work in the service sector, which must be dedicated to the care of the expanding fraction of elderly in the population, and the need for the generation of more added value to pay the retirement pension to such expanded fraction. That is, ageing not only implies a lower ratio HA_{PW}/THA but also a continuous increase in the fraction of hours to be invested in the Service and Government Sector within the PW sector ($HA_{SG}/HA_{PW} > 60\%$).

HA_{PW} = Human Activity in the Paid Work sector
 HA_{SG} = Human Activity in the Service and Government Sector

THA = Total Human Activity
 ELP_{PW} = Economic Labor Productivity in the Paid Work Sector



The temporary solution provided by immigration

The population structure of immigrants tends to be only composed of adults (often > 85% of adults). Even when considering work-loads typical of European countries (2,000 hours/year for working adult) the pattern of total human activity of immigrants entering into an aged society is characterized by a ratio HA_{PW} / THA much higher (0.19) than the one typical of old societies such as Italy (0.07). This positive effect of demographic variables on the performance of socio-economic systems suggests that the heavy immigration flows experienced in the last decade by developed countries should be considered as a natural phenomenon, almost unavoidable. On the other hand, one should pose the question: how stable is the efficacy of this solution in the long term? This is discussed in the last section of this policy brief.

The long term view of the effect of immigration

Demographic changes provide an easy example of lag time dynamics that imply a predictable trade-off in economic performance. Waves of individuals moving across age classes do determine changes in the performance of an economy, which imply different effects when considering short-term vs. long-term assessments. When considering the experience of China, we can see that what was bad in the short term (in 1980) – a high dependency ratio, associated with a baby-boom in the 70s – became a very positive situation in the year 2000 (after 20 years) – a very high fraction of working population. However, we can expect that the situation will revert again to the past situation in another 20 years in China, when the dependency ratio will go up again because of the massive ageing of the population (question mark in the middle of Figure 1). An example of the slash-back phenomenon of demographic changes is given in Figure 2, based on data from Germany, an EU country in which it is possible to study the long term effect of the immigration of the 70s.

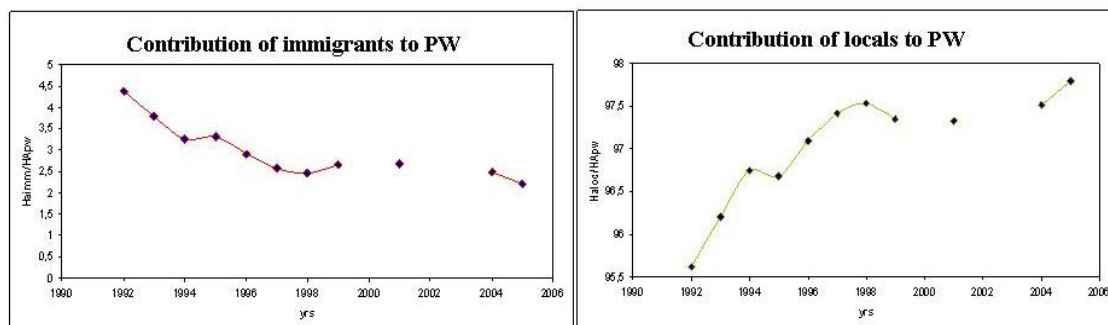


Figure 2: Turkish immigrant contribution of working hours to the economy of Germany

From the comparison of the two graphs, it is evident that the supply of working time to the Paid Work sector of the Turkish immigrants has been significant in the 80s, but then in the 90s has been constantly less and less relevant. In our analysis of Catalonia, we found out that households of retired persons (e.g. retired immigrants) and households with several children in school (e.g. the second generation of immigrants) consume more hours of work than they provide to the society. This is to say, that the solution of immigration is effective only assuming a perpetual inflow of immigrants.

The analysis of the effect of immigration so far was based on the assumption that the economy will be able to continuously grow in terms of GDP per capita forever, in spite of the continuous reduction in the ratio HA_{PW} / THA and the reduced availability of natural resources. However, this magic result has been obtained, so far, in developed countries, only by boosting the economic performance using massive injections of debts. What will happen to a large mass of immigrants if the economy of the country where they live will suddenly contract?