Since the work of Lucas (1988), the importance of human accumulation for growth has been recognized, and education becomes associated with many beneficial effects beyond those that can be monetized. First, education increases civic awareness and engagement, therefore leads to a stable and democratic society, with lower crime rates, welfare costs, public health costs, etc. Second, an educated workforce is the main driver of new technologies and hence the economic growth. There exist also the private market benefits such as higher earnings, health, longevity, and quality of life. Apart from positive public externalities, education externalities can be negative e.g., increases white-collar crime, deepen the income inequality in the US, and in other OECD member countries, especially in regions with unequal access to education (McMahon, 2010). The externalities imply that education is at least partially a public good, thus leaving room for intervention to bring the achieved levels of investment in human capital to the social optimum.

Indeed, the diversity in solutions implemented across the world ranges between subsidized education and privatized education with the intra-generational redistribution of income (i.e., financing education through private investment, with credit markets). In most European countries, such as Poland, Germany, Denmark, etc. universities charge low or no tuition fees because educational institutions are funded from general taxation. In contrast, in the United States and in the United Kingdom, tertiary education is financed from private sources: students bear all the education costs. Both education finance systems have pros and cons. On the one hand, the public education system allows all agents to graduate from university, regardless of their parents' wealth. On the other hand, access to education is financed through general taxation (mostly income taxes), and therefore it can effectively discourage people from investing in human capital. Financing education from private funds does not involve any taxes, but prevents the poorest people from investment in human capital or forcing them to take loans to cover the cost of studying. In the US, the outstanding student debt reaches $1.4 trillion (or 7.2% ratio to GDP), and an increasing number of borrowers that may default on their student loans in the near future, bringing about a systemic threat to the financial system's stability.

The main question of this research project, which I want to address is, **whether the incentivizing instruments (education subsidies and income-contingent loans) used by the social planner may reduce inequality and improve social welfare**. To this aim, I innovate by introducing an altruistic family dynasties into macroeconomic models analyzing optimal taxation in the spirit of New Dynamic Public Finance. So far, the role of the family was neglected in analysis considering the education choices. The dynastic families are relevant, because of two quantitatively important channels. First, the children may inherit their parents' innate abilities. Second, in countries where private funds are the primary source of funding the investment in human capital, a high fraction of education fees is born in the form of up-front payment by the generation of parents rather than in the form of ex-post payments by the generation of children.