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Research Statement

I have been pursuing three interrelated lines of research: the allocation of talent and development; sovereign default; resource economics. A common ground among them is to develop a macroeconomic theory of economy with frictions while addressing policy issues, I consider relevant. In what follows I provide a brief summary of these lines of research.

The Allocation of Talent and Development

The first theme of my research is to analyze the effect of *ex-ante heterogeneity* and *frictions* on economic outcomes: growth, inequality, environmental quality, etc. The main challenge is to correctly identify the "exact" source of inefficiency. Once this has been done, we can address the normative question: what policies can correct the inefficiency? I have focused on wealth and talent as important sources of heterogeneity.

My job market paper, ***"The allocation of talent: finance vs. entrepreneurship"***, studies the effect of private information and matching on *the allocation of talent and wealth* in a framework with ex-ante heterogeneous agents who face an occupational choice. The paper analyzes a meaningful tradeoff between financial intermediation and production. Financial intermediation is socially desirable, because it increases the efficiency of production, but does not directly contribute to production. The allocation of talent is inefficient due to externalities: bankers do not internalize the fact that more bankers means fewer entrepreneurs. The model provides an explanation for the expansion of the finance sector and assesses the efficiency of the expansion. I argue that the unequal accumulation of wealth leads to the expansion of the financial sector. Small initial differences in wealth among investors cause substantial income inequality among entrepreneurs, which is translated into greater wealth inequality next period. Wealthy investors are willing to pay a higher premium for financial services that increase the return on their savings, and so the greater is the dispersion of wealth, the higher is the price of financial services. This higher price induces a larger fraction of talented agents to pursue careers in finance. Hence, the growth of finance and the increase in wealth inequality go hand in hand. The paper provides an alternative explanation for why the financial sector might grow too large and can be viewed complementary to Bolton et al. (2012) and Philippon (2010).

My other project, ***"Structural changes and labor income distribution: the importance of educational policies"***, looks at the allocation of talent between services and manufacturing. This paper explains the simultaneous growth of the services sector and income inequality by studying the impact of an endogenous educational choice on both sector composition and labor income distribution. In my analysis, there are two mechanisms of financing higher education: bequest and loans. The model with inheritance predicts endogenous and permanent separation of the population between the rich (skilled) and the poor (unskilled) and generates the misallocation of talent. The model with loans leads to an efficient outcome, even though it still may generate a persistent level of inequality. Putting both models into a historical perspective, considering bequests as the traditional way to finance higher education, while loans as the modern one, the economy, switching from bequests to loans, qualitatively reproduces the dynamics of the supply of skills, the college wage premium, tuition fees and the labor allocation between sectors in the last century in the US. This is a novel explanation among others:

non-homothetic preferences (Echevarria, 1997), skill-biased technical change (Acemoglu, 2002) and differential sector productivity (Buera and Kaboski, 2012).

Sovereign Default

Strategic sovereign default has been studied extensively in the literature. The literature seeks to explain the incentives for sovereign borrowers to *repay their debts*, and hence also the incentives for creditors to lend to sovereigns in the first place. In addition, sovereign defaults models have proven to be a useful tool to understand and predict the dynamic of macroeconomic variables.

In a project together with Wojtek Paczos (EUI), ***"Sovereign debt issuance and selective default"***, we look at *two types of debts*: external and domestic, and how debt composition changes government incentives to borrow and default selectively. Domestic debts and, consequently, domestic defaults has been neglected in the literature despite the fact that Reinhart and Rogoff (2011) show that in the vast majority of cases, governments default selectively either on domestic or external public debt holdings and at least 58 de jure sovereign defaults on domestic public debt have happened over the last century. As the question why governments usually default selectively on either foreign or domestic debt remains open, this paper is an attempt to fill this gap.

We consider standard frictions: incomplete markets and limited commitment of government. Government has to cover its expenditures by using three sources of funding: distortionary taxes, domestic debt and foreign debt. The government uses external borrowing to smooth output fluctuations. Consequently, as in Arellano (2008) external default is more likely in recessions, when a risk averse borrower finds it more costly to repay non-contingent debt. The government finds it optimal to use mostly domestic debt to smooth distortions. Domestic default is thus more likely when tax distortions are high. Total default happens when high distortions coincide with a recession. Secondly, the model matches important data moments: a reasonably high debt-to-GDP ratio with reasonably low default probability. Thirdly, contrary to recent theoretical findings by Broner et al. (2010) we show that trade in secondary markets might increase the risk of sovereign default.

Work-in-Progress, ***"Dynamics of interest rates in the Eurozone"*** is a quantitative exercise to assess the importance of strategic sovereign default models as tools to explain the business cycle. The paper seeks to explain the panel dynamics of interest rates of the European Monetary Union (EMU) countries: the convergence of nominal interest rates in the late 1990's and early 2000's; the relatively stable levels of interest rate during the 2000's; the divergence of interest rates since the global recession started. I consider a fairly standard model of sovereign default *a la* Arellano (2008) and add a possibility of bailout to quantitatively assess three competing explanations: (a) the introduction of Euro eliminated the foreign exchange rate risk, which made sovereign bonds of the "Euro periphery" countries more attractive for investors; (b) the business-cycle synchronization is caused by the convergence of the EMU countries; (c) the introduction of the Euro might increase a bailout probabilities or at least market believes regarding these probabilities. The elimination of the foreign exchange rate risk and synchronization are not enough to explain the convergence: bailout seems to be more important.

Natural Resources and Development

I am sympathetic to stories of heterogeneous development, but I have always searched for a common ground. The endowment of natural resource is an important source of the heterogeneity. However, the question why some well-endowed countries have failed to grow remains open.

Work-in-Progress together with Srecko Zimic (EUI), **"The news shock: evidence from oil-field discoveries"** contributes to an old debate in the literature as to whether the abundance of natural resources is a blessing or a curse (van der Ploeg, 2011). Furthermore, We try to identify a propagation mechanism of *exogenous anticipated permanent shock to aggregate productivity* on an economy. We use giant oil discoveries (news) and the actual soil (realization of the shock) as proxies for the shock. We identify one channel of resource curse: real exchange rate appreciation. However, we find a positive impact of both a discovery(news) and an actual extraction(realization of the shock) on GDP, investment and consumption. In addition, we quantify an anticipation effect to be large than the effect of shock on impact. Our results are in line with news driven business cycle literature (Beaudry and Portier, 2006).

In the paper with Kirill Borissov, **"Sustainable growth in a model with dual-rate discounting"**, published in the Economic Modelling, we make a small theoretical contribution by applying dual-rate discounting, the idea that a consumer might discount public consumption (environment) and private consumption at different rates, to classical Stokey (1998)'s model of environmental economics. This helps us to resolve the paradox, such as the rate of economic growth nor the rate of growth of emissions depends on the time preference of the representative agent.

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