

Research Statement

I obtained my Ph.D. at University of Barcelona in 2023 and my interest fields are macroeconomics, development and growth. In my research, I use survey tools and large panel data to show empirical evidence, and theoretical model, as general equilibrium model, to explore different areas of development and growth for formulation and implementation of different policies. This research statement is organized as follows: The second section discusses my work in the area of development economics, with a focus on my dissertation papers. The third and the the fourth section discusses my work in progress and my future research in the respective areas.

My dissertation

My PhD dissertation explores three characteristics of developing countries: structural change, fertility, and informality, and their implications.

In the first chapter, co-authored with Xavier Raurich, We investigate how remittances promote structural transformation in developing economies, primarily by shifting labor toward the service sector. Analyzing data from 52 developing countries (1995–2019), we observe a positive correlation between remittances and service sector employment, driven by the income effect: as remittance income grows, spending on services increases relative to necessities. Using consumption data from Guatemala and El Salvador, we validate this shift, and a two-sector growth model further quantifies remittances' impact on structural transformation. Our results show that remittances account for up to 23.5% of service employment in low-income countries, decreasing as income rises. In a case study of six remittance-dependent nations, remittances explain 18% to 65% of service sector growth, underscoring their role in economic development.

In the second chapter, I develop a fertility choice model to analyze how migration affects fertility in developing countries. In this model, migration decreases the fertility rate through two mechanisms. When migration occurs, the household's income rises due to remittances sent to home. This remittance implies a rise in education expenditure for children. At the same time, the second mechanism is a general equilibrium effect due to migration. When people migrate, the local labor supply decrease while the local salary increases. The individuals who stay have a higher salary, but less time to take care of the children. This raises the opportunity cost to have children, which induces a reduction in fertility. This increase in the relative cost of children implies a decline in fertility. I calibrate the model to replicate the fertility pattern for a group of developing countries. Then I perform two counterfactual exercises to assess the importance of migration. The results indicate that the migration process is a complementary explanation for the demographic transition in developing countries.

In the third chapter, co-authored with E.Cruz, we study informality from the demand perspective. Taking into consideration the case of the Mexican economy, we explore how quality explains the increase in formal employment. We argue that the increasing consumer quality demand for goods and services is a driver for the change in the sectoral composition. To this end, we propose a dual growth model consisting of two broad

sectors, goods, and services, which are composited by a formal and an informal industry. We assume that the formal and informal industries produce goods and services, and just the formal firms produce goods or services that embody quality. Quality increases exogenous along the development process. The increasing demand for formal goods and services induces the reallocation of labor from informal to formal firms. Our numerical findings suggest that quality is an important mechanism that contributes to explaining the decrease in the size of the informal sector and the change in the sectoral composition of the Mexican economy.

Future extensions of the thesis papers

The main contributions and the future extension of the papers are the following. The first chapter reports the importance of remittances in driving employment from agriculture to services. Future work will investigate how international remittances can affect the TFP and the economic development of the countries of Latin America. In the second chapter, since we showed the negative relationship between fertility and migration, a future extension will be using microdata, in particular, time-use surveys and migration surveys, to understand the dynamics of the female labor markets of the migrant countries. In this sense, when the labor demand generally expands, we could analyze which sector of economic activity women incorporate. Lastly, in the third chapter, we show that quality is a driver for the change in the sectoral composition. A possible work could be expanding the counterfactual exercise to a cross-country level for developing countries, using different micro survey data.

Future papers

My future research focuses on two main areas. First, I plan to investigate how patents drive structural change, guided by two key observations: as GDP rises in developing countries, employment shifts from agriculture and manufacturing to the service sector. Additionally, with increasing patent activity, low-tech manufacturing declines while medium- to high-tech manufacturing expands, based on the OECD's R&D intensity classification. I hypothesize that R&D investment in high-tech manufacturing prompts this transition by boosting demand for high-skilled workers while reducing low-skilled labor needs, redirecting low-skilled workers toward the service sector. This study will develop a general equilibrium model to analyze and quantify the role of patents in shaping sectoral composition.

Second, I will explore how new technologies influence the development of competencies and skills in younger populations. This research will examine how shifting technology use impacts skill-building and workforce readiness, focusing on the implications for future labor market demands.

Arianna Garofalo

