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Research Statement

I am an applied microeconomist with primary interests in labor and development economics, and secondary interest in urban economics. I use microeconomic theory and applied econometrics to motivate and test policy-relevant ideas that affect common well-being. I am familiar with the use of reduced form and structural estimates to empirically evaluate facts motivated by economic theory. I also have experience working on randomized control trials in experiments conducted in the Dominican Republic, Colombia, and Uganda. My current research can be divided in three different but related topics:

1. In my job market paper I study how an increase in market competition coming from a high-wage country affects local labor markets in an emerging economy. Recent literature has shown that low-productivity firms predominate in emerging economies affecting employment growth. An inefficient process of firm selection allows low-productivity firms to live longer than expected, and this may be induced by insufficient market competition. Abundant evidence has shown that import competition from low-wage countries decreases employment and wages in developed and developing countries, but less is known about the impact of competition from high-wage countries on emerging economies.

   In this paper we study the effects of import competition from the United States on workers and firms in Colombia. We exploit industry variation induced by a free-trade agreement implemented between Colombia and the United States and regional variation in access to imports. We use administrative employer-employee data that allow us to estimate high-dimensional worker- and firm-fixed effect models and identify proxies for productivity and skills, respectively. We find that a 10% increase in competition from the United States decreases employment in 6.4%, affecting primarily low-skilled workers. This effect is mainly driven by firm exit and shrinking among low-productivity firms. Furthermore, import competition induces worker reallocation that mitigates wage loses, except among workers in low-productivity firms who reallocate and accept lower paid jobs. In general, we find that import competition from the United States induces firm exit among low-productivity firms and reallocates workers, but it has impacts on low-skilled employment that last at least for four years.

2. I have special interests on the relationship between disparities in education and labor market outcomes. In my paper titled "The Economics Behind the Math Gender Gap: Colombian evidence on the role of sample selection" I address the relationship between the gender disparity in schooling opportunity costs and the observed math gender gap. The math gender gap has shown to vary across countries and increase as students age. I argue that these patterns are explained by selective dropout in the lower side of the distribution of male students. Such hypothesis is helpful to explain test score gender differences around the world, and to better design policies oriented towards reducing such differences. The paper was published in the *Journal of Development Economics* in 2018.

   In addition to this paper, I have two other working papers under revision that study the heterogeneous effects of education. In a first paper coauthored with Julie Buhl-Wiggers, Jason Kerwin,

Rebecca Thornton, and Jeff Smith we study the heterogeneous effects of increasing teaching literacy in Uganda. Important evaluations of education interventions have traditionally focused on the mean impacts of policies, but knowledge regarding who these interventions leave behind is still much needed. This paper builds on the literature on heterogeneous effects and estimate heterogeneity in the effects of a policy that increased teacher's literacy in a randomized control trial in Uganda. We explore idiosyncratic variation by bounding the joint distribution of impacts and estimating quantile treatment effects. Furthermore, we estimate systematic variation using a rich set of covariates, and contrast the results of a fully interacted model with those of a machine learning (lasso) approach. Our results suggest that the majority of the treatment effect heterogeneity is idiosyncratic, and mean impacts are insufficient for summarizing how programs affects learning. This paper was presented in the conference titled "From Theory to Statistics to Empirics: An Econometrics Conference in Honor of James Heckman", and is considered for submission to the special edition of the *Journal of Econometrics* in honor to James Heckman.

In a second paper coauthored with Matías Busso and Sebastián Montaño we estimate the labor market heterogeneous returns to types degrees and student skills. We contrast the returns to different degrees (public, private, short, and longer-term) with a set of individual-specific skills (including literacy, numeracy, foreign language, field-specific, and non-cognitive), and find that degrees in Colombia have a higher weight in determining future wages than the actual skills of students. These results suggest a great deal of importance on motivating new students into better academic programs to enhance their future well being.

3. I have additional research interests on topics relating education and urban economics. In a working paper with Ruchi Singh we study how school shootings in the United States affect housing prices. This paper gives evidence on the link between the demand for housing, crime, and education. We find that consumers decrease the demand for housing in places affected by a school shooting, even though the probability of being victimized in the future is not different elsewhere. Empirically, we estimate detrimental effects of school shootings on property values, especially among houses with more bedrooms. The number of transactions also decrease, implying a decrease in demand for housing in affected school districts. We also find evidence of decreases in school enrollment and in the number of teachers in the aftermath of the shooting, and no effects on crime. The analysis suggests that housing demand decreases because of a perceived deterioration in school quality and because of social-stigmas. The willingness to pay among house-buyers decreases even though the probability of victimization does not change. This paper was a runner-up for best student paper in the North Atlantic Regional Science Conference in 2019.

My future research agenda includes (but not limited to) four other ongoing projects that combine quasi-experimental and experimental analysis. First, I am working on linking Colombian matched employer-employee data with records on college attendance and test scores in Colombia. Using these data as input, I will study how education mediates when a shock on international trade changes the composition on the demand for skills. Second, in a project with Eliza Forsythe, we show that managers are largely mobile compared to any other occupation. We employ longitudinal records and present a theoretical model to understand how wages and skills induce mobility across managers. Third, I analyze how forced migration increased labor supply of high-skilled females. During the 1990s and 2000s, Colombia experienced a huge displacement of rural women who arrive to the cities, reduced the price of domestic chores, and induced high skilled women to enter the labor force. Finally, jointly with Matías Busso, we study the heterogeneous effects of an intervention in Costa Rica that provided access to technology randomly to students. The use of technology in learning has usually shown any sizable effects, but is still not clear how these interventions affect students heterogeneously. This paper is intended to cover that missing evidence by estimating the distribution of quantile treatment effects.