

Marcos Lee
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To members of the recruiting committee,

I am writing to apply for the tenure-track assistant professor position at your institution. I am currently a doctoral candidate in economics at Rice University, supervised by Flavio Cunha, and expect to complete my PhD by May 2024. My research fields are Labor and Education Economics, with a focus on the Early Childhood environment. I provide an overview of my academic profile below.

My research focuses on early childhood environments and education policies, including parental preferences and investments. In my job market paper, “Subjective Beliefs, Uncertainty, and Costs of Investment in Early Childhood”, I examine the role of belief uncertainty in parental investment decisions. Specifically, I design a survey-based approach that is explicitly motivated by a theoretical model of parental time investment. I tackle methodological challenges, including measurement errors, by developing new approaches. I then estimate a model of parental investment in children that takes into account subjective beliefs. My paper provides a unique perspective on parental decision-making in early childhood development by addressing subjective uncertainty about returns on child investment.

My working papers focus on the education sectors, the evaluation of existing policies, and the simulation of policies that have not yet been implemented. In my paper with Flavio Cunha, “One Says Goodbye, Another Says Hello: Turnover and Compensation in the Early Care and Education Sector”, we investigate the Early Childhood Education (ECE) workforce and their educational background, their transitions in and out of the sector, their earning disparities compared to other sectors, and their turnover rates. We estimate a structural model of occupational choices and simulate different earning bonuses to the ECE workforce. We have submitted this paper to a leading economic journal.

I have also led the impact analysis of two different policies in the ECE sector as part of the Texas Policy Lab. In both projects, I was responsible in designing and conducting the impact evaluation framework and collaborated on reports used by government agencies to improve their policies. My experience in the Texas Policy Lab gave me the invaluable opportunity to collaborate closely with government agencies and local community leaders in the field of early childhood education, which has broadened my perspective and enriched my skill set. I am in the process of preparing these projects for submission to leading academic journals in the field.

As a dedicated researcher who values the impact of education, my teaching experiences and philosophy are rooted in the belief that education is a dynamic and transformative journey. I am dedicated to preparing students for academic excellence and real-world challenges. As an educator, my aim is to inspire and empower the next generation of scholars and leaders. I have experience developing an introductory statistics and econometrics course for the Master of Social Policy Evaluation program at Rice University, as well as serving as a Teaching Assistant in undergraduate courses like “Evaluation of Social Programs” and “Mathematical Economics.” Given my research interests, I can also teach courses in econometrics, labor and education economics, and structural methods.

A tenure-track position at your school is attractive because of its renowned research environment. I believe my research interests would allow me to make substantial contributions to the economics group. I have enclosed my curriculum vitae with contact information for my references and my job market paper. I will gladly provide any other supporting material upon request. Thank you for your consideration and I look forward to hearing from you.

MARCOS LEE

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RESEARCH FIELDS

Labor Economics, Education Economics, Early Childhood Development

EDUCATION

PhD, Economics, Rice University	2024 (expected)
MA, Economics, University of São Paulo, Brazil	2017
BA, Economics, University of São Paulo, Brazil	2014

ACADEMIC AND RESEARCH AWARDS

Dissertation Grant, Rice University	2022
Best 3rd Year Paper, Rice University	2020
Graduate Fellowship, Texas Policy Lab	2022 – Present
Graduate Fellowship, Rice University	2017 – 2022
Best Undergraduate, Masters, or PhD Thesis - 2nd Place, Brazilian Association of Regional Studies	2015
Best Undergraduate Thesis - Honorable Mention, University of Sao Paulo	2014

WORKING PAPERS

“Subjective Beliefs, Uncertainty, and Costs of Investment in Early Childhood” - Job Market Paper

I study how parents perceive the uncertainty of the child development process and how this uncertainty impacts their actual investment in children. To do so, I develop an elicitation procedure of parental subjective belief distributions about the technology of skill production, their preferences for investment choices under different scenarios, and their subjective investment costs that is guided by a model of parental investment. I collect data using this elicitation procedure and correct for measurement errors in the belief estimation. I show that parents hold downward-biased mean beliefs about returns to investment. Moreover, parents who have higher mean beliefs also hold lower levels of uncertainty about their beliefs. Both mean beliefs and uncertainty correlate with actual investment measures. I show that a one standard deviation increase in mean beliefs predicts a 20% standard deviation increase in daily investment hours, while the same increase in uncertainty predicts a –13% standard deviation decrease in investment. Finally, I estimate a model of parental investment with reference-dependent preferences and show that even though parents hold low mean beliefs, they have a strong incentive to invest if their child is at risk of having a developmental delay.

“One Says Goodbye, Another Says Hello: Turnover and Compensation in the Early Care and Education Sector”, with Flavio Cunha (*Submitted*)

The quality of the early environment children experience profoundly influences their human capital development. We investigate recruitment and retention of the Early Care and Education workforce by merging datasets from three different government agencies in Texas. We construct a longitudinal panel of individuals born between 1980 and 1989. We study their educational background and their lifecycle labor market dynamics. Turnover in the ECE sector is 37% higher and earnings are 12% to 20% below those in the sectors that employ similar types of workers. We uncover steep educational and racial differences in turnover rates and earnings. We estimate a dynamic discrete choice model of schooling and work decisions for a sample of potential entrants of the ECE sector. We estimate an extensive labor supply elasticity of 2 but a turnover elasticity of -0.5. Our model predicts that entry and retention bonuses would have a small positive impact on recruitment and retention in the ECE industry.

WORK IN PROGRESS

“An Evaluation of a Business Coaching Program for Childcare Programs in Texas”, with Katelyn Heath

“An Evaluation of Different Wage Supplementation Policies for Childcare Workers in Texas”, with Flavio Cunha

“An Equilibrium Model of School Teachers Wages and School Financing”, with Gabriel Sallum and Flavio Cunha

“A Context Specific Risk Aversion Elicitation of Parental Investment in Children”

POLICY BRIEFS

“Identifying Impact in the Context of Recovery: TWC Child Care Business Coaching Program”, Texas Policy Lab

“Wage Supplementation Policies in Texas”, Texas Policy Lab

CONFERENCES AND PRESENTATIONS

2023: 7th Workshop on Subjective Expectations (Bocconi); Bocconi University Brown Bag Seminar; Rice University Brown Bag Seminar

RESEARCH AND TEACHING EXPERIENCE

Graduate Student Fellow, Texas Policy Lab, 2019 – Present

Research Assistant, McNair Center for Entrepreneurship, 2018

Instructor: Statistics Summer Camp (G), 2021

Teaching Assistant: Evaluation of Social Programs (UG), Mathematical Economics (UG), Financial Engineering (UG), Macroeconomics (UG), 2018 – 2021

LANGUAGES AND PROGRAMMING

Programming: Julia, R, Python, Stata, SQL

Languages: English (Fluent), Portuguese (Native), Spanish (Fluent), Korean (Basic)

REFERENCES

Professor Flavio Cunha (Chair)
Rice University
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Professor Rossella Calvi
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Professor Isabelle Perrigne
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Diversity and Equity Statement

As a first-generation immigrant to the United States, born in São Paulo, Brazil, I have witnessed firsthand the immense value that diversity brings to communities and organizations. Growing up in an environment filled with people from various cultural backgrounds has profoundly shaped my perspective and deepened my commitment to promoting diversity, equity, and inclusion in all aspects of my life. As a Latino immigrant, I understand the importance of combating discrimination and fostering inclusivity. My parents were also first-generation immigrants to Brazil, so I grew up as an immigrant in Brazil before immigrating myself to the United States. I believe that the experience of being born to immigrant parents and then becoming an immigrant myself gives me a unique perspective on immigrant life and has influenced the way I conduct my research and teaching.

I believe my research in early childhood education can be fundamental in addressing inequalities. I am dedicated to advancing diversity, equity, and inclusion by focusing on the critical issue of early childhood education and the impact of parental investment on child development. By investigating the factors that influence how parents from different backgrounds invest in their children's early education, my work contributes to understanding and addressing disparities that exist in our educational systems. I am dedicated to conducting research that not only identifies these disparities but also offers evidence-based solutions to narrow these gaps, ensuring that every child has an equal opportunity to succeed.

I have taught a course at Rice University for incoming students in the Master of Social Policy Evaluation. This cohort consisted of individuals from various age groups and professional backgrounds, many returning to a school environment after years in the workforce. Many students were still wrapping up their professional work, so the class was asynchronous. I designed the course to be accessible to students with diverse backgrounds and learning styles. I also held weekly office hours to provide students with individualized support at different times of the day. Through thoughtful course design, accessible teaching materials, and a commitment to addressing individual learning needs, I strived to ensure that all my students had an equal opportunity to excel in their studies.

My commitment to diversity, equity, and inclusion, as demonstrated by my past actions, aligns well with the mission of the university. My cross-cultural background enables me to sympathize with students from historically underrepresented backgrounds. As a faculty member, I will work with students and faculty regardless of their race, ethnicity, gender, religion, sexual orientation, socioeconomic status, and country of origin. Moreover, I will actively seek opportunities to collaborate with colleagues and organizations to advance initiatives that promote diversity and equity within academia and society at large.

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Research Statement

I am a labor and education economist specializing in early childhood environments and education policies. I focus on parental preferences, beliefs, and investments, and policies affecting early childhood environments. Developmental psychologists, sociologists, and economists highlight the vital role of early childhood in developing cognitive and non-cognitive skills. It impacts not only educational attainment, but also has long-term effects on different outcomes such as earnings and health. Understanding the early childhood environment is crucial for policymakers to address lifetime inequality. I use both reduced-form and structural methods to study the determinants of gaps in parental investments and the impact of policies that target the Early Childhood Education (ECE) and K-12 sectors.

My job market paper, “Subjective Beliefs, Uncertainty, and Costs of Investment in Early Childhood,” is motivated by the literature emphasizing parental beliefs in explaining investment gaps in early childhood. Recent research in economics highlight the role of parental information about the process of child development. While this body of work has shown that low-income parents underestimate the true returns to investment, and that this is correlated with lower investment, it does not consider the uncertainty parents have about their beliefs.

Parental uncertainty about the returns to investment in early childhood is poorly understood and while the literature on schooling choices highlight the role of risk aversion in decreasing investment in high school settings, it is possible that in a model with learning, high variance (ie, high uncertainty) in beliefs lead to higher investment in early childhood. Moreover, policies that target parental information have been implemented, but mixed results suggest that uncertainty could be an important factor in explaining the impact of these policies. Therefore, I ask the following questions: Do parents hold substantial uncertainty about the returns to investment in early childhood? How does uncertainty about these beliefs affect parental investment decisions? Do parents that have high expectations about returns to investment are also more uncertain?

To address these questions, I study how belief uncertainty about the technology of skill formation affect the parental investment decisions in their children. First, I develop a theoretical model of parental investment. Then, I create a survey-based approach that identifies the parameters from this general model. Respondents are asked to report their beliefs about child development. This allows me to credibly estimate parental beliefs and their preferences for child development. In addition to measurement error problems from surveys, I face unique challenges that arise from correlated measurement errors. Therefore, I extend existing methods in the literature to address these issues.

I estimate parental beliefs and confirm that parents in this sample indeed have low mean beliefs about the returns to investment, but I find that uncertainty is high. Moreover, individuals that have higher mean beliefs also have lower subjective uncertainty. I also find that both mean beliefs and uncertainty correlate with actual time investment measures collected from individuals, but while higher mean beliefs predict higher investment, higher uncertainty predicts lower investment. My research contributes to various strands of literature, including the importance of subjective expectations in economics, the role of parental information in child development, and the impact of uncertainty and risk aversion in educational investments. By explicitly addressing subjective uncertainty regarding the returns on child investment, my paper offers a unique perspective on

parental decision-making in early childhood development. Furthermore, I open new avenues for future research by providing a framework to study the impact of uncertainty on parental investment decisions.

My working papers focus on the education sectors and the use of structural methods that can simulate policies that have not yet been implemented. In my paper with Flavio Cunha, “One Says Goodbye, Another Says Hello: Turnover and Compensation in the Early Care and Education Sector”, we investigate the Early Childhood Education (ECE) workforce and their educational background, their transitions in and out of the sector, their earning disparities compared to other sectors, and their turnover rates. Past research relied on imperfect data that suffered from multiple sources of bias or incomplete information. We construct a longitudinal panel of individuals born between 1980 and 1989 which follows them from school to the workforce from three administrative data sets in Texas. We uncover steep educational and racial differences in turnover rates and earnings. This unique data set also allows us to estimate a dynamic discrete choice model of schooling and work decisions for a sample of potential entrants of the ECE sector. By simulating earning bonuses, we estimate a high entry elasticity of 2, but a low turnover elasticity of -0.5. We have submitted this paper to a leading economic journal.

In another work with Flavio Cunha and Gabriel Sallum, we explore how the disparity in school funding across districts in Texas affects both the teacher labor market and student outcomes. Texas public schools are organized into Independent School Districts (ISDs), primarily funded by local property taxes. When these taxes fail to meet the minimum value per student requirement, the state covers the deficit. However, if taxes exceed a certain threshold, the state recaptures the excess from the ISD. This process creates financial disparities: schools in high-value property districts with a larger student population tend to receive higher funding. We use administrative data from Texas to examine the relationship between public school funding and factors like teacher recruitment, retention, wages, transition and how they impact students’ educational attainment. We estimate a general equilibrium model that incorporates these features and simulate the impact of alternative financing policies.

In my work at the Texas Policy Lab, I use quasi-experimental methods to evaluate policies improving child care provider quality in Texas. I have led the quantitative impact analysis of two projects. One of them evaluates the Child Care Business Coaching Program, a policy from the State of Texas that offered help to child care providers improve their operations and connect with other systems of support throughout the state. The other project focuses on evaluating a series of wage supplementation programs that the local entities in Texas that overview the child care programs implemented. In both projects, I designed the impact evaluation framework, conducted the statistical analyses, and drafted comprehensive reports that were used by the government agencies to improve their policies. My experience in the Texas Policy Lab gave me the invaluable opportunity to collaborate closely with government agencies and local community leaders in the field of early childhood education, which has broadened my perspective and enriched my skill set. I am currently in the process of preparing these two projects for submission to leading academic journals in the field.

I am deeply issue-oriented in my research. Going forward, I am looking forward to continue my research agenda in early childhood education and public policies. I envision my future as a researcher that can both develop new methodologies or models when needed, or use existing reduced-form or structural methods to identify and examine fundamental questions in my field. I would like to further explore the role of interventions that target parental beliefs and how they impact their uncertainty, and think more carefully about intertemporal preferences and risk aversion in the context of parental investments. Moreover, I plan to continue my agenda of ex-ante and ex-post evaluation of public policies in the early and K-12 education environments. I am confident that my research will make a significant contribution to the literature and have a positive impact on society.

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Teaching Statement

I enjoy teaching. As a dedicated researcher who values the impact of education, my teaching philosophy revolves around creating an inclusive and engaging learning environment that empowers students both academically and personally. I have experience teaching an introductory statistics and econometrics course for the Master of Social Policy Evaluation program, as well as serving as a Teaching Assistant in undergraduate courses like “Evaluation of Social Programs” and “Mathematical Economics.”

My experience designing and instructing the introductory course for the Master of Social Policy Evaluation program was pivotal in my teaching journey. I carefully developed the syllabus, selected appropriate textbooks, created challenging assignments, and delivered engaging lectures. My goal was to provide students with a comprehensive and structured learning experience that accommodated diverse learning styles. I also offered weekly office hours to provide individualized support. I’m pleased to have received positive feedback from students, such as “Marcos was so patient during office hours and answering my questions!”; “The instructor was very helpful and made himself available to answer any questions we had. He was very patient when I did not understand something.” “I really appreciated Marcos’ friendly and thorough presentation style.”

In all my courses, my focus is on helping students build a knowledge foundation that connects different aspects of the material. I begin with an overview, establish a basic knowledge structure, and consistently emphasize connections between new topics and previous sessions. As the courses progress, I highlight the inter-relations among all units. In the introductory statistics course, I recognized that many students were returning to education after years in the workforce. I started with a high-level overview, connecting abstract concepts of probabilities and statistics to the importance of evaluating public policies accurately. I used real-world examples and my research findings to engage students and demonstrate practical applications of course contents. For example, one student was confused about why in economics it is usual to transform earnings and wages into log-earnings and log-wages. I explained the usefulness of this transformation in estimating elasticities, and highlighted that the empirical distribution of these variables tend to suit a Log-Normal distribution. I believe that these examples helped students understand the importance of the material and how it can be applied in their future careers.

In summary, my teaching experiences and philosophy are rooted in the belief that education is a dynamic and transformative journey. I’m dedicated to preparing students for academic excellence and real-world challenges. As an educator, my aim is to inspire and empower the next generation of scholars and leaders. Given my research interests, I can develop and offer courses on econometrics, evaluation of public policies, labor and education economics, and structural methods, suitable for both undergraduate and graduate students. I look forward to contributing to the academic community at your institution.