Research Statement

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I am an Empirical Industrial Organization economist. My research focuses on non-price dimensions of oligopolistic competition, in particular on firms' choices of what products to offer in the market, and how those choices are affected by regulation. I am particularly interested in the design of regulation to overcome market inefficiencies in product and service provision.

Concerns regarding service underprovision, especially in disadvantaged areas, have motivated regulatory oversight or intervention in several markets, such as health care, consumer goods, airlines, and telecommunications. Regulators have used different policies in these markets, and little is known about their efficacy and relative desirability.

In my job market paper, *Regulation and Service Provision in Dynamic Oligopoly: Evidencefrom Mobile Telecommunications*, I study the effect of regulation on the provision of mobile telecommunications services and the introduction of new mobile telecommunications technologies. In telecommunications markets, a regulatory tool commonly used to ensure the broad and timely diffusion of new technologies is coverage requirements. A coverage requirement tasks a firm with offering service of a specific technology in a particular location by a date set by the regulator.

At first glance, the trade-off faced by regulators when deciding whether or not to impose a coverage requirement is clear. On the one hand, the requirement presumably anticipates the introduction of the new technology, thus increasing the discounted stream of consumer surplus. On the other hand, coverage requirements impose a cost on the regulated firm, for it is required to enter a market or upgrade its technology when it might not have done so in the absence of regulation.

In my job market paper, I set out to quantify the two dimensions of this trade-off. To measure the effect of coverage requirements on the timing of introduction of new mobile telecommunications technologies and the cost it imposes on firms, I develop and estimate an empirical dynamic game of firm entry and technology upgrade under regulation. I estimate the model using novel panel data on mobile technology availability in Brazilian municipalities. I use the estimated model to show that coverage

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requirements accelerate the introduction of 3G technology by one year, on average, and that the cost they impose on firms amounts to 24% of the profits firms obtain in the absence of regulation. Theoretically, the policy could delay the introduction of new technologies, but I measure the entry deterrence effects underpinning this theoretical possibility to be small. I also use the estimated model to simulate alternative policies, including the subsidization of the first firm to introduce 3G technology or better. This policy further accelerates the introduction of 3G by about one month, on average, and leads to substantial cost savings in the introduction of new technologies. These cost savings, however, obtain at the cost of reduced competition in the market. I estimate that the additional consumer surplus generated by one extra firm in the market has to be of about 180 2010 USD for coverage requirements to be preferable to the subsidy.

In a second project titled "Retailers' Product Portfolios and Negotiated Wholesale Prices", I zoom in on the interaction between firms' product offerings and prices. In particular, I study the effect of the size of retailers' product portfolios, the number of different brands they offer, and their private label offerings on national brands' prices. Product portfolios have a direct effect on prices via optimal pricing decisions and also an indirect effect because they influence retailers' bargaining positions, and thus the wholesale prices retailers are able to procure. I propose an empirical bargaining model of wholesale and retail price setting which accounts for both effects. I estimate the model using IRI scanner data. Among other results, I find that private label products are responsible for a 1% decrease in national brands' prices and that the negative welfare effects of double marginalization are substantial.

I intend to work on other projects that broaden my research on non-price competition and its welfare effects. I have obtained from the Brazilian ground transportation regulator ticket-level data on the long-distance bus market. I intend to use these data to study firms' scheduling decisions, a dimension of competition that has not been explored by the existing literature on passenger transportation markets. The Hotelling-like nature of competition that arises is prone to inefficiencies in product provision, which I intend to quantify empirically. I also plan to use these data to study the trade-off between consumer protection and product availability, manifested in this setting by price controls in specific segments of the market, which have resulted, anecdotally, in reduced service in these segments. Finally, I am involved in a project to collect detailed data on the access to telecommunications technologies of a sample of high school students in Brazil. These data will be paired with administrative data on students' scores in the Brazilian national college admissions exam, to further our understanding of the relationship between access to telecommunications technologies and educational achievement.

In summary, my work focuses on non-price dimensions of oligopolistic competition, particularly on firms' choices of what products to offer, the effects of those choices on consumer well-being, and how regulators can best design policies to overcome market inefficiencies in the provision of goods and services. I intend to deepen that research agenda by further exploring the empirical settings described above and others where service underprovision is a salient concern, such as broadband, food deserts, and health care.