

Proposal: “Product Variety, Across-Market Demand Heterogeneity, and the Value of Online Retail”

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There is widespread recognition that as economies have advanced, consumers have benefited from an increasing access to variety. Several strands of the economics literature have examined the effect of new products and variety on welfare either theoretically or empirically. The central idea of this project is that gains from online retail will be overstated if we do not take into account both the differences in demand across markets and the fact that brick-and-mortar retailers customize their assortments to cater to local demand. To quantify the gains of online retail this project proposes a new demand estimation technique and applies it to an extremely detailed point-of-sale data set containing millions of transactions. Other data sources used include user submitted reviews and inventory data, as well as product assortment data from three large retail chains.

This is a big data project – combined there is nearly half a TB of data. We are looking for a research assistant to help structure the data for estimation, run the estimation routines, and analyze the results. The existing estimation routines are primarily programmed in Python, so interested students should have experience coding in Python or another high-level programming language. Candidates should also have a basic familiarity with Stata and an interest in learning more independently.