Application Letter:
NBER Tutorial in the Economics of Digitzation

Daniel Stackman *

November 17, 2017

To whom it may concern,

I am writing to apply to the 2018 NBER Tutorial in the Economics of Digitization at SIEPR, Stanford University. I am a second year Ph.D. student in the Economics department at New York University's Stern School of Business. The focus of my coursework has been industrial organization, econometrics, and macroeconomics.

Perhaps most relevant for this conference, in "Learning Darknet Markets", joint with Luis Armona (Stanford University), we construct an original dataset by regularly scraping online narcotics listings from Darknet search engine results. Using a supervised machine learning algorithm, we extract around 87,000 marijuana listings from over 118,000 raw search results. Aggregating listings from nine different online marketplaces, representing vendors from across the world, we obtain a snapshot of the international online black market for marijuana. Prices are highly dispersed, fluctuating between 15 and 40 USD per gram, and move inversely with the aggregate number of listings, which range between 2000 and 7000 per day. The top 100 vendors (by number of listings) account for 50% of all listings, while the bottom 500 account for less than 20%. In ongoing work, we exploit exogenous variation in prices and market share induced by the FBI / Interpol seizure and shutdown of Silk Road 2.0, one of the most high-profile Darknet marketplaces, to characterize equilibrium online demand for narcotics.

In ongoing work with Tommaso Bondi (NYU Stern) we combine data from the Nielsen retail and consumer panels with Amazon price and fulfillment center location data. Though the extant literature (e.g., Brynjolfsson, Hu, and Smith, *Managment Science* 2003) suggests the gains from online retail are driven by increases in product variety, recent work (Quan and Williams, *Cowles Working Paper* 2017) casts doubt on the magnitude of these gains. We hope to go one step further, and ask whether the gains from increased variety are unevenly distributed: who buys online, and does unequal access to online retail exacerbate real consumption inequality? Furthermore, we hope to quantify the effects of increased competition from online retailers on local prices, sales, and employment at brick and mortar retail locations. Although past work suggests the price effects on welfare from online retail competition are small, the local labor market and product market effects on welfare are potentially important, and have been largely unexplored.

*daniel.stackman@stern.nyu.edu

Finally, in "Global Price of Risk and Stabilization Policies", joint with Tobias Adrian (IMF) and Erik Vogt (Citadel, LLC), we estimate a single nonlinear pricing factor that strongly forecasts stock and bond returns in a large international county panel. We show that a country's exposure to this pricing factor is correlated in the cross section with a host of macroeconomic and financial risks, and that this link between country exposures and country risks appears to be attenuated in countries with more aggressive government stabilization policies. This work was recently presented at the International Monetary Fund's Eighteenth Jacques Polak Annual Research Conference.

I have become increasingly interested in the economics of digitization and regional economic dynamics, and attending this conference would give me the opportunity to learn from the leading scholars in these fields, and to connect with other students with similar interests. My colleagues at Stern who have attended the conference in past years describe it as a formative experience that permanently (and positively) shaped both their research agenda and network of collaborators. I would be delighted and grateful for the chance to participate next March.

Sincerely,

Daniel Stackman