Application: NBER tutorial on the Economics of Digitization

Maxime Bonelli

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1 Contact information

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2 Description of the courses of graduate study pursued

Please find below a description of the courses of graduate study I pursued as part of the first two years of my Ph.D. (from September 2017 to June 2019), together with the names of professors and the grades I obtained (written in brackets). These courses are part of the Master in Economics jointly offered by HEC Paris, Ecole Polytechnique, ENSAE and ENS Paris-Saclay (http://www.master-in-economics.fr).

Major: Financial Economics (HEC Paris)

Corporate Finance Theory, *Denis Gromb* (18/20) - Dynamic Corporate Finance, *Bruno Biais* (18/20) - Empirical Corporate Finance, *David Thesmar and Adrien Matray* (18/20) - Banking and Financial Intermediation, *Guillaume Vuillemey* (16.23/20) - Digital Currencies and Blockchains, *Bruno Biais* (18/20) - Market Microstructure, *Stefano Lovo* (16/20) - Asset Pricing, *Thierry Foucault* (18/20) - Asset Pricing, Liquidity and Market Imperfections, *Johan Hombert* (18/20) - PhD Research Seminar - Topics in Finance, *Matthias Efing*

Minor: Labor Economics and Public Policy Evaluations (Ecole Polytechnique and ENSAE)

Microeconometric Evaluation of Public Policies, *Bruno Crepon and Anett John* (18/20) - Entrepreneurship, *Thomas Astebro* (17/20) - Urban Labor and Housing Markets, *Benoit Schmutz* (18/20) - Labor Economics, *Pierre Cahuc and Francis Kramarz* (auditing) - Economics of Education and Human Capital, *Christian Belzil* (auditing)

Additional courses: Macroeconomics (Ecole Polytechnique and ENSAE)

Macro-Finance, *Edouard Challe* (20/20) - International Macroeconomics, *Eric Mengus and Tomasz Michalski* (16.5/20)

Additional courses: Econometrics (Ecole Polytechnique and ENSAE)

Econometrics of Panel and Duration Data, *Laurent Davezies and Arne Ulhendorff* (auditing) - Structural Econometrics, *Christian Belzil* (auditing) - Machine Learning for Econometrics, *Christophe Gaillac and Jeremy l'Hour* (auditing)

3 Description of research interests and projects

My current research is in entrepreneurship, innovation and at the intersection between labor and corporate finance. I am starting a project studying the trade-off between privacy protection and data-driven innovation. My goal is to assess the impact of regulations of firms' use of customer data on operational efficiency and innovation. The real effects of policies strengthening the protection of customer data are still unclear. On the one hand, these policies might boost innovation by data-savvy firms by improving their knowledge in collecting, managing and exploiting data. It might also be that customers are reassured and more likely to share data or provide more accurate information. On the other hand, if the burden of regulation is too heavy, firms might be discouraged from engaging in new digitization initiatives and thus refrain from collecting and processing customer data. As a consequence, it might hinder firms' ability to innovate trough their use of customer data.

My empirical strategy consists in exploiting the staggered adoption of security breach notification laws by US states as an exogenous shock to the expected cost of engaging in new data collection and digitization initiatives. These laws require companies to publicly disclose data breaches. Because a public notification of a breach can damage an organization's

reputation, these laws aim at encouraging organizations to implement stronger security standards to better protect personal data. These requirements have fostered firms' implementation of new data access controls and encryption that could stifle high-tech workers' initiatives to innovate using customer data. I aim to study how these regulations affect the number of innovative firms, especially those that depend more on customer data, as well as the reallocation of high-tech inventors. Indeed, young and productive inventors might move out of firms located in geographical areas where the ability to leverage customer data is hurt.

Overall, this project could show that privacy policy affects the type and level of innovation as well as the distribution of innovative human capital. I would be very pleased to be enrolled in the NBER tutorial on the Economics of Digitization because I am convinced that the courses taught on this topic by leading researchers would greatly help me find the right direction in this research project.

My second project studies entry into entrepreneurship and subsequent entrepreneurial success, using French administrative data covering the universe of French firms and a representative sample of French entrepreneurs. The literature has shown that the majority of net job creations are done by a small fraction of specific startups (high-growth startups led by "transformational" entrepreneurs). Due to different levels and timings of adoption of digitization, returns to entrepreneurship and skills to be successful have varied over time and across sectors. This project aims to use French administrative data to assess which entrepreneurial features matter for growth, and relate these characteristics to the technologies available at a particular time or in a given industry (e.g., advertising versus health sector).

Finally, I have also started a project focusing on the effects of restricting labor mobility on capital misallocation, using evidence from the asset management industry. Exploiting the characteristics of this sector (the observability of workers' performance and productivity as well as the amount of capital under control), my main contribution is to show that the mobility of managers across firms is an important channel through which capital is efficiently matched with skill.

Academic references

Professor Augustin Landier	Professor Denis Gromb	Professor Bruno Biais
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