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Bank of Canada Monthly Research Update

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This monthly newsletter features the latest research publications by Bank of Canada economists. The report includes papers appearing in external publications and staff working papers published on the Bank of Canada's website.

PUBLISHED PAPERS

Forthcoming

Dahlhaus, Tatjana, Kristina Hess & Abeer Reza, "International Transmission Channels of U.S. Quantitative Easing: Evidence from Canada", Journal of Money, Credit and Banking

STAFF WORKING PAPERS

Akhtaruzzaman, M., Nathan Berg & Christopher Hajzler, "Expropriation Risk and FDI in Developing Countries: Does Return of Capital Dominate Return on Capital?", Bank of Canada Staff Working Paper 2017-9

Cimon, David A. & Corey Garriott, "Banking Regulation and Market Making", Bank of Canada Staff Working Paper 2017-7

Fielding, David, Christopher Hajzler & James MacGee, "Price-Level Dispersion versus Inflation-Rate Dispersion: Evidence from Three Countries", Bank of Canada Staff Working Paper 2017-3

Fung, Ben, Scott Hendry & Warren E. Weber, "Canadian Bank Notes and Dominion Notes: Lessons from Digital Currencies", Bank of Canada Staff Working Paper 2017-5

Huynh, Kim, Philipp Schmidt-Dengler, Gregor W. Smith & Angelika Welte, "Adoption Costs of Financial Innovation: Evidence from Italian ATM Cards", Bank of Canada Staff Working Paper 2017-8

Moyen, Stéphane & Josef Schroth, "Optimal Capital Regulation", Bank of Canada Staff Working Paper 2017-6

Raykov, Radoslav, "Stability and Efficiency in Decentralized Two-Sided Markets with Weak Preferences", Bank of Canada Staff Working Paper 2017-4

ABSTRACTS

International Transmission Channels of U.S. Quantitative Easing: Evidence from Canada

The U.S. Federal Reserve responded to the great recession by implementing quantitative easing, or large-scale asset purchases, when its conventional policy rate reached the zero lower bound. We assess the international spillover effects of this quantitative easing program on the Canadian economy in a factor-augmented vector autoregression (FAVAR) framework, by considering a counterfactual

scenario in which the Federal Reserve's long-term asset holdings do not rise in response to the recession. We find that U.S. quantitative easing boosted Canadian output, mainly through the financial channel.

Expropriation Risk and FDI in Developing Countries: Does Return of Capital Dominate Return on Capital?

Previously reported effects of institutional quality and political risks on foreign direct investment (FDI) are mixed and, therefore, difficult to interpret. We present empirical evidence suggesting a relatively clear, statistically robust, and intuitive characterization. Institutional factors that affect the likelihood of an abrupt and total loss of foreigners' capital (i.e., return of capital) dominate those that affect rates of return conditional on a strictly positive terminal investment value (i.e., return on capital). A one-standard deviation reduction in expropriation risk is associated with a 72 per cent increase in FDI, which is substantially larger than the effects of any other dimensions of institutional quality simultaneously controlled for in our empirical models of FDI inflows. This evidence is consistent with the predictions of a standard theory of FDI under imperfect contract enforcement. We show in the context of a simple model with endogenous expropriation that, when there is a binding threat of expropriation, foreign investors can become unresponsive to differences in other dimensions of institutions and political risk, and may even reduce optimal investment as these institutions improve.

Banking Regulation and Market Making

We present a model of market makers subject to recent banking regulations: liquidity and capital constraints in the style of Basel III and a position limit in the style of the Volcker Rule. Regulation causes market makers to reduce their intermediation by refusing principal positions. However, it can improve the bid-ask spread because it induces new market makers to enter. Since market makers intermediate less, asset prices exhibit a liquidity premium. Costs of regulation can be assessed by measuring principal positions and asset prices but not by measuring bid-ask spreads.

Price-Level Dispersion versus Inflation-Rate Dispersion: Evidence from Three Countries

Inflation can affect both the dispersion of commodity-specific price levels across locations (relative price variability, RPV) and the dispersion of inflation rates (relative inflation variability, RIV). Some menu-cost models and models of consumer search suggest that the RIV-inflation relationship could differ from the RPV-inflation relationship. However, most empirical studies examine only RIV, finding that RIV is high when inflation is high. We examine city-level retail price data from Japan, Canada and Nigeria, and find that the impact of inflation on RIV differs from its effect on RPV. In particular, positive inflation shocks reduce RPV but raise RIV.

Canadian Bank Notes and Dominion Notes: Lessons for Digital Currencies

This paper studies the period in Canada when both private bank notes and government-issued notes (Dominion notes) were simultaneously in circulation. Because both of these notes shared many of the characteristics of today's digital currencies, the experience with these notes can be used to draw lessons about how digital currencies might perform. The paper begins with a brief historical review of how these notes came into existence and of the regulations regarding their issuance. It examines historical evidence on how desirable bank notes were as media of exchange by examining how well they functioned with respect to ease of transacting, counterfeiting, safety, scarcity, and par exchange (a uniform currency). It then examines whether the introduction of government-issued notes improved how bank notes functioned as media of exchange. It finds that they did not. Improvements in the functioning of bank notes were due to changes in government regulation. Using the Canadian experience and that of the United States, the paper concludes that privately issued digital currencies will not be perfectly safe without government intervention, government-issued digital currency will not drive out existing private digital currencies, and government intervention will be required for privately issued and government-issued digital currencies to be a uniform currency.

Adoption Costs of Financial Innovation: Evidence from Italian ATM Cards

The discrete choice to adopt a financial innovation affects a household’s exposure to inflation and transactions costs. We model this adoption decision as being subject to an unobserved cost. Estimating the cost requires a dynamic structural model, to which we apply a conditional choice simulation estimator. A novel feature of our method is that preference parameters are estimated separately, from the Euler equations of a shopping-time model, to aid statistical efficiency. We apply this method to study ATM card adoption in the

Bank of Italy's Survey of Household Income and Wealth. There, the implicit adoption cost is too large to be consistent with standard models of rational choice, even when sorted by age, cohort, education or region.

Optimal Capital Regulation

We study constrained-efficient bank capital regulation in a model with market-imposed equity requirements. Banks hold equity buffers to insure against sudden loss of access to funding. However, in the model, banks choose to only partially self-insure because equity is privately costly. As a result, equity requirements are occasionally binding. Constrained-efficient regulation requires banks to build up additional equity buffers and compensates them for the cost of equity with a permanent increase in lending margins. When buffers are depleted, regulation relaxes the market-imposed equity requirements by raising bank future prospects through temporarily elevated lending margins.

Stability and Efficiency in Decentralized Two-Sided Markets with Weak Preferences

Many decentralized markets are able to attain a stable outcome despite the absence of a central authority (Roth and Vande Vate, 1990). A stable matching, however, need not be efficient if preferences are weak. This raises the question whether a decentralized market with weak preferences can attain Pareto efficiency in the absence of a central matchmaker. I show that when agent tastes are independent, the random stable match in a large-enough market is asymptotically Pareto efficient even with weak preferences. In fact, even moderate-sized markets can attain good efficiency levels. The average fraction of agents who can Pareto improve is below 10% in a market of size $n = 79$ when one side of the market has weak preferences; when both sides have weak preferences, the inefficiency falls below 10% for $n > 158$. This implies that approximate Pareto efficiency is attainable in a decentralized market even in the absence of a central matchmaker.