Sergio Armella

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Education

Ph.D., Economics, Northwestern University 2020
Fields: International Finance, Macroeconomics, Finance
Dissertation: Three Essays in Sovereign Risk
Committee: Guido Lorenzoni (Chair), Martin Eichenbaum, Luigi Bocola

M.A., Economics, Northwestern University 2015

B.A., Economics with Highest Honors, Instituto Tecnológico Autonómo de México (ITAM) 2010

Professional Experience

NERA Economic Consulting, New York City Sept. 2020 - Present
Consultant, Securities and Finance Practice

- Developed econometric and Monte Carlo models to estimate future collateral losses, default likelihood, risk, and loss severity of complex securities
- Assessed the exposure of a group of securities to LIBOR ahead of the transition towards a new benchmark rate using time series estimation techniques
- Analyzed the predictability of returns for a group of cryptocurrency assets using econometric techniques

Ministry of Finance and Public Credit, Mexico Dec. 2012 - June 2014
Economic advisor to the Deputy Minister of Finance

- Contributed to macroeconomic analysis and economic surveillance as an economic advisor to the Deputy Minister of Finance in Mexico
- Prepared global macroeconomic and financial surveillance notes for Mexico's participation in top-level international forums with the G20, IMF, Financial Stability Board, and the World Bank at the Minister and Deputy Minister of Finance level
- Participated in multiple drafting sessions for the G20 Finance Ministers and Central Bank Governors Meeting Communiqué
- Developed a policy proposal to restructure the quasi-sovereign liabilities of FONATUR (300 million USD), subject to a budget consolidation plan that would have generated 70 million USD in additional resources for investment in the next 5-year period
- Managed junior analysts and helped them develop their skills in financial modeling and writing economic reports

Evercore Partners, Mexico Sept. 2010 - Nov. 2012
Investment Banking Analyst, Public Finance and Infrastructure

- Advised State and Municipal governments in Mexico on local public finance and debt management
- Led financial analysis for debt restructuring operations of over 2 billion USD by estimating future cash flows, analyzing credit contracts, and forecasting interest payments on adjustable-rate contracts
- Organized roadshows with more than 15 national and international banks, receiving offers 2.5x the sought amount and preparing the quantitative aspect of the pitch
- Organized auctions to purchase financial derivatives to hedge against variations in the interest rate (call options for a strike level of the Mexican interbank rate)
- Saved an estimated 10 million USD for a client after finding inconsistencies in the mechanism that determined the interest rate on a credit line
- Designed a proposal for a carbon emission tax for a State Government in Mexico to boost its environmental policy goals while underpinning its fiscal sustainability

Research Papers

"Fiscal Multipliers and Sovereign Risk"

Data shows that fiscal policy is mostly pro-cyclical in emerging market economies and counter-cyclical in advanced economies. I portray sovereign risk as the explanation. My model results from the combination of a simple model of a small open economy with nominal rigidities with the canonical quantitative sovereign default model. Importantly, I incorporate the passthrough of sovereign risk to the private sector. In equilibrium, the quantitative model features an inverse relation between spreads and the size of the fiscal multiplier. Hence, the cyclicality of fiscal policy is optimally state-dependent. Countries that experience a sharp increase in sovereign spreads after a shock, optimally prefer to follow a pro-cyclical fiscal policy as borrowing conditions deteriorate and the fiscal multiplier diminishes in size. In contrast, governments that continue to face good borrowing terms after a shock, are able to expand government spending, finance it with more debt, and have small movements in sovereign spreads. This creates little to no distortions in the private sector and has a more considerable impact on output.

"Sovereign Risk and International Reserve Management"

Emerging market economies hold substantial amounts of international reserves. An open question is how a government should optimally manage these reserves when facing a debt crisis. The main contribution of this paper is to show that the answer depends on the nature of the crisis. I build a model of sovereign debt and default in which multiple equilibria are possible. In the model, government borrowing costs can increase for two reasons: a productivity shock that leads to a transitory contraction in output or a shock to lenders' beliefs that increases the possibility of a rollover crisis in the next period. The optimal reserve management policy for the government is to run down reserves in response to the first type of shock, and to accumulate reserves in response to the second. This is because reserves both help the government smooth spending when borrowing costs are high *and* reduce the effect that lenders' beliefs have on the possibility of a rollover crisis. I fit the model to match Argentine data and find that lenders' beliefs about the possibility of a rollover crisis are important for understanding the behavior of international reserves during the 2018 crisis.

"Know Your Debtor: Political Uncertainty and Sovereign Spreads" with Giacomo Magistretti

Sovereign debt spreads are very responsive to political uncertainty. We rationalize this empirical observation in a model where creditors learn the hidden propensity to honor debt obligations from government actions over time. We assume alternation in power of two government types facing different costs of default on debt. Market participants do not know which type they are facing in each period. They form beliefs about it, which are updated according to observed fiscal policy decisions and political transition probabilities. We derive the conditions for the existence of pooling and separating equilibria on default and borrowing choices. As lenders' beliefs about facing a government with low default costs strengthen, sovereign spreads increase, causing a contraction in public borrowing and spending. A version of our model calibrated to the Italian economy shows that the asymmetric information amplifies the increase in the level and the volatility of spreads stemming from political turnover, with negative welfare implications.

"Bankruptcy Costs and the Implications of the Trust Indenture Act of 1939: An Illustration from Sovereign Collective Action Clauses"

Out-of-court restructuring is limited by the Trust Indenture Act of 1939. If a firm wants to modify any core concept of a security, it requires unanimity agreement from all bondholders. This represents a cost for firms in workout. Recent developments in sovereign debt practice involved adopting collective action clause (CACs) in debt contracts. I study yield differentials between sovereign bonds that include CACs and those that do not have them. By studying sovereign bonds, I estimate the implications of the unanimity requirement that the Trust Indenture Act of 1939 imposes on firms. There appears to be no significant effect of first-

generation CACs on bond yields. The inclusion of second-generation Super-CACs seems to increase yields. This illustrates that reducing the costs of bankruptcy is possible. However, tilting the balance in favor of borrowers too much could translate into higher borrowing costs.

Seminar Presentations

Northwestern University, Rutgers University, Florida State University, Central Bank of Mexico, NERA Economic Consulting, Charles River Associates, Compass Lexecon, AQR Capital Management

Fellowships & Awards

Distinguished Teaching Assistant Award	2017
XIX Ex-ITAM Prize in Research, First Place in Economics	2014
Northwestern Graduate Fellowship	2015-2020
Fellow of the National Council for Science and Technology (CONACYT), Mexico	2014-2019

Languages

English (fluent), Spanish (native)

Programming Languages

Matlab, R, Stata, Fortran, OpenMP, Microsoft Excel, Python (intermediate), SAS (basic)