Wright, Mark L. J.

Working Paper
Interpreting the pari passu clause in sovereign bond contracts: It's all Hebrew (and Aramaic) to me

Working Paper, No. 2014-06

Provided in Cooperation with:
Federal Reserve Bank of Chicago

Suggested Citation: Wright, Mark L. J. (2014) : Interpreting the pari passu clause in sovereign bond contracts: It's all Hebrew (and Aramaic) to me, Working Paper, No. 2014-06, Federal Reserve Bank of Chicago, Chicago, IL

This Version is available at:
http://hdl.handle.net/10419/130688

Terms of use:
Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.
Interpreting the *Pari Passu* Clause in Sovereign Bond Contracts: It’s All Hebrew (and Aramaic) to Me

*Mark L. J. Wright*

May 2014

WP 2014-06
Interpreting the *Pari Passu* Clause in Sovereign Bond Contracts: It’s All Hebrew (and Aramaic) to Me

Mark L. J. Wright*

Federal Reserve Bank of Chicago, and
National Bureau of Economic Research

ABSTRACT

In this comment, we take a helicopter tour of the history of notions of “equality” and “justice” in sovereign debt restructuring in particular, and in the division of property more generally, and show that these concerns have existed for centuries, if not millennia. We argue that the issue at stake in the interpretation of the *pari passu* clause is not so much the treatment of holders of identical claims—it is now customary to treat them identically—but whether the holders of different claims should be treated differently. We show that exists a customary “principle of differentiation” that allows creditors with claims that differ in specific ways to be treated preferentially. One of these specific differences concerns debts that have been reduced in value during a previous debt restructuring or default, and based on this principle we conclude that the New York court has, if not completely misinterpreted the meaning of the *pari passu* clause, then at least misapplied it.

Keywords: Sovereign debt restructuring, pari passu, Argentina, inter-creditor equity.
JEL Codes: D63, F34, K12

*To appear in the *Capital Markets Law Journal*. Senior Economist and Research Advisor, Federal Reserve Bank of Chicago, and Faculty Research Fellow at the National Bureau of Economic Research. I thank Mitu Gulati and Ben Chabot for comments. The views expressed in this paper are those of the author and do not necessarily represent those of the Federal Reserve Bank of Chicago, the Federal Reserve System, or the National Bureau of Economic Research.
1 Introduction

*Pari Passu*: Nine letters arranged into four syllables constituting two little Latin words that translate roughly as “on equal footing”; Two little words that may have a giant effect on international capital markets, for good or for ill. For depending on whom one believes, if the interpretation of the *pari passu* clause in sovereign bond contracts by a judge in the Southern District of New York\(^1\) is allowed to stand, these words will wreak havoc in the market for sovereign debt—by causing Argentina to default\(^2\), hindering future sovereign debt restructuring operations\(^3\), and leading sovereign bond issuers to abandon the New York markets\(^4\)—or else act as its savior—by strengthening creditor rights and allowing for less risky sovereign borrowing at lower interest rates.\(^5\)

At issue is both the interpretation of the clause—what it means to place creditors “on equal footing”—and its implications—particularly the application of injunctive relief to third parties. Viewed in this context, the contribution of Chabot and Gulati\(^6\) is to further our understanding of the meaning of the *pari passu* clause. They exhibit the first known bond to use language similar in meaning to *pari passu*: holders of the Mexican Black Eagle bonds, issued in 1843, were to be treated with a “just equality”. Moreover, in documenting the context for the issue of this bond, they show that the clause was introduced in response to a debt restructuring that treated holders of identical claims differently based on their country of residence. The implication is that the language was intended to ensure that holders of identical claims would be treated identically.

---


3Felix Salmon, Argentina’s Stunning Pari Passu Loss, Reuters, October 27, 2013.


6“Santa Anna and his Black Eagle: The Origins of Pari Passu”, in this volume.
In these brief comments, we take a helicopter tour of the history of notions of “equality” and “justice” in the division of property and show that these concerns have existed for millennia. We argue that the issue at stake is not so much the treatment of holders of identical claims—it is now customary to treat them identically—but whether the holders of different claims should be treated differently. We show that there is a customary “principle of differentiation” that allows creditors with claims that differ in specific ways to be treated preferentially. One of these specific differences concerns debts that have been reduced in value during a previous debt restructuring or default, and based on this principle we conclude that the New York court has, if not completely misinterpreted the meaning of the *pari passu* clause, then at least misapplied it. In other words, the equality of treatment of both the un-restructured and restructured creditors of Argentina that the New York Courts are determined to enforce amounts to an *unjust* equality.

2 Justice, Equity, and Equality In The Division of Property From The Talmud to Today

Credit market participants widely recognize the importance of concerns for justice, equality and equity in sovereign debt restructuring as reflected in the social norm of “inter-creditor equity”\(^7\). Indeed, modern sovereign bond and syndicated loan contracts routinely include a number of clauses, in addition to *pari passu*, designed to ensure that inter-creditor equity is preserved. In bonds, these include *negative pledge* clauses to ensure a debtor will not subsequently pledge its assets to future creditors\(^8\), *mandatory prepayment* clauses requiring *pro rata* payments to all lenders in the event of a prepayment to any lender\(^9\), *cross-default* clauses allowing any lender to declare a loan in default should the debtor default on any other loan and so prevent early defaulting loans from receiving better terms\(^10\), and , in the case of syndicated sovereign loans, *sharing clauses* that explicitly ensured pro-rated payments in the

---


\(^9\) Gulati & Scott, supra note 1, at 76-7.

\(^10\) Ibid, at 26
event of a default. 11

As documented by Chabot and Gulati, these concerns were very much active in the early Nineteenth Century as well. Santa Anna’s decree of 11th May 1843 stated that it aimed to “establish a just equality amongst the creditors, as much as regards the rate of interest as the order of payment” (emphasis added). Moreover, the decree refers to an “equitable . . . distribution” of funds. Although not appearing as a contract provision in the “Black Eagle” bonds of 1843, similar language did appear in the pre-amble of these bonds.

But what does “just equality” mean in the context of a sovereign debt restructuring? What does “inter-creditor equity” mean? For that matter, what does it mean to promise to place creditors “on equal footing”? Does “equality” mean that all creditors should be paid the same absolute dollar (or Euro or peso etc.) amount regardless of the size and form of their claim? Or does it mean that they should receive a payment that represents an equal proportion of their claim? And if it is to be an equal proportion, what should it be proportional to? Should it be proportional to the face value of the debt? Or to the present value calculated using some discount rate? The market values prior to the default being announced? Or does “just equality” recognize that there should some explicit differences in treatment allowed in order to account for differences in the underlying forms of a sovereign’s debt?

If all creditor claims are identical, both in size and in form, all of these alternatives definitions of “just equality” are identical. But creditor claims are rarely identical, differing in both size (the value of the claim) and form (the currency of issue, maturity, security, treatment in a previous debt restructuring, and so on).

Even in the simplest case, where the only difference is in the size of each creditor’s claim, disagreements as to how to distribute shares of a property amongst rival claimants have been going on for, quite literally, millennia. Perhaps the best documented examples come from the Babylonian Talmud, written (in both Hebrew and Aramaic) between the 3rd and 5th Centuries of the Common Era. The Talmud contains several examples of the disposition of rival claims of different sizes to a common property.12 In some cases, the Talmud


12Kethubot 93a, describes a bankruptcy problem; Bava Metzia (2a) concerns rival claims on a garment;
specifies that all creditors should receive an equal absolute amount independent of the size of their claim. In others, the creditors were to receive a payment that was proportional to the size of their claim. In still other cases, the payments are neither equal in absolute terms, or in proportion. Whether these differences reflect special circumstances applying to each claim that are not made explicit in the Talmud,\textsuperscript{13} or reflect a sophisticated game-theoretic mechanism for discriminating between claims,\textsuperscript{14} they illustrate the difficulties associated with finding “just” settlements.

By contrast, in the context of sovereign debt restructuring there appears to be widespread agreement on how to deal with claims that are similar in form but different in size: each creditor should receive an amount that is an equal proportional of their total claim. This form of “just equality” between identical creditors appears repeatedly throughout history, and violations of this principle have resulted in strong protests. In the Mexican Eagle case, it was not the default by Mexico that stimulated British diplomatic intervention and threats of military sanctions; rather it was the different treatment of British bondholders from other creditors with identical claims.\textsuperscript{15} When in 1934 Germany announced plans to suspend payments on its foreign loans, the US Secretary of State expressed regret at the losses inflicted upon American investors; it was only when Germany announced plans to discriminate against holders of the American tranches of the Dawes and Young loans that both the American Ambassador to Germany and the Secretary State wrote condemn the departure from “unconditional equality” and the violation of the \textit{pari passu} clause.\textsuperscript{16} When the Dominican Republic swapped two similar bonds paying 4\% interest into bonds paying different rates of interest in 1897, the (predominantly Belgian) bondholders that were to be discriminated against protested successfully.\textsuperscript{17}

Similar cases, in which there were protests against discrimination between bondhold-
ers with similar claims, were sufficiently abundant that Borchard, in his ground-breaking analysis of sovereign insolvency in 1951, could state that there was a “principle of equality” across bondholders that applied to the resolution of sovereign defaults. But Borchard also went on to state that the “principle of equality ... does not signify uniformity of treatment” particularly when creditors’ claims took different forms. That is, there was a complementary “principle of differentiation”. The grounds for differentiation, and in particular discrimination in favor of particular types of bonds, included differences in the quality of the claim (such as the existence of a security interest), the purpose of the loan (for example, short term loans to fund international trade or the basic operations of the government of the country), and when the creditor was an international institution like the League of Nations or the International Monetary Fund. Of particular interest for the current case involving Argentina, claims that had already been reduced in value as a result of a prior default were often given preference.

In summary, there exists a centuries-long social norm among participants in sovereign debt markets that holders of similar debts should be treated similarly, which is typically interpreted to mean that they should be repaid in proportion to their holdings of the debt (measured at face value plus deferred interest). There is also a social norm that creditors with different claims should, in many cases, be treated differently. In the next section, we ask what this means for sovereign debt disputes today.

3 What Does this Mean for Argentina and Other Sovereigns Today?

While the Black Eagle bond represents the first known statement of a principle of equality in the treatment of different creditors in the event of a sovereign default, it does not use the words pari passu. Chabot and Gulati argue that this “just equality” clause represents

---

19Ibid at 337.
20Ibid at 340.
21Ibid at 339, 341, 356-7.
22Ibid at 346-50.
24Borchard, n10 at 338-42, 357 n.62.
the spirit of (what they call the “concept” of) the *pari passu* clause. This argument is persuasive. The term “just equality” was introduced in response to protests against discriminatory treatment that explicitly used the language “equal footing”, and hence was likely viewed as synonymous by the bondholders at the time.\(^{25}\) Moreover, the first known *pari passu* clause in a sovereign bond was introduced under very similar circumstances to the Black Eagle bonds. In the same way that the just equality clause was introduced in response to past discrimination between holders of identical claims on the basis of their nationality, the first known use of an explicit *pari passu* clause was by Bolivia in 1872, a time in which concerns about discrimination between bondholders of different nationalities were also high following the collapse of plans to create an international bondholder body, and the rise of competing national bondholder groups like the British Council of Foreign Bondholders in 1868 (to become the Corporation of Foreign Bondholders in 1873).\(^{26}\)

But as argued above, agreeing that the *pari passu* clause is intended to ensure a just equality between creditors would only appear to imply equal treatment of creditors that are holding identical (or at least very similar) claims. When creditors are holding distinctly different claims, discrimination appears to have been the rule. In the case of NML v Argentina, the plaintiffs are holding bonds that are in most cases identical to the ones previously held by the restructured creditors. The restructured creditors now hold bonds that are distinctly different, most importantly in the sense that they were reduced by almost 70% of their value. Treating these creditors “equally” based on their *ex post* (after restructuring) claims, as interpreted by the New York Court as implying equal proportionate payment, requires Argentina to pay in full the un-restructured claims of NML, while paying in full the much reduced claims of the restructured creditors. This is inconsistent with an *ex ante* (pre restructuring) “principle of equality”, as creditors with identical *ex ante* claims are being treated differently. Moreover, it is inconsistent with an *ex post* “principle of differentiation”, as it does not recognize the difference between the restructured and un-restructured debts and in particular violates the custom of treating previously restructured creditors preferentially.

\(^{25}\)The language was used by both the London Times and the Chairman of the Committee of Spanish American Bondholders. Chabot and Gulati at 23.

By contrast, the Republic of Argentina’s offer to give NML the same settlement terms as it agreed with the restructured creditors satisfies both an *ex ante* “principle of equality” (as holders of identical claims *ex ante* are being given the same treatment) and an *ex post* “principle of differentiation” in that the previously restructured creditors are receiving the same amounts in absolute terms as NML, but are being awarded a higher (indeed, full) proportion of their *ex post* claims.

## 4 Concluding Thoughts

One response to the surprising interpretation of the *pari passu* clause offered by the New York Court is to advocate that sovereigns delete the clause from their sovereign bond contracts. However, unless the clause is replaced with a similar clause guaranteeing “just equality”, this is almost certainly a terrible idea. This is because there are at least two reasons to think that concerns for inter-creditor equity will only become increasingly important in the years ahead.

The first reason is the increasingly widespread adoption of aggregation clauses in sovereign bond contracts. First introduced by Uruguay, aggregation clauses allow a super-majority of bondholders drawn from a set of potentially very different bonds to impose a restructuring on all bonds within the set. The Eurogroup has committed to introduce aggregation clauses into all Euro area bonds starting in 2013, which might lead to their more widespread adoption by other countries. And although these clauses often also require a super-majority of the holders of each bond to approve a restructuring, Greece used legislation to retroactively insert an aggregation clause into its own domestic law bonds that did not include this protection for each bond (nor did these bonds include a *pari passu* clause). As a consequence, the possibility that a supermajority of bondholders might impose an inequitable restructuring on a minority of bondholders has become more likely.

The second reason is that there is already a precedent for the use of aggregation clauses to impose a highly discriminatory restructuring. The recent Greek debt restructuring, which made use of aggregation clauses, involved a large number of bonds with maturities ranging

---

27 Gulati and Scott supra note 1 at 169.
from the very short term up to 45 years.\textsuperscript{29} The bonds were mostly similar in form, except for differences in their maturity. Despite their similarity, the degree of discrimination across these bonds was extreme: the private holders of some short term bonds had their value reduced by almost 90 percent, while the private holders of some long-dated debts had their claims reduced in value by less than 20 percent.\textsuperscript{30} And bonds held by some creditors, the European Central Bank, European national central banks, and the European Investment Bank, were not reduced in value at all despite being identical to bonds held by private creditors.\textsuperscript{31} This degree of discrimination appears to be unprecedented.\textsuperscript{32}

In summary, the evidence shows that concerns for inter-creditor equity or the “just equality” of treatment of creditors have been around for millennia and, in the case of sovereign borrowing, at least for centuries. Recent developments in sovereign debt markets suggest that these concerns may intensify in the future, emphasizing the importance of clarifying the meaning of the \textit{pari passu} clause. In these notes, we have argued that this clause is only intended to ensure the identical treatment of creditors holding identical claims; when creditor claims differ, as they do in the Argentina case, creditors should be treated differently, and custom dictates that the restructured creditors should be treated preferentially. After all, had the drafters of the \textit{pari passu} clause wanted to ensure ratable payments across all creditor claims, they could have substituted two other little Latin words—\textit{pro rata}—for \textit{pari passu}.\textsuperscript{33}


\textsuperscript{30}Ibid at 21.

\textsuperscript{31}Although loans that originated from international organizations are typically treated preferentially, there is no known precedent for loans that originated from private sector creditors and that were subsequently acquired on secondary markets by international institutions to receive preferential treatment.

\textsuperscript{32}Zettelmeyer et al, supra note 29, n.27 at 21-2.

\textsuperscript{33}Indeed, some modern bonds specifically require ratable payment. See Tolek Petch “NML v. Argentina in an English Legal Setting” in this volume at 6.
# Working Paper Series

A series of research studies on regional economic issues relating to the Seventh Federal Reserve District, and on financial and economic topics.

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>WP-11-xx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate Average Fuel Economy Standards and the Market for New Vehicles</td>
<td>Thomas Klier and Joshua Linn</td>
<td>WP-11-01</td>
</tr>
<tr>
<td>The Role of Securitization in Mortgage Renegotiation</td>
<td>Sumit Agarwal, Gene Amromin, Itzhak Ben-David, Souphala Chomsisengphet, and Douglas D. Evanoff</td>
<td>WP-11-02</td>
</tr>
<tr>
<td>Market-Based Loss Mitigation Practices for Troubled Mortgages</td>
<td>Sumit Agarwal, Gene Amromin, Itzhak Ben-David, Souphala Chomsisengphet, and Douglas D. Evanoff</td>
<td>WP-11-03</td>
</tr>
<tr>
<td>Federal Reserve Policies and Financial Market Conditions During the Crisis</td>
<td>Scott A. Brave and Hesna Genay</td>
<td>WP-11-04</td>
</tr>
<tr>
<td>The Financial Labor Supply Accelerator</td>
<td>Jeffrey R. Campbell and Zvi Hercowitz</td>
<td>WP-11-05</td>
</tr>
<tr>
<td>Survival and long-run dynamics with heterogeneous beliefs under recursive preferences</td>
<td>Jaroslav Borovička</td>
<td>WP-11-06</td>
</tr>
<tr>
<td>A Leverage-based Model of Speculative Bubbles (Revised)</td>
<td>Gadi Barlevy</td>
<td>WP-11-07</td>
</tr>
<tr>
<td>Estimation of Panel Data Regression Models with Two-Sided Censoring or Truncation</td>
<td>Sule Alan, Bo E. Honoré, Luojia Hu, and Søren Leth–Petersen</td>
<td>WP-11-08</td>
</tr>
<tr>
<td>Fertility Transitions Along the Extensive and Intensive Margins</td>
<td>Daniel Aaronson, Fabian Lange, and Bhashkar Mazumder</td>
<td>WP-11-09</td>
</tr>
<tr>
<td>Black-White Differences in Intergenerational Economic Mobility in the US</td>
<td>Bhashkar Mazumder</td>
<td>WP-11-10</td>
</tr>
<tr>
<td>Business Networks, Production Chains, and Productivity:</td>
<td>Ezia Oberfield</td>
<td>WP-11-12</td>
</tr>
<tr>
<td>Equilibrium Bank Runs Revisited</td>
<td>Ed Nosal</td>
<td>WP-11-13</td>
</tr>
<tr>
<td>Are Covered Bonds a Substitute for Mortgage-Backed Securities?</td>
<td>Santiago Carbó-Valverde, Richard J. Rosen, and Francisco Rodríguez-Fernández</td>
<td>WP-11-14</td>
</tr>
<tr>
<td>The Cost of Banking Panics in an Age before “Too Big to Fail”</td>
<td>Benjamin Chabot</td>
<td>WP-11-15</td>
</tr>
</tbody>
</table>
Working Paper Series (continued)

Import Protection, Business Cycles, and Exchange Rates:
Evidence from the Great Recession
Chad P. Bown and Meredith A. Crowley

Examining Macroeconomic Models through the Lens of Asset Pricing
Jaroslav Borovička and Lars Peter Hansen

The Chicago Fed DSGE Model
Scott A. Brave, Jeffrey R. Campbell, Jonas D.M. Fisher, and Alejandro Justiniano

Macroeconomic Effects of Federal Reserve Forward Guidance
Jeffrey R. Campbell, Charles L. Evans, Jonas D.M. Fisher, and Alejandro Justiniano

Modeling Credit Contagion via the Updating of Fragile Beliefs
Luca Benzoni, Pierre Collin-Dufresne, Robert S. Goldstein, and Jean Helwege

Signaling Effects of Monetary Policy
Leonardo Melosi

Empirical Research on Sovereign Debt and Default
Michael Tomz and Mark L. J. Wright

Credit Risk and Disaster Risk
François Gourio

From the Horse’s Mouth: How do Investor Expectations of Risk and Return Vary with Economic Conditions?
Gene Amromin and Steven A. Sharpe

Using Vehicle Taxes To Reduce Carbon Dioxide Emissions Rates of New Passenger Vehicles: Evidence from France, Germany, and Sweden
Thomas Klier and Joshua Linn

Spending Responses to State Sales Tax Holidays
Sumit Agarwal and Leslie McGranahan

Micro Data and Macro Technology
Ezra Oberfield and Devesh Raval

The Effect of Disability Insurance Receipt on Labor Supply: A Dynamic Analysis
Eric French and Jae Song

Medicaid Insurance in Old Age
Mariacristina De Nardi, Eric French, and John Bailey Jones

Fetal Origins and Parental Responses
Douglas Almond and Bhashkar Mazumder
Working Paper Series (continued)

Repos, Fire Sales, and Bankruptcy Policy
Gaetano Antinolfi, Francesca Carapella, Charles Kahn, Antoine Martin, David Mills, and Ed Nosal
WP-12-15

Speculative Runs on Interest Rate Pegs
The Frictionless Case
Marco Bassetto and Christopher Phelan
WP-12-16

Institutions, the Cost of Capital, and Long-Run Economic Growth:
Evidence from the 19th Century Capital Market
Ron Alquist and Ben Chabot
WP-12-17

Emerging Economies, Trade Policy, and Macroeconomic Shocks
Chad P. Bown and Meredith A. Crowley
WP-12-18

The Urban Density Premium across Establishments
R. Jason Faberman and Matthew Freedman
WP-13-01

Why Do Borrowers Make Mortgage Refinancing Mistakes?
Sumit Agarwal, Richard J. Rosen, and Vincent Yao
WP-13-02

Bank Panics, Government Guarantees, and the Long-Run Size of the Financial Sector:
Evidence from Free-Banking America
Benjamin Chabot and Charles C. Moul
WP-13-03

Fiscal Consequences of Paying Interest on Reserves
Marco Bassetto and Todd Messer
WP-13-04

Properties of the Vacancy Statistic in the Discrete Circle Covering Problem
Gadi Barlevy and H. N. Nagaraja
WP-13-05

Credit Crunches and Credit Allocation in a Model of Entrepreneurship
Marco Bassetto, Marco Cagetti, and Mariacristina De Nardi
WP-13-06

Financial Incentives and Educational Investment:
The Impact of Performance-Based Scholarships on Student Time Use
Lisa Barrow and Cecilia Elena Rouse
WP-13-07

The Global Welfare Impact of China: Trade Integration and Technological Change
Julian di Giovanni, Andrei A. Levchenko, and Jing Zhang
WP-13-08

Structural Change in an Open Economy
Timothy Uy, Kei-Mu Yi, and Jing Zhang
WP-13-09

The Global Labor Market Impact of Emerging Giants: a Quantitative Assessment
Andrei A. Levchenko and Jing Zhang
WP-13-10
Working Paper Series (continued)

Size-Dependent Regulations, Firm Size Distribution, and Reallocation
François Gourio and Nicolas Roys

Modeling the Evolution of Expectations and Uncertainty in General Equilibrium
Francesco Bianchi and Leonardo Melosi

Rushing into American Dream? House Prices, Timing of Homeownership, and Adjustment of Consumer Credit
Sumit Agarwal, Luojia Hu, and Xing Huang

The Earned Income Tax Credit and Food Consumption Patterns
Leslie McGranahan and Diane W. Schanzenbach

Agglomeration in the European automobile supplier industry
Thomas Klier and Dan McMillen

Human Capital and Long-Run Labor Income Risk
Luca Benzoni and Olena Chyrk

The Effects of the Saving and Banking Glut on the U.S. Economy
Alejandro Justiniano, Giorgio E. Primiceri, and Andrea Tambalotti

A Portfolio-Balance Approach to the Nominal Term Structure
Thomas B. King

Gross Migration, Housing and Urban Population Dynamics
Morris A. Davis, Jonas D.M. Fisher, and Marcelo Veracierto

Very Simple Markov-Perfect Industry Dynamics
Jaap H. Abbring, Jeffrey R. Campbell, Jan Tilly, and Nan Yang

Bubbles and Leverage: A Simple and Unified Approach
Robert Barsky and Theodore Bogusz

The scarcity value of Treasury collateral:
Repo market effects of security-specific supply and demand factors
Stefania D'Amico, Roger Fan, and Yuriy Kitsul

Gambling for Dollars: Strategic Hedge Fund Manager Investment
Dan Bernhardt and Ed Nosal

Cash-in-the-Market Pricing in a Model with Money and Over-the-Counter Financial Markets
Fabrizio Mattesini and Ed Nosal

An Interview with Neil Wallace
David Altig and Ed Nosal

WP-13-11
WP-13-12
WP-13-13
WP-13-14
WP-13-15
WP-13-16
WP-13-17
WP-13-18
WP-13-19
WP-13-20
WP-13-21
WP-13-22
WP-13-23
WP-13-24
WP-13-25
Firm Dynamics and the Minimum Wage: A Putty-Clay Approach  
*Daniel Aaronson, Eric French, and Isaac Sorkin*

Policy Intervention in Debt Renegotiation:  
Evidence from the Home Affordable Modification Program  
*Sumit Agarwal, Gene Amromin, Itzhak Ben-David, Souphala Chomsisengphet, Tomasz Piskorski, and Amit Seru*

The Effects of the Massachusetts Health Reform on Financial Distress  
*Bhashkar Mazumder and Sarah Miller*

Can Intangible Capital Explain Cyclical Movements in the Labor Wedge?  
*François Gourio and Leena Rudanko*

Early Public Banks  
*William Roberds and François R. Velde*

Mandatory Disclosure and Financial Contagion  
*Fernando Alvarez and Gadi Barlevy*

The Stock of External Sovereign Debt: Can We Take the Data at ‘Face Value’?  
*Daniel A. Dias, Christine Richmond, and Mark L. J. Wright*

Interpreting the *Pari Passu* Clause in Sovereign Bond Contracts:  
It’s All Hebrew (and Aramaic) to Me  
*Mark L. J. Wright*