

# Online Appendices

## APPENDIX A: DESCRIPTIVE STATISTICS AND ROBUSTNESS TESTS

### A.1: THE DATA.

Table A.1.1 provides summary statistics of loan characteristics, comparing Type I, Type II and non-hypothecated bonds. Type I hypothecations provided more information on the object of the loan. They also displayed a higher yield spread over British consols at issuance. Finally, Type I hypothecations involved smaller deals (5 million pounds on average compared to 9 million pounds for non-hypothecated), shorter maturities (28 years versus 44 years), and defaulted more often (a 54 percent default rate against the 8.2 percent of non-hypothecated bonds). Furthermore, from the Table we notice that ordinary underwriters made a stronger show amidst Type I hypothecations than among non-hypothecated loans.

TABLE A.1.1  
DESCRIPTIVE STATISTICS FOR THE 116 BONDS LIST

<b>Non-Hypothecated</b>					
	Mean	S.D.	Min	Max	N.
Purpose	0.449	0.503	0	1	49
Sinking Fund	0.633	0.487	0	1	49
Spread at Issuance	2.999	1.54	1.156	8.254	41
Prestige	0.531	0.504	0	1	49
Bond Volume	9.065	19.775	0.358	120	49
Maturity	44.23	23.649	4	100	37
Bond Default	0.082	0.277	0	1	49
<b>Type I Hypothecations</b>					
	Mean	S.D.	Min	Max	N.
Purpose	0.673	0.474	0	1	55
Sinking Fund	0.873	0.336	0	1	55
Spread at Issuance	4.642	1.812	1.609	9.33	48
Prestige	0.055	0.229	0	1	55
Bond Volume	5.198	8.608	0.2	36.8	55
Maturity	27.873	20.476	1.5	100	55
Bond Default	0.545	0.503	0	1	55
<b>Type II Hypothecations</b>					
	Mean	S.D.	Min	Max	N.
Purpose	0.500	0.522	0	1	12
Sinking Fund	1	0	1	1	12
Spread at Issuance	3.689	2.113	0.608	6.83	11
Prestige	0.167	0.389	0	1	12
Bond Volume	11.072	26.235	0.135	94.005	12
Maturity	35.167	31.550	13	100	12
Bond Default	0.500	0.522	0	1	12

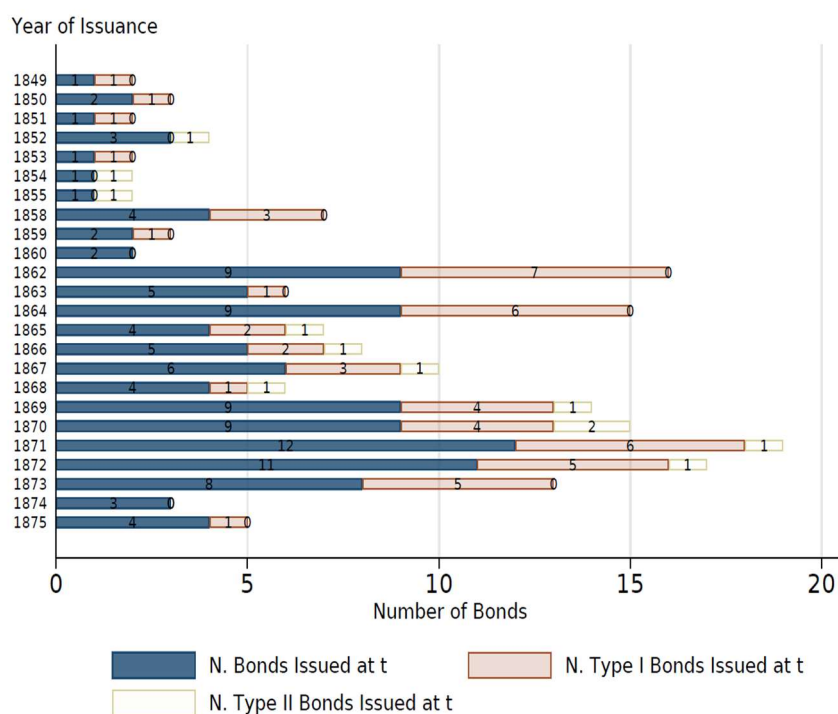
*Notes:* This table presents descriptive statistics for the cross-section of bonds, broken down by hypothecation status of the bond. Purpose is a dummy taking value one if the bond's prospect includes a description of the purpose for which the debt is underwritten; Spread at Issuance records the yield spread at which the bond is presented to the market by the underwriter, the benchmark being the British consols; Prestigious Underwriter is a dummy taking value one if the bond is underwritten by either Rothschild or Baring; Bond Volume records the issuance in millions of pounds; Maturity records the maturity in years, with missing Maturity observations in the "Non-Hypothecated" panel due to perpetuities. Bond Default is a dummy recording whether the bond ever defaults between its issuance and 1880, based on the account in Lucas Nash (1881).

*Sources:* Authors' database as collected from the prospectuses. British Consols' yields to compute Spread at Issuance from Klovland (1994)'s Appendix Table 1.

## A.2: BOND ISSUANCE OVER TIME AND TYPE

Figure A.2.1 gives time series evidence on the hypothecation mania (1849-1875). It shows the number of issues under Type I, Type II and non-hypothecated bonds. Figure A.2.2 shows the incidence of the various revenues pledged in hypothecations. Pledging the income of the customhouse was a favorite, which makes sense given the importance they had in the tax system of many sovereign borrowers (see Mazzuca 2021).

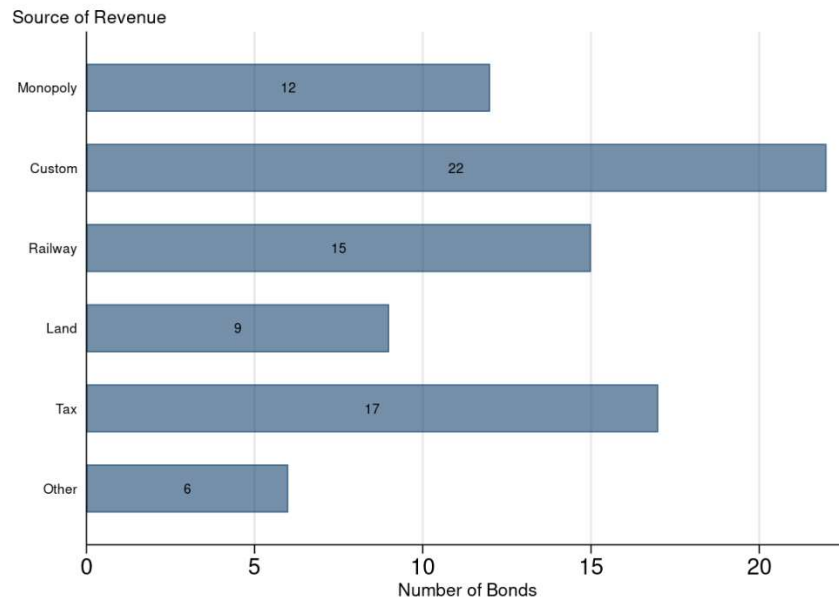
FIGURE A.2.1  
BOND ISSUANCE OVER TIME AND BOND TYPE



*Notes:* This figure documents the distribution of bonds over year of issuance. From the left, darker bars count the number of non-hypothecated bonds issued that year, lighter bars count Type I bonds, and transparent bars count Type II bonds.

*Sources:* Authors' database as collected from the prospectuses.

FIGURE A.2.2  
TYPE I COLLATERAL CLAUSES DESCRIPTION



*Notes:* This figure presents summaries of prospectus characteristics for the fifty-five Type I bonds, focusing on the sources of revenue behind the pledges. The “Monopoly” category includes all pledges backed by guano revenues; tobacco revenues; revenues from salt; revenues from coal and mahogany; from mercury; from fish and locks; from a navigation company. The “Custom” category includes all revenues from custom houses, pledged in the majority of Type I prospectuses. The “Railway” category includes all pledges of railways and revenues from railways, while the “Land” category includes pledges of land or of revenues from land. The “Tax” category includes all pledges of revenues from provincial taxes; “octrois”, taxes on the movement of goods for sale within a state; taxes on the sale of small animals and the manufacture of oil; taxes on liquor and coffee; personal (income) tax; excises; taxes on slaughterhouses; the sale of stamps and licenses. The “Other” category includes pledges of a reserve fund, company shares, rice, a wharf and its stores; a compensation payment from Russia to Denmark, for Denmark’s renunciation to imposing tolls on navigation in the Oresund. The number on each bar counts how many bonds pledge that specific revenue or physical asset. Categories are not mutually exclusive, as each bond may pledge multiple items.

*Sources:* Authors’ database as collected from the prospectuses.

## A.3: ESTIMATING THE VALUE OF TYPE I HYPOTHECATIONS, ALTERNATIVE METHOD

Here we consider an alternative strategy to estimate the effect of Type I hypothecations. It builds on the intuition that unobservable factors are essentially “country risk”, itself captured by sovereign spreads. If we stack each country’s average spread in a single variable, we can use it as a control for risk in place of one dummy variable per country, or country-time. Including this variable in a regression, we can then compare spreads on Type I and non-hypothecated bonds not only for those countries that issued both Type I and non-hypothecated bonds, but across different countries that have similar yields and issued *either or both* Type I or non-hypothecated bonds. Such conditional comparison is arguably inferior in purity to the approach in the text.<sup>1</sup> But it allows to use almost all observations in our dataset and it offers a way to test the robustness of the effect of hypothecation. In particular, if the Type I premium estimated in the text is just due to fixed effects imposed restrictions, we should expect this framework to return a very different estimate.

In Table A.3.1, column (1), we measure country risk with average volume-weighted spreads for each sovereign. We find that the yield on Type I bonds by countries with similar average yield-spreads stood at 71 basis points below non-hypothecated ones. This number is to be compared to the result of the country fixed effect regression in Table 4, column (4). Performing this comparison, we see that the estimated premium is 30 basis points less than what obtained with country fixed effects, but still statistically and economically significant and well within the range of Table 4 estimates.

In column (2), we instead measure country risk with the lag of the average volume-weighted spread for each sovereign. The result shows that the spread on Type I bonds issued by sovereigns of similar risk was 55 basis points below the spread for non-hypothecated bonds. This number is to be compared to the one obtained in the country-time fixed effect regression displayed in Table 4 column (6), it is 30 basis points smaller, but still negative, within Table 4’s estimates range, and significant.

Finally, to mitigate endogeneity concerns, we modify the risk measure by excluding each bond’s own spread from the sovereign-level averaging described for column (2). Column (3) shows that the spread of Type Is by sovereigns whose *other* bonds’ spread last year was similar was 72 basis points lower than their non-hypothecated counterparts. This number should be again compared to Table 4 column (6), and it is only 13 basis points smaller.

In conclusion, this alternative approach to measuring the Type I premium returns estimates that are economically and statistically close to what we find employing fixed effects methods.

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<sup>1</sup> In order to ensure comparability, we use the `reghdfe` package by Sergio Correia (Correia 2014) for all regression results displayed both in this Appendix as well as in the main body of the text. The package helps estimating models with multi-way fixed effects and clustering, automatically handling singletons.

TABLE A.3.1  
ALTERNATIVE CONTROLS FOR COUNTRY-RISK

<i>Dependent Variable: Yield Spread</i>			
	(1)	(2)	(3)
Type I	-.7108** (-2.31)	-.5562* (-1.94)	-.7223** (-2.33)
Perpetuities	.628* (1.75)	.476 (1.38)	.5293 (1.38)
Log of Volume	.1225* (1.88)	.1359* (1.73)	.1874** (2.32)
Log of Maturity	-.5495*** (-2.88)	-.7533*** (-3.93)	-.7525*** (-3.49)
Prestige	-.4786 (-1.35)	-.4936 (-1.34)	-.5735 (-1.53)
Purpose	.3181** (2.24)	.5033*** (2.90)	.5513*** (2.84)
Vol. Wgt Yield $c$	Yes		
Vol. Wgt Yield $c, t-1$		Yes	
Adj. Vol. Wgt Yield $c, t-1$			Yes
Year FE	Yes	Yes	Yes
Adj. R2	.7677	.9163	.9316
Observations	640	594	507

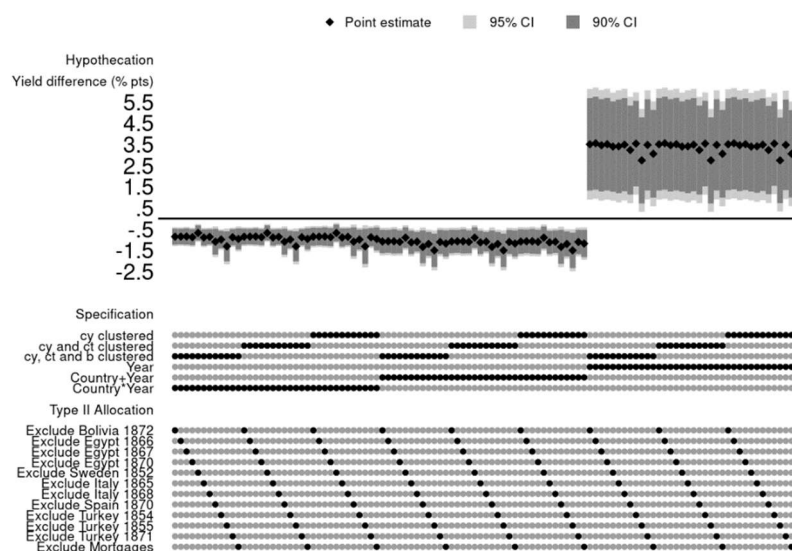
*Notes:* The first column presents the results that use the average country yield-spreads over the whole sample, in place of the country FEs; the second column employs the lag yearly averages of each country bonds' yield-spreads in place of the country-year FE; the last column employs the lag of yearly averages of each country's bonds yield-spreads computed excluding each time the bond related to the  $bcyt$  observation, in place of the country-year FE. The number of observations changes across column-blocks with the risk proxy employed. It works as follows: When using sovereign average yield (column 1) all observations are included, as all such observations belong to sovereigns with more than one yield data recorded. When using the yearly lag of sovereign yield, we lose 46 observations (column 2). These observations are due to bonds belonging to sovereigns that lacked other priced bonds the year before. Finally, when computing yearly lag of sovereign yields excluding for each bond its own lagged data point, we lose 133 observations (column 3) due to bonds by sovereigns without at least two priced bonds last year. Errors are clustered at the country-year of bond issuance level, with 80 country-year clusters over the first column and 72 country-year clusters over the last two columns; t-statistics are in parenthesis.

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

*Sources:* The table presents results from the estimation of Equation (2) controlling for country-risk with average yields instead of fixed effects.

## A.4: ALTERNATIVE TYPE II ALLOCATIONS

FIGURE A.4.1  
TABLE 4 RESULTS ARE ROBUST TO TYPE II ALLOCATIONS



*Notes:* We record estimates as black diamonds and 95% confidence intervals as grey shaded areas. Black dots below the plot mark the combination of clustering scheme, fixed effect and definition of Type II hypothecations under which we obtain each estimate. Under “Specification”, the first three lines record the clustering scheme. “cy clustered” stands for the country-year of issuance of the bond scheme we adopt in Table 4. “cy and ct clustered” stands for doubly clustered errors at the country-year of bond’s issuance level, and at the country-year of yield observation’s level. “cy, ct and b clustered” adds a further clustering layer at the bond level. The second three lines record the fixed effect scheme. A black dot to the right of “Year” signifies that we obtained the estimate only absorbing fixed effects for the year in which the yield spread observation was recorded; “Country + Year” that we absorbed country and year fixed effects separately; “Country\*Year” that we absorbed joint country-year fixed effects. Under “Type II Definition”, we record which bonds or group of bonds we stopped counting as a Type II. For example, a black dot to the right of “Exclude Italy 1868” implies that we did not count the Italian Tobacco loan as a Type II hypothecation, but only as a Type I. We thus only dropped observations relative to the other 10 Type II hypothecations with yield-spread observations and proceeded estimating Equation (2) including the Italian Tobacco bond’s observations.

*Sources:* The figure presents a specification curve for the estimation of Type I hypothecation’s effect on yield spreads in Equation (2), under alternative definitions of Type II bonds.

In this final robustness exercise, we examine the sensitivity of our estimates to alternative definitions of what counts as Type I or Type II bond.<sup>2</sup> The coding of collateral clauses as Type I or II carries a degree of subjectivity because archival material has to be interpreted by the researcher. In this section we use the Specification Curve approach and experiment with changes in allocations of Type

<sup>2</sup> Robustness to clustering is “mechanical”, thus we do not comment it, but we limit to notice that our standard errors do not change. We remind the reader that the baseline clustering scheme, marked as *cy* in Figure A.4.1, counts as belonging to the same cluster all observations belonging to bonds issued in the same year by the same sovereign, or issued in multiple years through multiple tranches of the same bond.

I/Type II securities (Simonsohn, Simmons, and Nelson 2020). A Specification Curve plots many estimates of the same parameter under alternative specifications and can be a useful tool to distil the sensitivity of results to modelling choices. In what follows we use it to gauge the effect of re-allocating individual securities in the other group.<sup>3</sup>

Figure A.3.1 plots point estimates and confidence intervals for estimates of the effect of Type I hypothecations, always including all controls but modifying the allocation of bonds across the Type I/Type II classes each time. At the bottom of the graph, we record with black dots allocation modifications. To each black dot corresponds a different estimation of the Type I premium in Equation (2), each time including the yield observations belonging to a different Type II bond, which we reclassify as Type I only for the purpose of this robustness. The Figure shows that results are robust to perturbations. Hypothecated bond spreads range at about 350 basis points above the average non-hypothecated bond yield. At the same time, we always detect a statistically and economically significant within-country Type I premium against non-hypothecated bonds of about 100 basis points.

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<sup>3</sup> The code employed to obtain the graphs builds on the code made available by Hans H. Sieversten at <https://github.com/hhsievertsen/speccurve>.

## APPENDIX B: NEW CAPITAL CALLS 1849-1875, A LIST

TABLE B.1: THE BOND SAMPLE

<b>Bond</b>	<b>Hypothecation</b>	<b>Pledge</b>	<b>Yield Obs</b>	<b>Public Source</b> mm/dd/yyyy
Argentine 1866 I (First issue)	Not Hypothecated		5	<i>Times</i> , 01/04/1866
Argentine 1868 II (Second issue of 1866)	Not Hypothecated		8	<i>The London Standard</i> , 06/16/1868; <i>Times</i> , 06/16/1868
Argentine 1871 (6% Public Works)	Type I Hypothecation	Custom	5	<i>The London Standard</i> , 04/03/1871 and 04/04/1871; <i>The Morning Post</i> , 04/03/1871 and 04/04/1871
Argentine 1872 a (7% Entre Rios)	Type I Hypothecation	Land, Tax	4	<i>Times</i> , 01/24/1872
Argentine 1872 b (6% Hard dollar)	Not Hypothecated		4	<i>Times</i> , 02/06/1872
Argentine 1873 (Buenos Ayres)	Not Hypothecated		2	<i>Times</i> , 12/13/1873
Argentine 1874	Not Hypothecated		0	<i>Times</i> , 07/27/1874; <i>The Globe</i> , 07/27/1874
Austria 1852 5%	Not Hypothecated		6	<i>The Morning Chronicle</i> , 05/25/1852
Belgium 1874 (3% Public Works)	Not Hypothecated		2	<i>The London Standard</i> , 03/06/1874
Bolivia 1872	Type II Hypothecation	Money in trust	4	<i>Times</i> , 01/20/1872
Brazil 1852	Not Hypothecated		12	<i>The London Daily News</i> , 08/02/1852; <i>The Manchester Courier</i> , 08/07/1852
Brazil 1858 (Imperial Brazilian 4.5%)	Not Hypothecated		12	<i>The London Daily News</i> , 05/26/1858
Brazil 1860	Not Hypothecated		12	<i>Times</i> , 03/21/1860
Brazil 1863	Not Hypothecated		12	<i>Times</i> , 10/08/1863
Brazil 1865	Not Hypothecated		11	<i>Times</i> , 09/14/1865
Brazil 1871	Not Hypothecated		5	<i>Times</i> , 02/24/1871
Brazil 1875	Not Hypothecated		1	<i>Times</i> , 01/20/1875
Chile 1858	Type I Hypothecation	Other	12	<i>The London Daily News</i> , 11/26/1858
Chile 1866 (A&B)	Type I Hypothecation	Monopoly	2	<i>The London Standard</i> , 02/27/1866; <i>The Morning Post</i> , 02/28/1866; <i>Times</i> , 02/28/1866
Chile 1867 A	Type I Hypothecation	Custom	9	<i>Times</i> , 01/17/1867 and 01/18/1867
Chile 1867 B	Not Hypothecated		9	<i>Times</i> , 06/29/1867
Chile 1870	Type I Hypothecation	Railway	6	<i>Times</i> , 01/31/1870
Chile 1873	Type I Hypothecation	Railway	3	<i>Times</i> , 03/29/1873
Chile 1875	Type I Hypothecation	Railway	1	<i>Times</i> , 04/02/1875
Colombia 1863 (New Grenada)	Type I Hypothecation	Monopoly, Railway	12	<i>The Morning Post</i> , 09/22/1863
Costa Rica 1871 I	Type I Hypothecation	Custom	5	<i>Times</i> , 05/09/1871
Costa Rica 1872	Type I Hypothecation	Monopoly, Railway, Tax	4	<i>Times</i> , 05/04/1872
Denmark 1849 5%	Type I Hypothecation	Land	0	Fenn (1855)
Denmark 1850 5%	Type I Hypothecation	Land	0	<i>The London Standard</i> , 03/18/1850
Denmark 1863 (A.B.C.)	Not Hypothecated		11	<i>The London (Evening) Standard</i> , 02/26/1863; <i>Times</i> , 02/27/1863



Denmark 1864 (A.B.C.)	Not Hypothecated		11	<i>Times</i> , 01/13/1864; <i>The London Standard</i> , 01/13/1864; Fenn (1869)
Denmark 1864 (Debentures)	Type I Hypothecation	Other	11	<i>Times</i> , 11/30/1864
Egypt 1862 a II	Type I Hypothecation	Tax	12	<i>Times</i> , 08/01/1862
Egypt 1862 b I	Type I Hypothecation	Tax	12	<i>Times</i> , 04/07/1862
Egypt 1864	Type I Hypothecation	Tax	12	<i>Times</i> , 11/15/1864
Egypt 1866 a (Railway Debentures)	Type I Hypothecation	Railway	8	<i>Times</i> , 01/17/1866 and 01/18/1866
Egypt 1866 b (Viceroy Ismael Pasha)	Type II Hypothecation	Personal property of Khedive	10	<i>Times</i> , 03/21/1866
Egypt 1867 (Viceroy Mustapha Pascha's)	Type II Hypothecation	Personal property of Khedive	8	<i>Times</i> , 11/21/1867
Egypt 1868	Type I Hypothecation	Monopoly, Custom, Tax	8	<i>Times</i> , 07/16/1868
Egypt 1870 (Daira Sanieh)	Type II Hypothecation	Personal property of Khedive	6	<i>Times</i> , 04/26/1870
Egypt 1873	Type I Hypothecation	Railway, Land, Tax	3	<i>Times</i> , 07/26/1873
European Commission of the Danube 1869	Type II Hypothecation	Tolls on Danube	0	<i>The London Standard</i> , 03/08/1869
France 1870	Not Hypothecated		5	<i>Times</i> , 10/25/1870
France 1871	Not Hypothecated		5	<i>Times</i> , 06/28/1871
France 1872	Not Hypothecated		4	<i>Times</i> , 07/27/1872
Germany 1870	Not Hypothecated		1	<i>Times</i> , 12/14/1870
Germany 1871 (Second emission)	Not Hypothecated		1	<i>Times</i> , 01/26/1871
Guatemala 1869	Type I Hypothecation	Custom	7	<i>Times</i> , 04/05/1869
Honduras 1867 (Railway loan)	Type I Hypothecation	Railway, Other	8	<i>Times</i> , 11/11/1867
Honduras 1870 (Railway loan)	Type I Hypothecation	Railway	6	<i>Times</i> , 06/21/1870
Hungary 1872	Not Hypothecated		0	<i>Pall Mall Gazette</i> , 01/02/1872; <i>Times</i> , 01/02/1872
Hungary 1873 (Government loan)	Not Hypothecated		3	<i>Times</i> , 01/21/1873
Hungary 1873 (Treasury Bond)	Type I Hypothecation	Land	2	<i>The London Standard</i> , 12/11/1873
Italy 1851 (Sardinian 5%)	Type I Hypothecation	Railway	12	<i>The Morning Post</i> , 07/01/1851
Italy 1862 (Maremma Railway)	Type I Hypothecation	Railway	12	<i>The Morning Chronicle</i> , 02/20/1862; <i>Times</i> , 02/20/1862
Italy 1863 (5% Rentes)	Not Hypothecated		12	<i>Times</i> , 03/17/1863
Italy 1865 (State-Domain)	Type II Hypothecation	Real estate	11	<i>Times</i> , 01/17/1865
Italy 1868 Tobacco	Type II Hypothecation	Tobacco Monopoly	8	<i>The London Standard</i> , 10/06/1868; <i>The Globe</i> , 10/07/1868
Italy 1869 (Anglo-Italian)	Not Hypothecated		0	<i>Times</i> , 10/09/1869
Japan 1870 (Customs loan)	Type I Hypothecation	Custom, Railway	6	<i>Times</i> , 04/26/1870

Japan 1873	Type I Hypothecation	Other	3	<i>Times</i> , 01/14/1873
Liberia 1871	Type I Hypothecation	Custom	5	<i>Times</i> , 08/08/1871
Mexico 1864 (Anglo-French)	Type I Hypothecation		12	<i>Times</i> , 04/12/1864
Morocco 1862 (Imperial Moorish)	Type I Hypothecation	Custom	12	<i>The Morning Post</i> , 01/13/1862
Paraguay 1871 (Public Works)	Type I Hypothecation	Custom, Railway, Land	5	<i>Times</i> , 11/23/1871
Paraguay 1872 (Public Works)	Type I Hypothecation	Land	4	<i>The London Standard</i> , 06/01/1872
Peru 1853 4.5%	Type I Hypothecation	Monopoly	0	Fenn (1855)
Peru 1862	Type I Hypothecation	Monopoly	6	<i>Times</i> , 01/08/1862
Peru 1865 (Consolidates 5%)	Type I Hypothecation	Monopoly	8	<i>Times</i> , 02/23/1865
Peru 1870	Type I Hypothecation	Monopoly, Custom, Railway, Land	6	<i>Times</i> , 06/04/1870
Peru 1872	Type I Hypothecation	Monopoly, Custom, Railway	4	<i>Times</i> , 03/20/1872
Portugal 1862	Not Hypothecated		12	<i>Times</i> , 07/21/1862
Portugal 1867	Not Hypothecated		8	<i>Times</i> , 12/19/1867
Portugal 1869	Not Hypothecated		7	<i>Times</i> , 11/03/1869
Romania 1864 (Danubian)	Type I Hypothecation	Custom	12	<i>Times</i> , 11/28/1864
Romania 1867 (Danubian)	Type I Hypothecation	Land, Custom	8	<i>Times</i> , 02/20/1867
Russia 1850 4.5%	Not Hypothecated		12	<i>The Morning Chronicle</i> , 01/15/1850
Russia 1859 (Imperial Russian)	Not Hypothecated		12	Fenn (1869)
Russia 1860	Not Hypothecated		12	<i>Times</i> , 06/26/1860
Russia 1862	Not Hypothecated		12	<i>Times</i> , 04/29/1862; <i>The Morning Post</i> , 04/29/1862
Russia 1864 (Anglo-Dutch)	Not Hypothecated		12	<i>Times</i> , 04/19/1864
Russia 1866 (Anglo-Dutch)	Not Hypothecated		10	<i>Times</i> , 11/19/1866; <i>The London (Evening) Standard</i> , 11/20/1866
Russia 1869 (Government)	Not Hypothecated		6	<i>Times</i> , 04/13/1869
Russia 1870	Not Hypothecated		6	<i>Times</i> , 01/26/1870
Russia 1871	Not Hypothecated		5	<i>Times</i> , 03/09/1871
Russia 1872 (consolidated)	Not Hypothecated		4	<i>Times</i> , 03/20/1872
Russia 1873 (consolidated)	Not Hypothecated		3	<i>Times</i> , 11/28/1873
Russia 1875	Not Hypothecated		1	<i>Times</i> , 04/13/1875
San Domingo 1869	Type I Hypothecation	Monopoly, Custom	7	<i>Times</i> , 07/27/1869
Spain 1869 (Dollar)	Not Hypothecated		7	<i>Times</i> , 04/22/1869; <i>The London Standard</i> , 04/22/1869
Spain 1870 (Quicksilver Mortgage)	Type II Hypothecation	Quicksilver mines including equipment &c.	6	<i>Times</i> , 05/31/1870
Spain 1871 (Consolidated External debt)	Not Hypothecated		4	<i>The Morning Post</i> , 09/01/1871
Spain 1872 (Consolidated External debt)	Not Hypothecated		4	<i>Times</i> , 12/10/1872

Sweden 1852 (4% Mortgage Loan)	Type II Hypothecation	Landed estates	4	<i>The Evening Mail</i> , 10/04/1852; <i>The Shipping and Mercantile Gazette</i> , 10/05/1852; <i>The London Daily News</i> , 10/06/1852
Sweden 1864	Not Hypothecated		8	<i>Times</i> , 04/12/1864
Sweden 1868	Not Hypothecated		8	<i>Times</i> , 07/13/1868; <i>The London Standard</i> , 07/13/1868
Sweden 1875	Not Hypothecated		0	<i>Times</i> , 06/28/1875
Turkey 1854 (6%)	Type II Hypothecation	Portions of the Egyptian Tribute	12	Fenn (1855); <i>The London Daily News</i> , 08/12/1854 and 08/15/1854; <i>Times</i> , 08/16/1854; <i>The Morning Advertiser</i> , 08/17/1854
Turkey 1855 (4% Guaranteed)	Type II Hypothecation	Portion of the Egyptian Tribute; Custom duties of Syria and Smyrna	12	Ayres (1873); <i>The Evening Mail</i> , 08/13/1855; <i>The London Daily News</i> , 08/16/1855
Turkey 1858 I (Imperial 6%)	Type I Hypothecation	Custom, Tax	12	<i>The London Daily News</i> , 08/30/1858;
Turkey 1858 II (Imperial 6%)	Type I Hypothecation	Custom, Tax	12	<i>The London Daily News</i> , 10/06/1858
Turkey 1859 (Imperial 6%) (III 1858)	Type I Hypothecation	Custom, Tax	0	<i>The London Daily News</i> , 12/06/1859
Turkey 1862	Type I Hypothecation	Monopoly, Tax	12	<i>The Morning Post</i> , 03/25/1862; <i>Times</i> , 03/25/1862
Turkey 1865	Type I Hypothecation	Tax, Other	10	<i>Times</i> , 05/01/1865
Turkey 1869	Type I Hypothecation	Tax	6	<i>The London Standard</i> , 03/04/1869
Turkey 1869 (Treasury bond)	Type I Hypothecation	Tax	0	<i>The London Standard</i> , 12/14/1869
Turkey 1871 (Egyptain Tribute Loan)	Type II Hypothecation	Portions of the Egyptian Tribute	5	<i>Times</i> , 09/05/1871
Turkey 1872 (A.B.C.)	Type I Hypothecation	Tax	3	<i>The Belfast News-Letter</i> , 06/06/1872
Turkey 1873	Type I Hypothecation	Monopoly, Tax	2	<i>Times</i> , 10/8/1873
Turkey 1874 (General debt)	Not Hypothecated		1	<i>Times</i> , 09/16/1874
Uruguay 1864 (Montevideo - European loan)	Type I Hypothecation	Custom	7	<i>Times</i> , 12/12/1864
Uruguay 1871	Type I Hypothecation	Custom	5	<i>Times</i> , 10/21/1871
Venezuela 1862	Type I Hypothecation	Custom	12	<i>The Morning Post</i> , 08/01/1862
Venezuela 1864	Type I Hypothecation	Custom	12	<i>Times</i> , 04/07/1864

*Notes:* In the third column (Pledge) we document all items mentioned in each hypothecated bond's collateral clauses. For Type I Hypothecations, we report the source of revenue classification we also employ in Figure A.2.2, while we follow Table 3's classification for Type IIs' pledged items. In the fourth column (Yield Obs) we record the number of valorized yield entries per bond, from the yield panel we use to estimate Equation (2). The reference for the prospectus in the media or in the investors' handbook is given to the reader for ease of reference, as it can be easily retrieved from conventional newspaper databases. In practice, additional documentation was typically secured.

*Sources:* Authors, from sources marked in table.

## APPENDIX C: TYPE II HYPOTHECATIONS, A STUDY

In this Appendix, we provide discussion of each Type II hypothecation. Type II bonds distinguished themselves from the rest in that they made some effort at creating a template enabling some form of repossession of the collateral. Accordingly, the following discussions identifies in what respect it may be argued that such a template was created and emphasizes the mechanism, which could a priori secure that effect, leading us to classify the instrument as Type II. Though Table 5 in the text shows that on *average* Type II hypothecations could be a powerful instrument, we do not report *individual* performance but we offer comments on some bonds which appeared to have almost completely eliminated default risk through the instrument. An example is the Ottoman bond of 1855, studied also in AI (2012) dealing with. We go by alphabetical order.

## C.1: BOLIVIAN LOAN, 6 %, 1872

The Bolivian loan of 1872 is one of the most complex piece of legal-financial engineering in our population of sovereign debt contracts. The project that gave rise to the loan was an attempt to throw Bolivia open to trade via the Amazon River with the help of the construction of a waterway through tributaries of the Amazon and a railway line. A group of promoters acting as agents for the government of Bolivia received navigation and construction rights and launched three companies: A navigation company (the National Bolivian Navigation Company or NBNC), a railway company (the Madeira and Mamoré Railway Company) and a construction company (Public Works Construction Company) to build the road (Flandreau 2016). The plan foresaw the division of custom revenues accruing from the trade this would create between the government (one-fourth) and the navigation company (three-fourth). Both revenue streams were pledged as special security to the bondholders. In particular, should the government fail to service the loan, the three-fourth of the custom revenues collected by the company would be paid over to the bondholders.

A unique feature of the arrangement was the setting up of two detailed deeds of trust (Anonymous 1873). The first granted bondholders, through the agency of trustees, the right to inspect the books of the navigation company and, in case profits enabling to cover the creditors were being withheld, the trustees had the right to enter “at once as receivers into possession of all property and assets of the company.” In clear, in case of sovereign default, the bondholders would become the owners of the company. However, this had to involve the cooperation of local authorities. The second trust, was the more powerful element: It provided that the trustees to “retain out of the proceeds of the loan [...] a sum equal to the contract price of the railway, and temporarily invest and apply the same from time to time in payment for the works as they proceeded.”<sup>4</sup>

Since most of the money remained within the control of the bondholders, the security was material. Some observers rationalized that given the limited credit Bolivia enjoyed and the fairly reasonable price of the issue, the trust was the reason for the success met by the Bolivian loan at launch: According to the opinion of the Lord Chancellor Hugh Cairns: “I think it is obvious that if the money had not been placed in the hands of the trustees the loan would not have been obtained.”<sup>5</sup> In the end, the project itself collapsed on the back of flawed calculations. The Bolivian government suspended the payment of the interest on the loan, and since the road had not been completed, no revenues could be paid over to creditors. There was no receivership created but the trustees were able to safeguard the money. They suspended the construction in order to avoid the dilapidation of the trust. As the

<sup>4</sup> Prospectus, *The Times*, January 20, 1872.

<sup>5</sup> See Flandreau (2016, p.114 and 359).

funds at the Bank of England had been wisely invested in then booming US securities, the deposit kept increasing in value. Eventually, British courts declared themselves competent and eventually ordered the release of the funds to the bondholders (Flandreau, 2016). While this was rather messy, the epilogue does confirm that through the help of a deed of trust, assets could be detached from a sovereign's reach and plausible collateralization could be achieved.

C.2: COMMISSION OF THE DANUBE LOAN, 4% 1869, INTERNATIONAL LAW AND INTERNATIONAL RECEIVERSHIPS

This loan gave as collateral the “tolls and duties” levied at the Sulina mouth of the Danube on the Black Sea by the European Commission of the Danube. The Commission was an international administrative entity established by the Treaty of Paris that settled the Crimean War in 1856. Austria, France, Prussia, Russia, Sardinia, Turkey and the United Kingdom supervised the supra-national entity, vested with the authority to manage and improve the circumstances of international navigation on the Danube river. In November 1865, a public act signed by Austria, France, Italy, Prussia, Russia, Turkey and the United Kingdom placed the Commission, its officers, works and establishments “under the protection of international law.” This meant that the stakeholders would abide by the *droit des gens* to settle differences. In 1869, the Commission raised £135,000 on the London stock exchange offering as security to creditors the tolls on the Danube river and “full powers of receivership in case of default.”<sup>6</sup>

To understand how this would play out, and why we are dealing here with a plausibly enforceable lien, the important element is that the loan was guaranteed by France, Italy, the North German Confederation (Prussia), Turkey and the United Kingdom. In the event of a default, these countries, which had a majority stake in the Commission, would be called in to make up for the difference and simultaneously they would take care of implementing the receivership system. In other words, a group of sovereigns would manage the collateral, acting collectively and abiding in their intercourse with one another by the rules of international law. The issue spread stood at 75 basis points above British Consols. Since trading of this instrument was limited, the premium likely reflected illiquidity. This spread is among the lowest extant for a Type II hypothecation.

C.3: EGYPT, THE KHEDIVE'S PRIVATE LOANS OF 1866, 1867, 1870

The Egyptian loans of 1866 “Loan of the Viceroy of Egypt” (7%), 1867 “Egyptian 9% Vice Roy loan”, and 1870 “Mortgage loan of His Highness the Khedive of Egypt (7%)” pledged, not the revenues of Egypt but various forms of private property belonging to the ruler of Egypt. This created grounds, in theory at least, for repossession. In fact, albeit they are listed under “Egypt” in contemporary sources, the official price list of the London stock exchange was careful to list them under “miscellaneous” rather than “Foreign stocks.”<sup>7</sup> An open question was what would be the treatment of such claims in case of default. As it turned out, the relevant jurisdiction was Mixed Courts, whose jurisdiction encompassed matters that had to do with the “Khedive's land and that of his family, so long as no question of acts of sovereignty arose” Hoyle (1986, 1987). Note that at the time the Khedive loans, the Mixed Courts were only a vague project and they did not come into being

<sup>6</sup> Prospectus for the European Commission of the Danube, 4% loan, *London Standard*, March 8, 1869.

<sup>7</sup> For instance, the *Investor's Monthly Manual* (December 30, 1871, p. 398) lists the Egyptian loans of 1866 and 1870 under “Egypt”, but marked them as “secured on private domains”. But the journal did not identify the loan of 1867 in the similar way, perhaps because as we explain below the deed of hypothecation was not in the hands of the bondholders but in the hands of the Egyptian government.

until 1875. The important point is that a formal repossession mechanism was at least contemplated.

- *“Daira” Loans of 1866 and 1870*

The loan of 1866 (also known as the “Viceroy’s Private Domains Mortgage Loan”) was, according to the terms of the prospectus, guaranteed by the “immense private property of his Highness Ismael Pasha, Viceroy of Egypt”. The prospectus especially pledged a “mortgage of 364,930 *feddans* (about 375,000 acres) of cultivated lands, hypothecated in due legal form to that effect by His Highness.” A deed of hypothecation (or “*Kachf*”) was deposited at the Bank of England, enabling the creditors to secure it in case of non-performance. In effect, the grantor of the security was the Daira, the administrator of the private domains of the Khedive. The prospectus recited the merit of the security vested in the reputation of the Daira, stating that the Daira’s “acceptances or obligations” have always been “taken up by capitalists in preference to all other negotiable securities in Egypt.”<sup>8</sup>

The Khedive loan of 1870 (also known as the “Daira Sanieh Loan”) was similar in legal/financial design to the 7% 1866 Viceroy Loan. It likewise involved the Daira and a deed of hypothecation was deposited at the Bank of England. Rather than being for land managed by the Daira as in 1866, the pledge was both for “the whole of the free revenues” of the Daira and for 150,000 *feddans* of land to be devoted to the cultivation of cane sugar (an estimate of the expected value of the total production of sugar was provided).<sup>9</sup> Because of the involvement of a private company, the Daira loans evoke parallels with the company mortgages put together in the Italian and Spanish government loans discussed below.

- *Mortgage Loan of His Highness the Khedive of Egypt, 9% 1867*

Also known as Mustapha Pasha’s Domains Loan of 1867, it had served to purchase land for Royal Prince Mustapha Pasha (Landes, 1958, p.106). The loan, signed by the Khedive, gave as security the Khedive’s personal “free revenues” plus a guarantee by the Egyptian government. In this case, unlike with the two loans previously discussed, there was no deed of hypothecation for the creditors. Instead, the Egyptian government kept the title deeds of the property purchased for Royal Prince Mustapha Pasha as security, so that the Egyptian government would seize the collateral and take up the service in case of non-performance by the Khedive.

#### C.4: ITALIAN GOVERNMENT, LOANS THROUGH PRIVATE COMPANIES

Unlike other Italian or Sardinian loans (the predecessor state of unified Italy), such as the Maremmana railway 5% bond of 1862, which had a Type I hypothecations, two Italian loans – the State Domain Loan of 1865 and the Italian Tobacco Loan of 1870 – were found to have created a genuine repossession mechanism. In both cases, they achieved this goal by creating a private entity, owned by a combination of domestic and foreign investors and responsible for servicing the loan. The chosen route was an Act of Parliament, which formally recognized the repossession right. For that reason, though they were understood to be government loans, the two loans ended up like under the “miscellaneous” section of the London stock exchange official price list rather than under “foreign funds”, just like the the Khedive loans, because technically, the actual borrower was private.

- *State Domain Loan, 5%, 1865*

The goal of the Italian minister of finances Q. Sella in crafting with his international financial advisors the State Domain loan had been to externalize to a

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<sup>8</sup> *The Times*, March 21, 1866. The Daira ran the Khedive’s own possession and especially his cotton plantations (see Landes, 1958).

<sup>9</sup> *Times*, April 26, 1870.

private company – the Italian Land Company – the liquidation of state domains to obtain cash for the Government. The result was the creation of a financial entity that would supervise the sale of land. That entity would be owned by banks and other financial intermediaries who advanced money to the government against the security of a mortgage on state lands held by the Italian Land Company.

As said the arrangement, which led to the adoption of a convention between the Italian government and the Italian Land Company, was ratified by the Parliament.<sup>10</sup> The agreement placed the Company under the supervision of a royal commissioner and tasked it with issuing the loan (Art. 15). The proceeds of the loan would enable the company to make an advance of a countervailing value to the Italian state (Art. 7-11). Italian treasury bills registered under the name of the Company secured the bonds, and a mortgage on the lands to be sold secured the bills in turn. The convention stipulated that a law would substitute for the inscription of the security in the mortgage registries (Art. 12). As the liquidation of the state lands proceeded, the outstanding debt was progressively reimbursed and the mortgages cancelled. Because of this peculiar arrangement, and although in the last analysis this was evidently a government loan, it was not listed under foreign stocks in the official stock exchange price list. Just like the Khedive Loans, this loan was listed under “miscellaneous”.<sup>11</sup>

- *Italian Tobacco Loan, 6%, 1870*

The Tobacco Loan is reminiscent in several respects of the State Domains loan. On July 26, 1868 a convention was signed between the Italian government, the *Regia Cointeressata* (a partnership of Italian and foreign capitalists who acquired the right to farm the country’s state monopoly over tobacco) and, finally, representatives of Stern brothers, the contractors of the loan.<sup>12</sup> The convention stipulated that the capitalists were pledging to provide the Italian treasury with 180 millions of gold lire in effective capital. Article 5 of the convention stipulated that a share of the company’s profits would be set aside annually to fund interest and amortization charges of a loan. Article 23 described instead the money transfer process.<sup>13</sup>

The convention did not detail what would happen in the event of a default, but the legal material shows the logic. It trickled down from the fact that the *Regia*, rather than the Italian Treasury, was responsible vis-à-vis creditors. The profits of the *Regia* earmarked to pay creditors were sent each year to the *Cassa dei Depositi e Prestiti* (an institutional investor with custodian responsibilities) or to the *Banca d’Italia* (the Bank of Italy), which assumed trusteeship functions. These institutions acted as assignees of the revenues of the *Regia* for the benefit of creditors. The Treasury was then to take care of paying the bondholders from these funds. If the money was diverted, then creditors would be able to secure a freeze of the funds in the future. As a result, the arrangement created a repossession system.

#### C.5: OTTOMAN LOANS OF 1854, 1855 AND 1871, INTERNATIONAL TREATIES

Three Ottoman Loans pledged separate portions of the so-called “Egyptian Tribute” an annual payment to the Turks by Egypt, formerly a possession of the Ottoman Empire, which had to pay for its freedom. The Tribute arose from a series of international treaties backed by foreign powers, giving them some authority to monitor the use of the money by Egypt. In one of them (the 4% Ottoman Loan of 1855), the resulting mechanism came closest to giving creditors formal repossession

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<sup>10</sup> Anonymous (1865).

<sup>11</sup> But the *Investor’s Monthly Manual*, puts it under Italian government debts.

<sup>12</sup> The leader of the syndicate was the *Credito Mobiliare Italiano*.

<sup>13</sup> Ceci (2015) for details on the history of the tobacco monopoly. The Convention of July 25, 1868 and the text of the law that approved it are in Regno d’Italia (1868, p. 445 ff.).

rights. This was because it empowered the British and French governments, who guaranteed the loan, to take over the collateral.

- *Ottoman Egyptian Tribute Loan, 6% 1854*

The Turkish loan of 1854, issued on the eve of the Crimean War, was backed by an assignment from the Egyptian Tribute. Multiple statements in the media, both at the time and afterwards emphasized the unique character of the hypothecation.<sup>14</sup> Such statements stressed two aspects. First, observers argued that there was an instruction from the Sultan to the Khedive to direct a portion of the money from the Tribute to the bondholders via the Bank of England. Second, the *firman* (Ottoman decree) providing for the rights of creditors was deposited at the Bank of England.<sup>15</sup>

Our reading is that, per se, this did not achieve anything beyond what existed under Type I hypothecation. Could the borrower, at will, redirect the funds before they would reach the reliable agent (such as the Bank of England)? The answer is that of course she could. Rose and Staniforth (1876, p.12) report that at one point in 1876 the Turkish government was “determined upon issuing an order to the Khedive to remit the Tribute direct to Constantinople” (as opposed to the Bank of England). This shows that issuing a new decree was always possible. Similarly, depositing of the *firman* for the loan in the Bank of England has been described by Anderson (1964, p.50) as ensuring that it would be safe “from all risks of emendation” (a view shared by Du Velay, 1903, p. 140). However, of course, a new decree could be issued.<sup>16</sup>

In our understanding, what made (or might have made) the hypothecation unusual was its status under international law. This had to do not with the hypothecation mechanism per se, which was generic, but with the *nature* of the asset hypothecated. The Egyptian Tribute was the product of an international treaty, of which Britain had been part, giving partial authority to the British government. Such obligation resulted from the London Convention of 15 July 1840 and of the Treaty of London of 1840, followed by the *firman* of February 1841 that granted the Khedive hereditary government of Egypt in return for the payment of a tribute.<sup>17</sup>

Unlike the enforcement of private claims, the enforcement of intergovernmental claims was as we explained a rule by which the British state did abide. Here, we speculate, the reasoning of supporters of the view that the pledging of the Egyptian Tribute created special rights may have been that the British government had grounds to bring pressure to bear on the Khedive of Egypt. The prospectus nodded at this by emphasizing that the loan had been “negotiated with the knowledge of the English Government; that her Majesty’s Government is satisfied that the loan and the appropriation of the above-mentioned 30 million piasters, £282,000 per annum, of the Egyptian tribute are duly authorized by his Majesty the Sultan.”<sup>18</sup> The media and subsequent discussion by bondholders

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<sup>14</sup> For examples of strongly partisan views on the responsibility of the British government, see Office of the Egyptian Tribute’s Bondholders League (1876) and Shee (1876).

<sup>15</sup> Fenn (1855, p.265) and Du Velay (1903, p.140).

<sup>16</sup> Modern authors who have been impressed by such views include Dyson (2014).

<sup>17</sup> The *firman* stipulating the terms of the tribute was itself dated May 1841. For the text of the decree, see Shee (1874, p.548).

<sup>18</sup> Fenn (1855, p. 266). The initial amount of the loan had been £5,000,000, the interest being 6% and the amortization 1%, the annual sum that was initially necessary to meet annual charges was 350,000£, and the security pledged, or 282,000£ produced an 80% coverage ratio. In the end, as only £3 million were raised and the annual charge came to 210,000£. This left a margin of about £75,000 that would be pledged for Ottoman “Egyptian Tribute” Loan, 4% 1855.



amplified the meaning of the endorsement.<sup>19</sup> We should remain circumspect. Still, some form of imperial enforcement was conceivable.

Our examination of the evidence suggests that markets favored the Egyptian Tribute loan of 1854 compared to other Ottoman loans. For instance, it traded at an average 20% premium compared to another similar 6% Turkish loan, made in 1858, a Type I hypothecation, secured by custom duties and the “*octroi*” (internal custom) in Constantinople.<sup>20</sup> Another piece of evidence is that when the Ottoman default took place in the 1870s, it was stated that all the creditors of Turkey were to be treated equally “the only exceptions being in the case of the Loans of 1854, which, owing to the political and legal questions involved, it was desirable to deal with exceptionally.”<sup>21</sup> A similar claim was made for the loan of 1871 discussed below. As a result, Rose and Staniforth (1876) noted that “His Highness [the Grand Vizier] understands the exceptional position of the Loans of 1854 and 1871, guaranteed by the Tribute of Egypt, and the legal and moral considerations which gave to the holders in those Loans rights which they would not hesitate to enforce.”<sup>22</sup> For its part, the British government remained willing to remind to the Porte the special status of the Tribute Loans at large, thus vindicating expectations.<sup>23</sup> This gives a semblance of plausibility to repossession, unlike what happened under Type I hypothecations.

- *Ottoman Guaranteed Loan, 4% 1855*

The background of the loan was also the Crimean war and more specifically, the June 27, 1855 convention between Britain, France and Turkey providing for the joint guarantee by France and Britain of a loan of up to 5,000,000£ to fight Russia. According to Art. 3, the two guarantors were secured by a) the available balance of the Egyptian Tribute (the “Egyptian Tribute” Loan of 1854 not having been fully subscribed, there was a balance of 75,000£ available as security), as well as b) the custom duties of Syria and Smyrna.<sup>24</sup> These securities were designated in the Ottoman “Egyptian Tribute” Loan issued in August 1855 (Ayres, 1873, p.371). Because of the international guarantee, Britain had a right over these instruments.

Against this backdrop, the spread-at-issue of this loan, compared to consols, was very low (60 basis points). The high price which the loan commanded in capital markets has been mentioned by previous writers who generally emphasize the guarantee alone (Al, 2012; Esteves and Tunçer, 2016). Ayres (1873) describes the stock as affording a “secure investment in the market” because of the joint guarantee. Nevertheless, from a legal point of view, an important aspect was the presence of an international treaty because it interested Britain in the outcome and thus involved it in receivership activities. Combined with the guarantee, it turned

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<sup>19</sup> A little before the loan was launched, the *The Times* claimed that the “English government will likewise give a formal intimation that the claims of the subscribers will always be regarded as entitled particularly to their support.” *The Times*, August 12, 1854; The Chronicle read the prospectus as meaning that the English government gave its “assurance that the hypothecation of the Egyptian tribute [ . . . ] is properly secured to the subscribers of the loan.” *Morning Chronicle*, August 17, 1854.

<sup>20</sup> The loan of 1858 had a shorter maturity, which should have favored it, yet our evidence suggests that the Egyptian Tribute traded at a premium of about 20% on average. The inference we make is that the security raised its value. Data available from authors.

<sup>21</sup> Rose and Staniforth (1876, p.21).

<sup>22</sup> Rose and Staniforth (1876, p.11)

<sup>23</sup> See response to the Chancellor of the Exchequer, Sir Stafford Henry Northcote, to a parliamentary question: “As I mentioned yesterday, the Governments of England and France have made a joint representation to the Government of the Porte on the subject of the Tribute Loans generally.” House of Commons, Hansard, “Turkey—Loans of 1854 And 1855—Explanation—Question”, March 9 1877 Volume 232, Columns 1652.

<sup>24</sup> Shee (1874, p.529). For details, see Ayres (1873).

Britain into the assignee of the security in case of default. According to lawyer Lord St Leonard (later a Lord Chancellor): “By the Convention [of June 1855] we became, with France, assignees of [the Egyptian] Tribute [and of the Customs of Smyrna]” pledged in the loan”.<sup>25</sup>

Contemporary debates both in the Commons and House of Lords underscore existing understandings of, and concerns vis-à-vis, the legal and political implications of the lien created. In the same speech, Lord St Leonard emphasized that the pledges in the loan of 1855 ought to be considered from the vantage point of the political consequences in case of non-performance. On the one hand, the British government was eager not to take any financial responsibility upon itself, which required the pledges be maintained, because, as Lord Clarendon put it “the obligations [...] might possibly be evaded.”<sup>26</sup> On the other hand concerns were voiced that France would use the pretext of a lapse of payment by the Turks to invade Egypt or seize Syria, which further demonstrates that the existence of international treaties was understood as enabling repossession of the collateral.<sup>27</sup>

In conclusion, if the bondholders felt secure, it was because the British and French government were themselves secured through a right to repossess the assets pledged. Formally, the hypothecation created a valid trust under international law, whose beneficiaries were the bondholders and whose assignees and trustees were the guarantor government(s).

- *Ottoman Egyptian Tribute Loan, 1871*

The Ottoman 6% loan of 1871, initially for £5,700,000, was the last loan issued with the security of the Tribute of Egypt. On top of the general revenues of the Turkish Empire, it pledged “the portion of the Tribute now payable to the Porte [Ottoman Empire] by the Khedive of Egypt not applicable” to the loans of 1854 and 1855 (*Times*, September 5, 1871).<sup>28</sup> Like the two other Khedive Loans, the Tribute Loan of 1871 offered a guarantee that had a peculiar status in international law. Unlike the loan of 1854 and 1855, this loan did not include any mention of the role of the British government, opening questions as to its relative standing (see Office of the Egyptian Tribute’s Bondholders League, 1876, p.11 ff).<sup>29</sup>

Summarizing, we have, a) The Loan of 1854 with British “recommendation” and the Egyptian Tribute as security; b) The Loan of 1855, with international guarantee along with Tribute and custom receivership enforceable by international action; c) The Loan of 1871, with only the Egyptian Tribute. As inspection of the parliamentary debates after the Turkish default suggests, there was a hierarchy in the British government mind, between the Loan of 1855 on the one hand, and the loans of 1854 and 1871 on the other hand.

#### C.6: SWEDISH 4% MORTGAGE LOAN, 1852

We rank this loan (also loan as the “Provincial Loan”) under Type II because the documentation speaks of the loan being backed by a registered

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<sup>25</sup> Hansard, House of Lords, August 6, 1855, Column 1857.

<sup>26</sup> Hansard, House of Lords, August 6, 1855, Column 1865.

<sup>27</sup> See Anderson (1964).

<sup>28</sup> The mechanism was the same as the one used before, that is, the interest and sinking fund was to be channeled through the Bank of England and from there paid to the bondholders via the intermediaries for the loan. The reason why there was a still room for using the Tribute was that it had been raised in 1866 to 150,000 purses or £705,000, after the Sultan “sold” to the Khedive of Egypt various privileges. After deducting the amount that was sent out for the service and amortization of the two previous loans, £422,000 remained as available balance, of which £399,000 were to be directed for the annuity of the new loan (£5,700,000 times 6 percent interest and 1 percent accumulative sinking fund = £399,000).

<sup>29</sup> Following the Ottoman default, efforts were made to secure the official support for this loan, through a parliamentary bill (see *Truth*, January 18, 1877).

mortgage and designates the district courts as the relevant legal venue. We were not able to secure detailed information on the legal significance of such mortgages before Swedish law and so the characterization remains tentative. While this loan is treated as a Type II in the baseline regression, we admit the possibility that it was a Type I and conduct robustness test below, estimating the model under the alternative sorting assumption.

#### C.7: SPANISH QUICKSILVER MORTGAGE LOAN, 5% 1870

This famous loan gave as collateral the quicksilver mines of Almadén, which belonged to the Spanish government.<sup>30</sup> It belongs to the Type II genus, because in the event of a Spanish default, Rothschilds, who acted as agents and trustees for the bondholders would have become receivers of the mines. As explained by Martín (1980) on the basis of the contract between the House of Rothschild and the Spanish government, which the prospectus only summarized, the loan and the security were to be “legally registered.”<sup>31</sup> This harnessed the Spanish Law of 1861, which enabled to mortgage a designated physical property to secure lenders.<sup>32</sup> The security was inscribed in a publicly accessible national registry, preventing re-hypothecation of the security.<sup>33</sup> In case of non-performance, creditors owned the right, upheld by Spanish courts, to seize the asset. So, had the Spanish government missed a payment on the quicksilver loan, the House of Rothschild would have been able (in principle at least) to seize the mines of Almadén along with all the “machinery, buildings, works belonging to the Spanish State” which had been hypothecated too.

If the Spanish government had disputed the appropriation, it would have had to battle Rothschilds in Spanish courts. Possibly, the government would have been able to weigh on judges. On the other hand, Rothschilds, with many investments in the country and connections in the political and business elites, were themselves formidable adversaries (see López-Morell, 2016, p.179). In other words, the bankers certified the arrangement, which they could do either because they knew that the legal process was robust enough to protect them or because they were confident in their ability to litigate successfully. This provides an interpretation for why the Quicksilver loan of 1870 was spared when other Spanish loans were defaulted upon in 1872. This was also anticipated because the Quicksilver loan traded above other obligations. To sum up, while significant uncertainties must have existed, the quicksilver collateralization did create a genuine repossession mechanism. Comparing the yield on “secured” Spanish debt and on “risk-free” British Consols, we see a spread is 330 basis points (6.5% when British Consols yielded about 3.2%). This is large but on the other hand, an even larger spread is observed if we now look at unsecured Spanish debt. For instance, the perpetual 3% 1869, yielded 9.70% at the time of the Quicksilver issue, a 640 basis points premium over Consols.<sup>34</sup>

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<sup>30</sup> We are extremely grateful to Alberto Gamboa for help clarifying this entry. Compare to Chabot and Santarosa (2017, p.32) saying that this loan “established the legal machinery to assure the mine’s output was under the control of the bondholders.”

<sup>31</sup> The text of the contract with Rothschilds (Art. 1) began with declaring that the loan would be accounted for in the “Property Registry.”

<sup>32</sup> For the text and a contemporary discussion of the Spanish law of 1861, see Pantoja and Lloret (1861).

<sup>33</sup> Indeed, the prospectus indicated that the loan was “secured by a mortgage deed legally registered at Madrid and Almadén; all the machinery, buildings, works, belonging to the State, forming part of the stated property, being hypothecated as well as the mines” (Quicksilver loan prospectus, *The Times*, May 31, 1870).

<sup>34</sup> On the capacity of such legal arrangements to protect against government predatory behavior, see Peña-Mir (2019).

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