VI. Online Appendix

This appendix contains additional estimates and figures that are mentioned and described in our paper but were not reported there to preserve space. Specifically, the appendix includes:

Table A1 presents descriptive statistics comparing the sample of firms in the intersection of Amadeus and DealScan to the population of Amadeus firms in the categories "Large" and "Very Large" for our dependent and independent variables.

Table A2 presents results of a comparison of the bank dependence (measured as syndicated loan amount/total debt) for firms with low and high *GIIPS Bank Dependence*.

Table A3 presents results from firm-level regressions for different alternative measures of dependence on affected banks. Panel A considers the *Risk Weighted Indirect Sov. Bondholdings* of firms, defined as the amount of domestic sovereign bondholdings multiplied with the sovereign CDS spread (taken from EBA stress test data) that a firm holds (indirectly) through the lead banks in a firm's syndicate. Panel B considers the fraction of a firms total debt that is issued by GIIPS lead arrangers in the form of syndicated loans. Panel C considers the average GIIPS Bank Dependence (measured over the period 2005-2009) for each firm.

Table A4 presents a placebo test where we move the crisis period to the years 2006-2008.

Table A5 presents results from firm-level regressions for GIIPS firms with a high (Panel A) and low (Panel B) fraction of revenue generated by non-GIIPS subsidiaries.

Table A6 presents bank-level regressions where we use a bank's GIIPS sovereign debt holdings to explain the change in its CDS spread over the crisis period.

Table A7 presents bank-level regression results where we use our various proxies for risk-shifting and moral suasion to explain the change in a bank's domestic sovereign debt holdings over the 2009-2011 period.

Table A8 presents descriptive statistics from the pre-crisis period for banks that are active in the syndicated loan market and all other banks incorporated in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries).

Table A9 presents a breakdown of the number of firms and lead arranger banks by country.

Table A10 presents descriptive statistics of loan characteristics for the syndicated loans in the intersection of Amadeus and DealScan issued to firms in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries).

Figure A1 shows the fraction of syndicated loans relative to the total amount of loans issued to non-financial corporations in a given country, measured as the average fraction for the 2005–2009 period.

Figure A2 shows the evolution (for the entire firm sample) of the firms' net debt, interest coverage ratio, total outstanding credit lines as a fraction of their credit lines plus cash holdings, and undrawn credit lines as a fraction of their undrawn credit lines plus cash holdings.

Figure A3 shows the evolution of employment growth rates, capital expenditures as a fraction of tangible assets, and sales growth rates for firms in Greece, Italy, Ireland, Portugal, or Spain that generate an above median fraction of their revenue in subsidiaries not located in GIIPS countries.

Figure A4 shows the distribution of *GIIPS Bank Dependence* for various subsamples.

Figure A5 provides a geographical overview of business activities conducted by the German catering firm "Die Menu Manufaktur Hofmann", a firm located in Southern Germany that delivers food to the cafeterias of hospitals, corporations, etc. which inherited its relationship to Unicredit when Unicredit acquired the Bavarian based HVB in 2005.

Table A1 Descriptive Statistics - DealScan Sample vs. very large Amadeus

Panel A: Dependent Variables					**Panel B: Explanatory Variables**					
		Emp. Growth	CAPX	Sales Growth	Total Assets (mn)	Tangibility	Int. Cov.	Net Worth	EBITDA/Assets	Leverage
	Mean	0.052	0.193	0.055	3780	0.576	3.06	0.224	0.112	0.610
DealScan Sample	Median	0.024	0.12	0.052	592	0.587	2.55	0.220	0.106	0.610
	Std. Dev.	0.145	0.181	0.161	9610	0.238	3.09	0.170	0.070	0.174
	Mean	0.056	0.199	0.049	471	0.390	2.96	0.217	0.113	0.603
Very Large Amadeus	Median	0.017	0.14	0.044	114	0.343	3.01	0.198	0.099	0.621
	Std. Dev.	0.186	0.165	0.175	2100	0.269	4.23	0.228	0.08	0.246
Diff.		-0.004	-0.006	-0.006	3310	0.186	0.1	-0.007	-0.001	0.007
(t-Stat)		(0.58)	(-1.45)	-1.52)	(19.49)	(29.98)	(1.14)	(1.43)	(-0.16)	(0.91)
Normalized Diff.					0.336	0.53	0.02	-0.025	-0.003	0.016

Panel A of A1 presents descriptive statistics of dependent and Panel B of explanatory variables for the pre-crisis period split into firms that are in the intersection of Amadeus and DealScan and the remaining firms in the category of "Very Large" companies in Amadeus in the following countries: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries).

Table A2 - Loan Amount/Total Debt by Subsamples

		(1)	(2)	(3)	(4)	(5)
		Full Sample	listed Firms	non-listed Firms	non-GIIPS Firms w/o Subs	non-GIIPS Firms with Subs
	Mean	0.485	0.413	0.524	0.525	0.537
High GIIPS Bank Dep.	Median	0.392	0.316	0.460	0.429	0.557
	Std. Dev.	0.356	0.353	0.352	0.314	0.348
	Mean	0.518	0.432	0.560	0.579	0.444
Low GIIPS Bank Dep.	Median	0.419	0.314	0.487	0.579	0.327
	Std. Dev.	0.366	0.342	0.370	0.368	0.341
Diff. (t-Stat)		-0.033 (1.435)	-0.019 (- 0.511)	-0.036 (-1.248)	0.0542 (0.900)	0.093 (-1.825)
Normalized Diff.		-0.065	-0.039	-0.070	-0.112	0.191

Table A2 presents the results of a comparison of the bank dependence (measured as syndicated loan amount/total debt) for firms with low and high *GIIPS Bank Dependence* incorporated in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries). Column (1) provides the results for the entire sample. In Column (2), we summarize the bank dependence for listed firms whereas non-listed firms are summarized in Column (3). In Column (4), we restrict the analysis to non-GIIPS firms without GIIPS subsidiaries and in Column (5) we restrict the sample to non-GIIPS firms with GIIPS subsidiaries.

Table A3 - Alternative Measures

Panel A: Indirect Sovereign Debt Holdings						
	(1)	(2)	(3)	(4)	(5)	(6)
	Net Debt	ΔCash	Int. Cov.	Emp. Growth	CAPX	Sales Growth
Risk Weighted Indirect Sov. Bondholdings	-0.030**	0.001	-0.010*	-0.024**	-0.039**	-0.029*
	(-2.17)	(0.49)	(-1.78)	(-2.18)	(-2.20)	(-1.91)
Risk Weighted Indirect Sov. Bondholdings*Cash Flow		0.009**				
		(2.24)				
R^2	0.569	0.481	0.435	0.455	0.631	0.540
N	4101	3696	4432	3495	4014	3890

Panel B: GIIPS Bank Dependence as a Fraction of total Debt						
GIIPS Bank Dep./Total Debt in Crisis	-0.027***	0.000	-0.009*	-0.020**	-0.039***	-0.054***
	(-2.90)	(0.09)	(-1.69)	(-1.97)	(-2.60)	(-4.06)
Cash Flow*GIIPS Bank Dep./Total Debt in Crisis		0.003*				
		(1.90)				
R^2	0.541	0.442	0.395	0.421	0.586	0.495
N	4448	4003	4710	3781	4351	4214

Panel C: Average GIIPS Bank Dependence						
Avg. GIIPS Bank Dep. in Crisis	-0.031***	0.002	-0.011**	-0.030***	-0.054***	-0.041***
	(-2.78)	(0.57)	(-2.13)	(-2.63)	(-3.21)	(-3.04)
Cash Flow*Avg.GIIPS Bank Dep. in Crisis		0.004**				
		(2.11)				
R^2	0.541	0.441	0.394	0.422	0.586	0.492
N	4448	4003	4710	3781	4351	4214

Table A3 presents firm-level regression results. The dependent variables are net debt, the change in cash holdings, interest coverage ratio, employment growth, investments, and sales growth, respectively. The sample consists of all firms in the intersection of DealScan and Amadeus and located in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries). Panel A considers the *Risk Weighted Indirect Sov. Bondholdings* of firms, defined as the amount of domestic sovereign bondholdings multiplied with the sovereign CDS spread (taken from EBA stress test data) that a firm holds (indirectly) through the lead banks in a firm's syndicate. Panel B considers the fraction of a firms total debt that is issued by GIIPS lead arrangers in the form of syndicated loans. Panel C considers the average GIIPS Bank Dependence (measured over the period 2005-2009) for each firm. Firm control variables include the logarithm of total assets, leverage, net worth, tangibility, interest coverage ratio (not in Column (3)), and EBITDA/total assets and for the cash regression a firm's cash flow and capital expenditures. All firm-level control variables are lagged by one period. All variables are defined in Table I. All regressions include firm, industry-country-year, and foreign bank country-year fixed effects, as well as all firm-level controls. Standard errors are adjusted for heteroscedasticity and clustered at the firm-level. Significance levels: * ($p < 0.10$), ** ($p < 0.05$), *** ($p < 0.01$).

Table A4 - Placebo Test

	(1)	(2)	(3)	(4)	(5)	(6)
	Net Debt	ΔCash	Int. Cov.	Emp. Growth	CAPX	Sales Growth
GIIPS Bank Dep. in Placebo Crisis	0.008	0.001	0.028	0.012	0.010	-0.010
	(0.73)	(0.23)	(1.38)	(1.04)	(0.58)	(-0.79)
Cash Flow*GIIPS Bank Dep.		-0.004				
		(-1.46)				
Cash Flow		0.005				
		(1.15)				
Cash Flow*GIIPS Bank Dep. in Placebo Crisis		-0.001				
		(-0.34)				
R^2	0.544	0.441	0.394	0.421	0.585	0.493
N	4448	4003	4710	3781	4351	4214

Table A4 presents firm-level regression results. The dependent variables are net debt, the change in cash holdings, interest coverage ratio employment growth, investments, and sales growth, respectively. The sample consists of all firms in the intersection of DealScan and Amadeus and located in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries). *GIIPS Bank Dependence* is defined as fraction of total outstanding loans provided by GIIPS lead arrangers. *GIIPS Bank Dependence in Placebo Crisis* is defined as fraction of total outstanding loans provided by GIIPS lead arrangers incorporated in a placebo crisis country in year t, where the placebo crisis time period is defined as 2006-2008. Firm control variables include the logarithm of total assets, leverage, net worth, tangibility, interest coverage ratio (not in Column (3)), and EBITDA/total assets and for the cash regression a firm's cash flow and capital expenditures. All firm-level control variables are lagged by one period. All variables are defined in Table I. All regressions include firm, industry-country-year, and foreign bank country-year fixed effects, as well as all firm-level controls. Standard errors are adjusted for heteroscedasticity and clustered at the firm-level. Significance levels: * ($p < 0.10$), ** ($p < 0.05$), *** ($p < 0.01$).

Table A5 - Subsidiaries - GIIPS Firms

	(1)	(2)	(3)	(4)	(5)	(6)
	Net Debt	ΔCash	Int. Cov.	Emp. Growth	CAPX	Sales Growth
Panel A: GIIPS Firms with high Fraction of Revenue generated by non-GIIPS Subsidiaries						
GIIPS Bank Dep. in Crisis	-0.086**	-0.021	-0.026*	-0.168***	-0.156**	-0.140**
	(-2.07)	(-1.21)	(-1.93)	(-2.64)	(-2.05)	(-2.55)
Cash Flow*GIIPS Bank Dep. in Crisis		0.039**				
		(2.30)				
R^2	0.671	0.664	0.593	0.621	0.670	0.730
N	485	462	554	424	471	450
Panel B: GIIPS Firms with low Fraction of Revenue generated by non-GIIPS Subsidiaries						
GIIPS Bank Dep. in Crisis	-0.054**	0.010	0.026	-0.047	-0.098*	-0.046
	(-2.33)	(0.93)	(0.34)	(-1.38)	(-1.88)	(-0.91)
Cash Flow*GIIPS Bank Dep. in Crisis		0.020				
		(1.02)				
R^2	0.594	0.483	0.342	0.435	0.630	0.536
N	923	747	1097	779	913	858
Firm Controls	YES	YES	YES	YES	YES	YES
Firm Fixed Effects	YES	YES	YES	YES	YES	YES
Industry*Year Fixed Effects	YES	YES	YES	YES	YES	YES
Foreign Bank Country*Year Fixed Effects	YES	YES	YES	YES	YES	YES

Table A5 presents firm-level regression results. The dependent variables are net debt, the change in cash holdings, interest coverage ratio employment growth, investments, and sales growth, respectively. The sample consists of firms in the intersection of DealScan and Amadeus. Panel A and B include firms in GIIPS countries that have a high fraction (in the highest tercile of the distribution) and a low fraction of their revenues generated by non-GIIPS subsidiaries, respectively. *GIIPS Bank Dependence* is the fraction of total outstanding loans provided by GIIPS lead arrangers. *GIIPS Bank Dependence in Crisis* is the fraction of total outstanding loans provided by GIIPS lead arrangers that are incorporated in a crisis country in year t, where the crisis begins in Greece in 2009 and in 2010 in the other GIIPS countries. Firm control variables include the logarithm of total assets, leverage, net worth, tangibility, interest coverage ratio (not in Column (3)), and EBITDA/total assets and for the cash regression a firm's cash flow and capital expenditures. All firm-level control variables are lagged by one period. All variables are defined in Table I. All regressions include firm, industry-year, and foreign bank country-year fixed effects, as well as all firm-level controls. Standard errors are adjusted for heteroscedasticity and clustered at the firm-level. Significance levels: ($p < 0.10$), ($p < 0.05$), ** ($p < 0.01$).

Table A6 - Change in Bank CDS

	ΔCDS	Δlog CDS
GIIPS sov. Bondholdings	0.002***	0.112***
	(3.35)	(4.40)
log Total Assets	-0.003	0.014
	(-1.54)	(0.13)
R^2	0.457	0.408
N	25	25

Table A6 presents bank-level regression results. The dependent variable is the change in bank CDS or the log change in bank CDS over the crisis period. The sample consists of all banks in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries), that were included in the 2010 EBA stress tests and with available CDS data. GIIPS sov. Bondholdings is measured as the amount of GIIPS sovereign bondholdings divided by a bank's total assets. Standard errors are clustered at the bank-level. Significance levels: * ($p < 0.10$), ** ($p < 0.05$), *** ($p < 0.01$).

Table A7 - Change in Sovereign Holdings

Panel A: Leverage		
	ΔHoldings	ΔHoldings
High Leverage	-0.008 (-1.62)	-0.010 (-1.57)
High Leverage*GIIPS	0.020** (2.33)	0.027** (2.44)
GIIPS	0.005 (1.13)	
R^2	0.352	0.458
Panel B: Rating		
Low Rating	0.002 (0.25)	0.002 (0.27)
Low Rating*GIIPS	0.021** (2.18)	0.026** (2.29)
GIIPS	0.005 (1.28)	
R^2	0.512	0.559
Panel C: Government Intervention		
Gov. Intervention	-0.001 (-0.26)	-0.004 (-0.75)
Gov. Intervention*GIIPS	0.008 (1.11)	0.006 (0.75)
GIIPS	0.006 (1.31)	
R^2	0.238	0.422
Panel D: Government Ownership		
High Fraction Gov. Own.	0.000 (0.03)	0.001 (0.22)
High Fraction Gov. Own.*GIIPS	-0.004 (-0.40)	-0.003 (-0.22)
GIIPS	0.014*** (2.94)	
R^2	0.303	0.318
Panel E: Government Board Seats		
High Fraction Gov. Board	0.001 (0.16)	0.001 (0.23)
High Fraction Gov. Board*GIIPS	0.001 (0.15)	0.010 (1.18)
GIIPS	0.009** (2.10)	
R^2	0.197	0.458
N	32	32
Country Fixed Effects	NO	YES

Table A7 presents bank-level regression results. The dependent variable is the change in a bank's domestic sovereign debt holdings from 2009-2011. The sample consists of all banks in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries), that were included in all EBA stress tests/capital exercises between 2009 and 2011. *High Leverage* is an indicator variable equal to one if a bank had an above median leverage in 2009, and zero otherwise. *Low Rating* is an indicator variable equal to one if a bank had a median rating of A+ or lower in 2009, and zero otherwise. *Government intervention* is an indicator variable equal to one if a bank received government support during the 2008-09 financial crisis, and zero otherwise. *High Fraction Gov. Ownership* is an indicator variable equal to one if a bank had an above median fraction of shares by the respective government in 2009, and zero otherwise. *High Fraction Gov. Board Seats* is an indicator variable equal to one if a bank has an above median fraction of government affiliated directors, and zero otherwise. GIIPS is an indicator variable equal to one if a bank is incorporated in one of the GIIPS countries. Significance levels: * ($p < 0.10$), ** ($p < 0.05$), *** ($p < 0.01$).

Table A8 - Comparison DealScan other Banks

		Total Assets (mn)	Impaired Loans Equity	Tier1 Capital Ratio	Equity/Total Assets
	Mean	157242	0.236	0.080	0.061
DealScan Banks	Median	46427	0.182	0.075	0.056
	Std. Dev.	219245	0.203	0.020	0.031
	Mean	56110	0.249	0.097	0.068
Other Banks	Median	12959	0.162	0.087	0.059
	Std. Dev.	133031	0.203	0.036	0.036
Diff. (*t*-Stat)		101131 (5.21)	- 0.012 (- 0.39)	-0.016 (-4.01)	-0.006 (-1.59)
Normalized Diff.		0.394	-0.036	-0.402	-0.136

Table A8 presents descriptive statistics from the pre-crisis period for banks that are active in the syndicated loan market and all other banks incorporated in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries). All data are from SNL Financial.

Table A9 - Number of Borrowers and Banks per Country

	Borrowers	Lead Banks
Germany	150	13
Spain	165	26
France	180	7
U.K.	342	8
Greece	12	1
Ireland	14	2
Italy	171	8
Portugal	22	4

Table A9 presents a breakdown of the number of firms and lead arranger banks by country.

Table A10 - Loan Characteristics

	Loan Amount (mn)	Loan Amount/ Total Debt	Maturity (days)	Interest Rate Spread (basis points above LIBOR)
Mean	4810	0.507	2582	209
Median	1250	0.407	2556	200
Std. Dev.	13900	0.363	1592	134

Table A10 presents descriptive statistics of loan characteristics for the syndicated loans in the intersection of Amadeus and DealScan issued to firms in: Greece, Italy, Ireland, Portugal, Spain (GIIPS countries) or Germany, France, U.K. (non-GIIPS countries). Loan Amount measures the loan amount in million Euro. Loan Amount/Total Debt measures the fraction of a syndicated loan relative to the overall debt outstanding for a firm. Maturity describes the maturity of a loan (in days) and the interest rate spread is taken from allinspreaddrawn reported in DealScan.

Figure A1. Fraction of syndicated Loans to total Loans in Europe

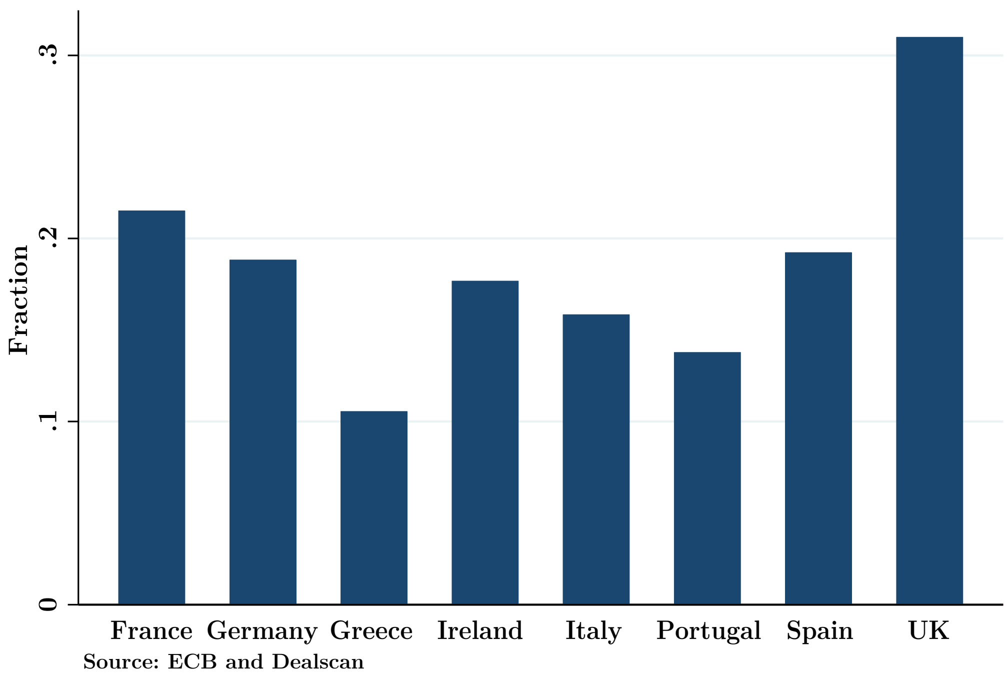

Figure A1 shows the fraction of syndicated loans relative to the total amount of loans issued to non-financial corporations in a given country, measured as the average fraction for the 2005–2009 period.

Figure A2. Financial Effects - Entire Sample

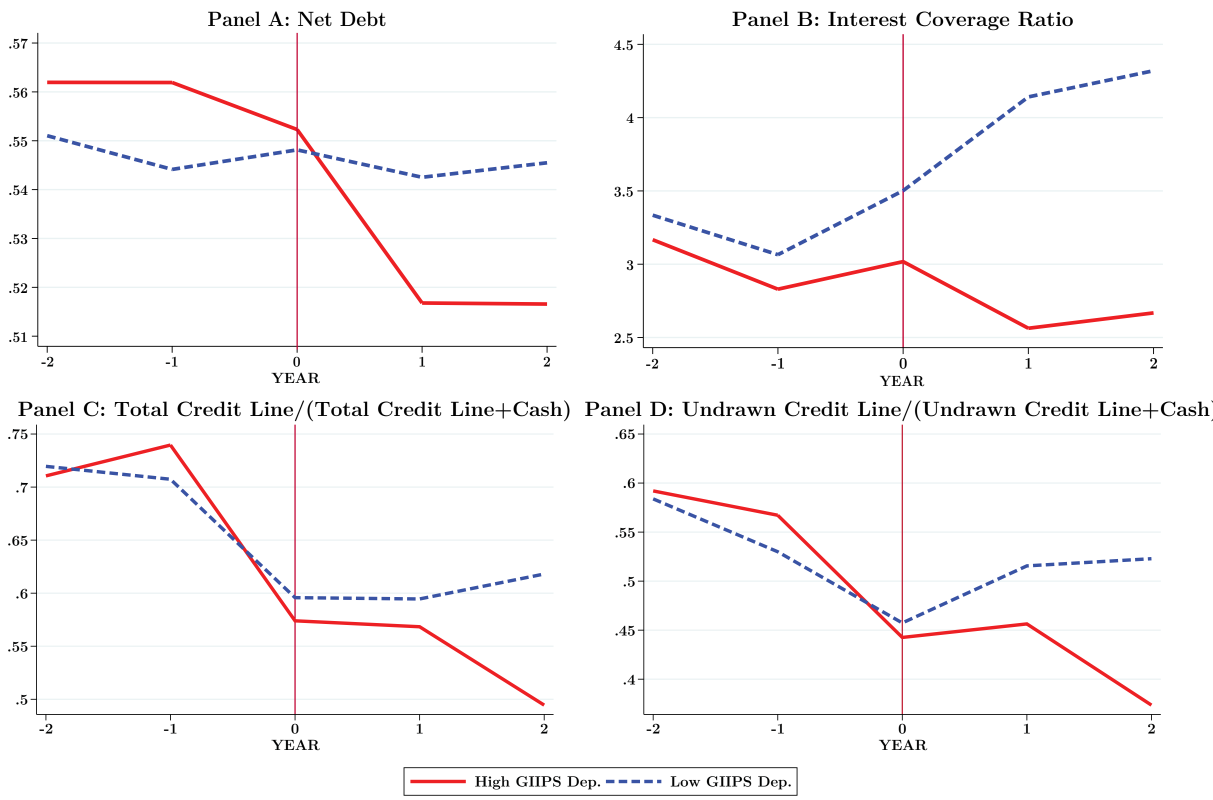

Figure A2 shows the evolution of net debt (Panel A), the interest coverage ratio (Panel B), the firms' total outstanding credit lines as a fraction of their credit lines plus cash holdings (Panel C), and the firms' undrawn credit lines as a fraction of their undrawn credit lines plus cash holdings (Panel D) for firms in Greece, Italy, Ireland, Portugal, or Spain with high (red solid line) and low (blue dashed line) *GIIPS Bank Dependence* in the pre-crisis period (years -2 and -1) and the crisis period (starting in year 0). We consider all loans in DealScan to firms located in: Greece, Italy, Ireland, Portugal, Spain, Germany, France, or U.K. In Panel A and B, we restrict the sample to firms with financial information in Amadeus. In Panel C and D, we restrict the sample to firms in the intersection of DealScan, Amadeus, and Capital IQ.

Figure A3. Real Effects - GIIPS firms with high revenues from non-GIIPS subsidaries

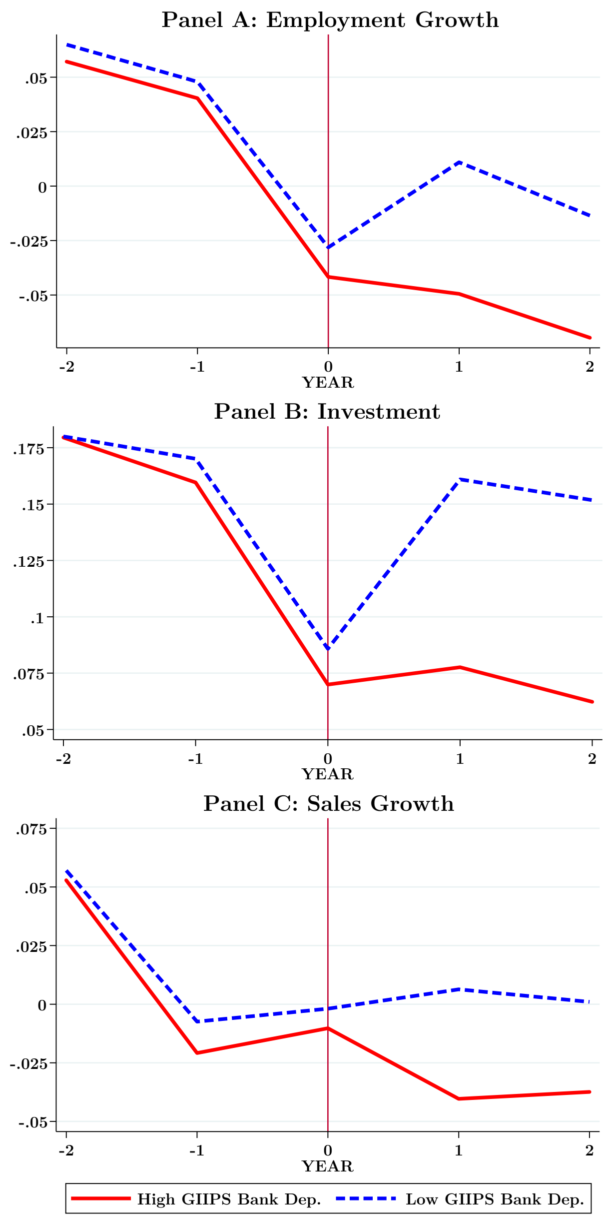

Figure A3 shows employment growth rates (Panel A), capital expenditures as a fraction of tangible assets (Panel B), and sales growth rates (Panel C) for firms in Greece, Italy, Ireland, Portugal, or Spain with high (red solid line) and low (blue dashed line) *GIIPS Bank Dependence* in the pre-crisis period (years -2 and -1) and the crisis period (starting in year 0) that generate an above median fraction of their revenue in subsidiaries not located in GIIPS countries. We restrict the sample to firms with financial information available in Amadeus.

Figure A4. Distribution of GIIPS Bank Dependence

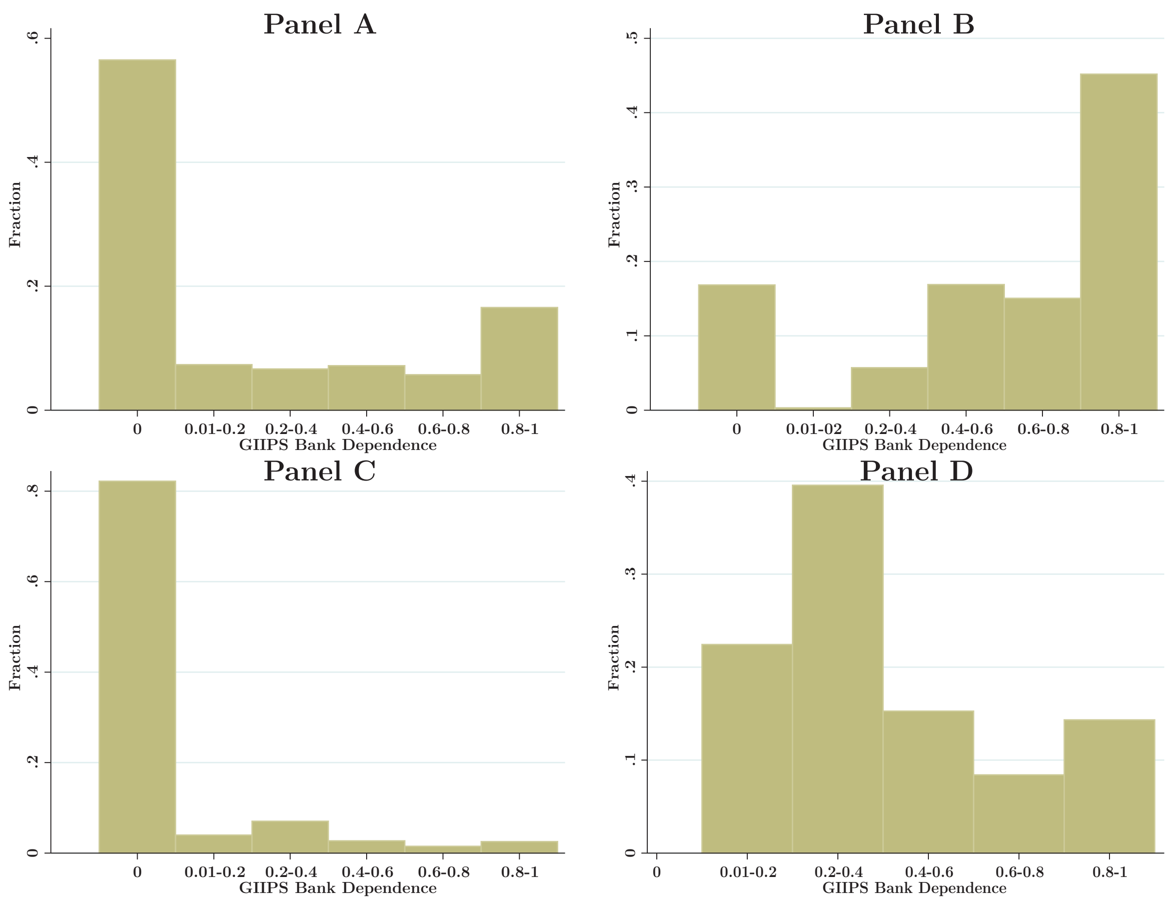

Figure A4 shows the distribution of *GIIPS Bank Dependence* for various subsamples. Panel A shows the distribution of *GIIPS Bank Dependence* for our entire sample of firms. Panel B shows the distribution for firms incorporated in GIIPS countries. Panel C shows the distribution for non-GIIPS firms, while Panel D shows the distribution for non-GIIPS firms conditional on having a positive *GIIPS Bank Dependence*.

Figure A5. Example for Matching of Firms and Banks

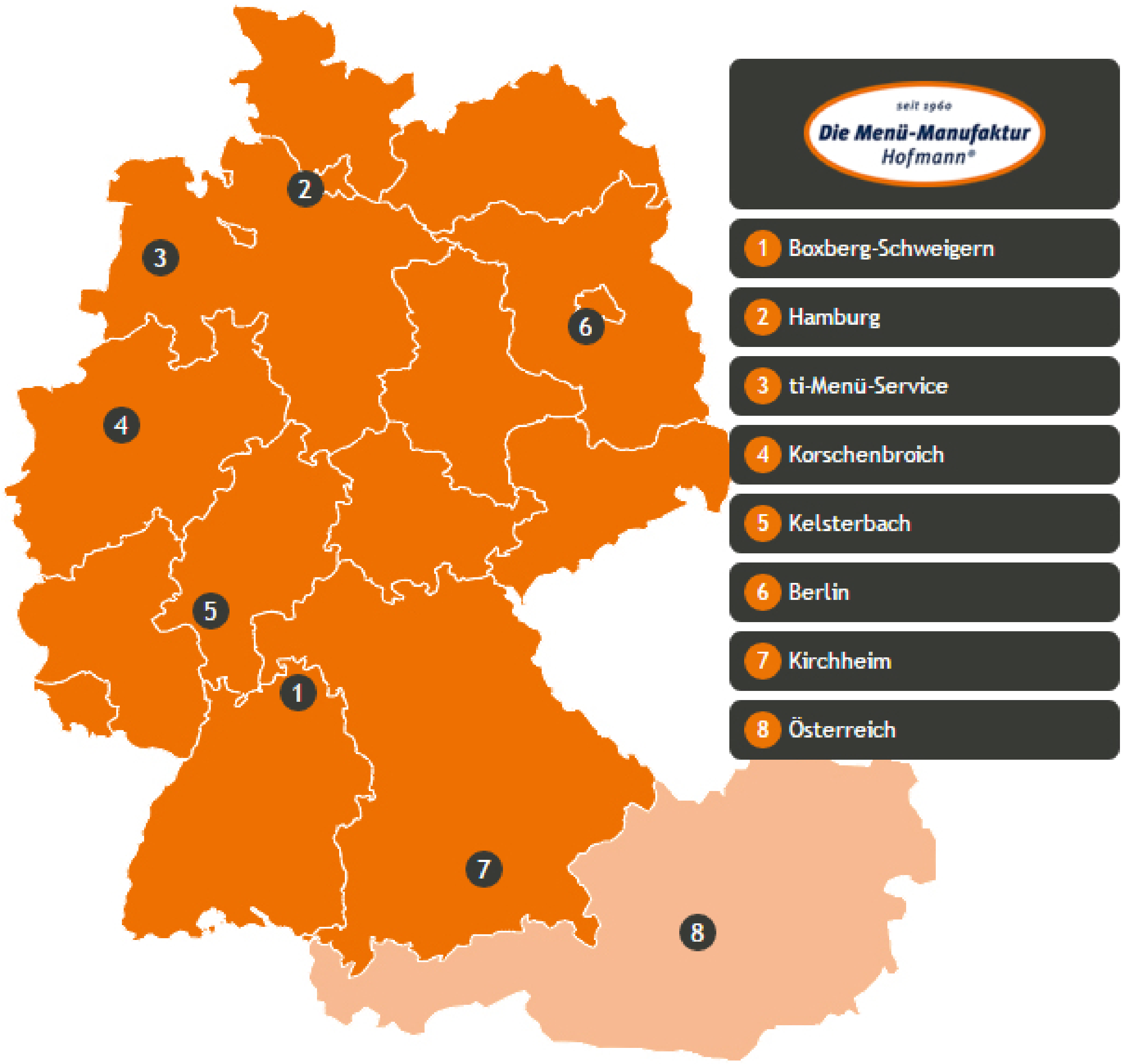

Figure A5 provides a geographical overview of business activities conducted by the German catering firm "Die Menu Manufaktur Hofmann", a firm located in Southern Germany that delivers food to the cafeterias of hospitals, corporations, etc. Source: http://www.die-menue-manufaktur.de/unternehmen/standorte/.