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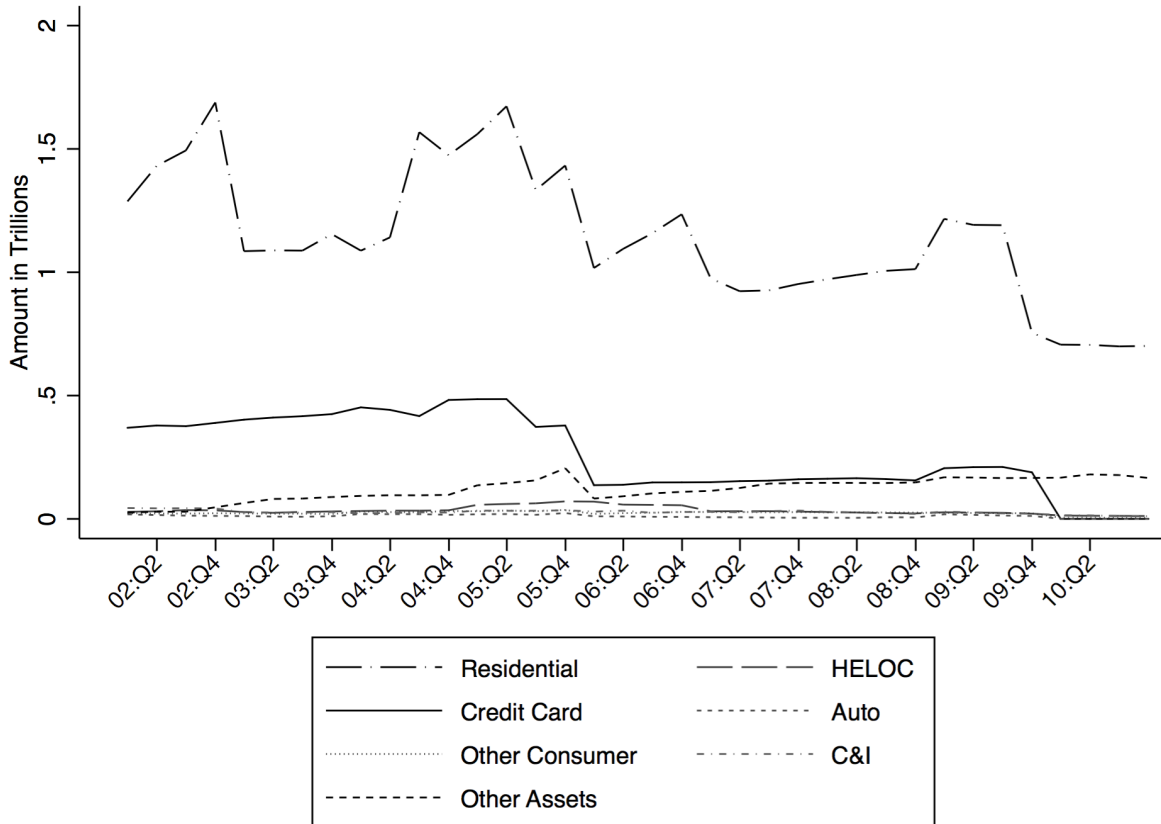
“Loan Sales and Bank Liquidity Management:
Evidence from a U.S. Credit Register”

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Appendix IA.I.

Stock of assets sold and securitized by U.S. BHCs (quarterly, 2002–2010)

Total value in trillions of dollars of outstanding off-balance sheet assets sold and securitized summed across U.S. BHCs during the period from 2002 until 2010 (quarterly). These sold and securitized assets have either servicing rights retained, recourse, or other credit enhancements provided by the bank. These assets are classified as: 1-4 family residential loans (Residential), home equity lines of credit (HELOC), credit card receivables (Credit Card), auto loans (Auto), other consumer loans (Other Consumer), commercial and industrial loans (C&I), and all other loans, leases, and assets (Other Assets).

Appendix IA.II. Further summary statistics on bank wholesale funding

Panels A and B summarize the data for the 2003–2006 “before-crisis” and the 2007–2010 “during-crisis” periods, respectively, by wholesale funding dependence terciles at the beginning of each period. The sample is restricted to loans held by at least two U.S. bank holding companies with valid covariates at the beginning of the year. Loan-level variables are averaged (unweighted) across loan share-years. Bank level variables are averaged across bank-years in each period, with the exception of Net Charge-Offs which is measured beginning 2003:Q4 in the before crisis period. Net Charge Offs is multiplied by 1,000 for readability. Panel C summarizes the time-series of wholesale funding across the bank size distribution. Banks below (above) the size cutoff are considered “Small” (“Large”). Wholesale funding is averaged (equally-weighted) across banks in a given quarter and size bucket. Panel D repeats this exercise but instead wholesale funding is size-weighted across banks in each quarter and size bucket. All variables are defined in Appendix A.

	N	Mean	Std.	Med.	N	Mean	Std.	Med.	N	Mean	Std.	Med.
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
	Bottom tercile				Middle tercile				Top tercile			
Panel A: Summary statistics for 2003–2006 by wholesale funding dependence terciles												
Loan-level variables												
<i>Loan Sale</i>	4,497	0.075	0.264	0	11,869	0.075	0.263	0	49,901	0.063	0.243	0
<i>Agent Dummy</i>	4,497	0.103	0.305	0	11,869	0.081	0.273	0	49,901	0.224	0.417	0
<i>Loan Fraction Held</i>	4,497	0.116	0.110	0.081	11,869	0.122	0.110	0.09	49,901	0.125	0.111	0.098
<i>Loan Size</i>	4,497	240.4	314.3	118.5	11,869	235.7	294.0	125	49,901	297.4	324.8	180
Bank-level variables (2002:Q4)												
<i>Wholesale Funding</i>	107	0.143	0.033	0.148	107	0.239	0.026	0.238	108	0.384	0.093	0.359
<i>Liquid Assets</i>	107	0.224	0.096	0.218	107	0.182	0.097	0.166	108	0.156	0.109	0.131
<i>NPL Ratio</i>	107	0.008	0.006	0.007	107	0.009	0.007	0.007	108	0.011	0.010	0.008
<i>Net Charge-Offs (2003:Q4)</i>	107	0.004	0.025	0.000	107	0.000	0.001	0.000	108	0.018	0.125	0.000
<i>Real Estate Loan Share</i>	107	0.654	0.146	0.673	107	0.65	0.141	0.671	108	0.642	0.172	0.682
<i>Capital Ratio</i>	107	0.093	0.024	0.090	107	0.088	0.021	0.086	108	0.079	0.016	0.079
<i>Bank Size</i>	107	14.24	1.104	13.62	107	14.59	1.408	13.90	108	15.35	1.806	14.84
<i>Large Bank</i>	107	0.018	0.136	0	107	0.047	0.212	0	108	0.111	0.315	0
<i>MVE/Assets</i>	25	0.193	0.049	0.186	26	0.173	0.052	0.156	37	0.169	0.067	0.158
<i>Tier 1 Capital/RWA</i>	107	12.31	2.883	11.94	107	11.436	2.846	10.93	108	10.76	2.580	10.25
<i>MBS+ABS/Assets</i>	107	0.081	0.081	0.055	107	0.082	0.063	0.079	108	0.141	0.095	0.130
<i>Criticized Ratio</i>	106	0.083	0.250	0	107	0.107	0.265	0	108	0.047	0.141	0
Panel B: Summary statistics for 2007–2010 by wholesale funding dependence terciles												
Loan-level variables												
<i>Loan Sale</i>	8,117	0.119	0.324	0	11,878	0.073	0.261	0	56,626	0.092	0.290	0
<i>Agent Dummy</i>	8,117	0.093	0.293	0	11,878	0.099	0.298	0	56,626	0.204	0.403	0
<i>Loan Fraction Held</i>	8,117	0.106	0.109	0.073	11,878	0.115	0.115	0.077	56,626	0.115	0.110	0.085
<i>Loan Size</i>	8,117	319.9	478.6	150	11,878	326.9	449.2	170	56,626	372.9	440.9	229.71
Bank Level Variables (2006:Q4)												
<i>Wholesale Funding</i>	116	0.163	0.041	0.168	117	0.260	0.024	0.261	116	0.407	0.107	0.374
<i>Liquid Assets</i>	116	0.195	0.099	0.168	117	0.155	0.094	0.142	116	0.151	0.113	0.120
<i>NPL Ratio</i>	116	0.007	0.008	0.004	117	0.007	0.006	0.005	116	0.007	0.007	0.005
<i>Net Charge-Offs</i>	116	0.002	0.021	0.000	117	0.006	0.063	0.000	116	0.003	0.021	0.000
<i>Real Estate Loan Share</i>	116	0.673	0.152	0.705	117	0.711	0.156	0.737	116	0.710	0.155	0.763
<i>Capital Ratio</i>	116	0.094	0.029	0.091	117	0.089	0.021	0.080	116	0.085	0.024	0.079
<i>Bank Size</i>	116	14.46	1.075	14.26	117	14.65	1.159	14.31	116	15.38	1.893	14.66
<i>Large Bank</i>	116	0.017	0.130	0	117	0.026	0.159	0	116	0.129	0.337	0
<i>MVE/Assets</i>	34	0.202	0.052	0.208	36	0.184	0.041	0.181	55	0.169	0.059	0.167
<i>Tier 1 Capital/RWA</i>	116	11.92	2.766	11.12	117	11.31	2.417	10.71	116	10.72	2.662	9.980
<i>MBS+ABS/Assets</i>	116	0.070	0.067	0.050	117	0.082	0.063	0.079	116	0.091	0.071	0.084
<i>Criticized Ratio</i>	113	0.053	0.162	0	114	0.053	0.183	0	115	0.047	0.141	0

Panel C: Equally weighted bank wholesale funding

Bank size cutoff:	\$1bn		\$10bn		\$50bn		
	Avg.	Small	Large	Small	Large	Small	Large
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2003:Q1	0.221	0.204	0.294	0.214	0.352	0.218	0.391
2003:Q2	0.222	0.206	0.293	0.215	0.356	0.219	0.383
2003:Q3	0.222	0.206	0.296	0.214	0.378	0.219	0.391
2003:Q4	0.222	0.206	0.294	0.215	0.386	0.219	0.395
2004:Q1	0.222	0.206	0.293	0.214	0.389	0.219	0.405
2004:Q2	0.229	0.213	0.302	0.221	0.401	0.226	0.408
2004:Q3	0.231	0.215	0.303	0.223	0.402	0.227	0.428
2004:Q4	0.232	0.216	0.300	0.224	0.395	0.228	0.424
2005:Q1	0.235	0.220	0.303	0.228	0.405	0.231	0.429
2005:Q2	0.242	0.227	0.308	0.235	0.398	0.238	0.429
2005:Q3	0.244	0.229	0.308	0.237	0.398	0.241	0.427
2005:Q4	0.245	0.230	0.307	0.238	0.399	0.241	0.445
2006:Q1	0.269	0.247	0.301	0.260	0.374	0.263	0.449
2006:Q2	0.276	0.253	0.306	0.267	0.385	0.270	0.445
2006:Q3	0.279	0.256	0.309	0.270	0.393	0.273	0.454
2006:Q4	0.276	0.253	0.303	0.266	0.381	0.269	0.457
2007:Q1	0.268	0.247	0.293	0.259	0.373	0.262	0.454
2007:Q2	0.263	0.242	0.289	0.253	0.375	0.257	0.462
2007:Q3	0.266	0.244	0.291	0.257	0.375	0.260	0.429
2007:Q4	0.272	0.251	0.296	0.263	0.381	0.266	0.440
2008:Q1	0.276	0.258	0.297	0.267	0.387	0.270	0.437
2008:Q2	0.282	0.265	0.301	0.273	0.389	0.277	0.427
2008:Q3	0.278	0.264	0.295	0.270	0.382	0.273	0.421
2008:Q4	0.278	0.265	0.291	0.272	0.352	0.274	0.395
2009:Q1	0.274	0.265	0.285	0.268	0.351	0.269	0.413
2009:Q2	0.269	0.261	0.278	0.263	0.341	0.264	0.398
2009:Q3	0.266	0.259	0.273	0.261	0.326	0.261	0.383
2009:Q4	0.261	0.258	0.264	0.257	0.311	0.257	0.366

Panel D: Size weighted bank wholesale funding

Bank size cutoff:	\$1bn		\$10bn		\$50bn		
	Avg.	Small	Large	Small	Large	Small	Large
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
2003:Q1	0.403	0.210	0.414	0.264	0.423	0.303	0.435
2003:Q2	0.403	0.212	0.413	0.266	0.422	0.311	0.431
2003:Q3	0.405	0.211	0.415	0.254	0.425	0.313	0.432
2003:Q4	0.409	0.212	0.420	0.254	0.430	0.321	0.437
2004:Q1	0.426	0.212	0.437	0.252	0.447	0.323	0.454
2004:Q2	0.434	0.218	0.444	0.258	0.455	0.338	0.460
2004:Q3	0.436	0.220	0.446	0.261	0.457	0.324	0.464
2004:Q4	0.435	0.223	0.445	0.260	0.455	0.315	0.462
2005:Q1	0.439	0.226	0.449	0.258	0.459	0.320	0.464
2005:Q2	0.445	0.234	0.454	0.267	0.463	0.331	0.468
2005:Q3	0.438	0.236	0.447	0.268	0.456	0.334	0.460
2005:Q4	0.439	0.237	0.448	0.269	0.458	0.317	0.464
2006:Q1	0.445	0.248	0.451	0.282	0.465	0.302	0.481
2006:Q2	0.450	0.256	0.456	0.286	0.470	0.305	0.483
2006:Q3	0.461	0.259	0.467	0.288	0.482	0.308	0.495
2006:Q4	0.458	0.256	0.464	0.282	0.478	0.297	0.494
2007:Q1	0.467	0.249	0.473	0.274	0.489	0.287	0.506
2007:Q2	0.472	0.244	0.478	0.270	0.494	0.286	0.512
2007:Q3	0.484	0.247	0.490	0.276	0.506	0.296	0.517
2007:Q4	0.481	0.254	0.487	0.283	0.503	0.296	0.514
2008:Q1	0.479	0.262	0.485	0.283	0.500	0.304	0.509
2008:Q2	0.471	0.268	0.476	0.286	0.491	0.319	0.498
2008:Q3	0.476	0.267	0.480	0.282	0.495	0.311	0.503
2008:Q4	0.442	0.268	0.446	0.283	0.459	0.300	0.467
2009:Q1	0.440	0.268	0.444	0.277	0.455	0.289	0.463
2009:Q2	0.432	0.264	0.436	0.270	0.448	0.282	0.456
2009:Q3	0.424	0.261	0.428	0.266	0.439	0.275	0.448
2009:Q4	0.414	0.260	0.417	0.260	0.428	0.268	0.436

Appendix IA.IV. Correlation structure among bank asset composition variables

This table summarizes the correlation structure among bank asset portfolio attributes. Each variable is measured in 2006:Q4 at the bank holding company level. All variables are defined in Appendix A.

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] <i>Wholesale Funding</i>	1							
[2] <i>Real Estate Loan Share</i>	-0.04	1						
[3] <i>C&I Loan Share</i>	-0.10	-0.50	1					
[4] <i>Syndicated Loan Exposure</i>	0.06	-0.26	0.21	1				
[5] <i>Syndicated Loan Concentration</i>	-0.16	0.23	-0.08	-0.41	1			
[6] <i>Criticized Ratio</i>	0.06	0.08	-0.08	-0.04	0.08	1		
[7] <i>Non-Interest Income/Net Income</i>	-0.01	-0.16	0.01	0.06	-0.05	0.03	1	
[8] <i>Trading Assets/Assets</i>	0.24	-0.29	-0.05	0.13	-0.27	-0.01	0.08	1

Appendix IA.VI. Relation between wholesale funding and net selling activity

Panel A reports the average wholesale funding dependence of net buyers and net sellers of syndicated loan shares on an annual basis from 2003-2010. A bank is classified as a net seller (buyer) if it sold (bought) more loans than it bought (sold) in dollar terms. The number of banks (N) is indicated. The difference in the mean wholesale funding dependence for each bank type is indicated. The t -value from an independent two-sample test with equal variances are shown below in parentheses. ***, **, and * denote 1%, 5%, and 10% statistical significance, respectively. Panel B reports summary statistics for quarterly growth rates in liquid assets, cash, loans, and credit supply over the period from 2003:Q1 until 2009:Q4. Banks are partitioned according to whether they are net buyers or sellers in 2008. *Cash* is the sum of non-interest-bearing cash balances and interest-bearing cash balances. Liquid Assets is the sum of cash, federal funds sold, repo bought, and securities (excluding mortgage- and asset-backed securities). *Credit Supply* is the sum of loans plus undrawn commitments.

Panel A: Wholesale funding dependence				
	Net sellers	Net buyers	Diff.	[t -value]
	[1]	[2]	[3]	[4]
2003–2006 before crisis period				
	<i>Wholesale Funding</i> _{2002Q4}			
2003	0.28	0.26	0.02	[1.28]
2004	0.28	0.25	0.03*	[1.68]
2005	0.27	0.26	0.01	[0.52]
2006	0.27	0.25	0.02	[0.85]
2007–2010 crisis period				
	<i>Wholesale Funding</i> _{2006Q4}			
2007	0.27	0.28	-0.01	[-0.43]
2008	0.32	0.27	0.05***	[2.56]
2009	0.30	0.26	0.04***	[2.07]
2010	0.30	0.26	0.04***	[2.54]

Panel B: Adjustments in bank portfolio allocation

	Net sellers in 2008					Net buyers in 2008				
	Mean	Std.	p25	Med.	p75	Mean	Std.	p25	Med.	p75
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]
Adjustments before crisis (2003–2006)										
$\Delta Liquid Assets_t / Liquid Assets_{t-1}$	0.68	0.69	0.10	0.51	1.24	0.53	0.84	0.08	0.31	0.63
$\Delta Cash_t / Cash_{t-1}$	0.56	0.65	0.01	0.53	0.99	0.41	0.84	-0.04	0.21	0.63
$\Delta Loans_t / Loans_{t-1}$	0.84	0.71	0.41	0.66	1.03	0.74	1.03	0.34	0.50	0.89
$\Delta Credit Supply_t / Credit Supply_{t-1}$	0.90	0.73	0.44	0.76	1.04	0.80	1.07	0.35	0.56	0.87
$\Delta Assets_t / Assets_{t-1}$	0.72	0.63	0.29	0.57	0.91	0.61	0.80	0.25	0.43	0.67
Adjustments during crisis (2007–2010)										
$\Delta Liquid Assets_t / Liquid Assets_{t-1}$	1.17	1.51	0.36	0.77	1.33	1.07	1.15	0.35	0.75	1.40
$\Delta Cash_t / Cash_{t-1}$	1.76	2.39	0.28	1.07	2.46	1.71	2.09	0.49	1.04	2.17
$\Delta Loans_t / Loans_{t-1}$	0.11	0.35	-0.16	0.02	0.37	0.19	0.39	-0.01	0.15	0.32
$\Delta Credit Supply_t / Credit Supply_{t-1}$	0	0.34	-0.24	-0.08	0.22	0.13	0.38	-0.06	0.08	0.25
$\Delta Assets_t / Assets_{t-1}$	0.23	0.46	-0.06	0.11	0.48	0.26	0.40	0.05	0.21	0.37
