

**Additional Tables and Notes Regarding Data Construction for
“Growth of Finance”**

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Appendix Table 1: Value Added from Financial Services Sector

Notes: In the original data available from the Bureau of Economic Analysis, the “securities” industry is distinct from “funds and trusts.” We merge these two into a broader “Securities” category. To do so, we rely on the output-input tables. The original data can be accessed at <http://www.bea.gov/industry/>.

	Value Added								Gross Output							
	All Finance		Credit Intermediation		Insurance		Securities		All Finance		Credit Intermediation		Insurance		Securities	
	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP	\$bn	%GDP
1980	138	4.9%	73	2.6%	54	1.9%	11	0.4%	264	9.5%	110	4.0%	129	4.6%	25	0.9%
1981	155	5.0%	81	2.6%	60	1.9%	14	0.4%	296	9.5%	122	3.9%	145	4.6%	28	0.9%
1982	168	5.2%	84	2.6%	69	2.1%	15	0.5%	325	10.0%	127	3.9%	165	5.1%	32	1.0%
1983	194	5.5%	99	2.8%	71	2.0%	25	0.7%	364	10.3%	149	4.2%	169	4.8%	45	1.3%
1984	213	5.4%	106	2.7%	82	2.1%	26	0.7%	405	10.3%	160	4.1%	197	5.0%	48	1.2%
1985	233	5.5%	119	2.8%	81	1.9%	33	0.8%	434	10.3%	180	4.3%	195	4.6%	58	1.4%
1986	262	5.9%	141	3.2%	84	1.9%	37	0.8%	483	10.8%	213	4.8%	202	4.5%	68	1.5%
1987	282	6.0%	152	3.2%	82	1.7%	49	1.0%	509	10.7%	230	4.9%	196	4.1%	83	1.8%
1988	302	5.9%	152	3.0%	99	1.9%	50	1.0%	541	10.6%	243	4.8%	219	4.3%	79	1.5%
1989	322	5.9%	159	2.9%	110	2.0%	52	1.0%	574	10.5%	246	4.5%	239	4.4%	89	1.6%
1990	347	6.0%	172	3.0%	124	2.1%	51	0.9%	596	10.3%	254	4.4%	257	4.4%	85	1.5%
1991	382	6.4%	190	3.2%	137	2.3%	55	0.9%	629	10.5%	267	4.5%	268	4.5%	94	1.6%
1992	414	6.5%	203	3.2%	152	2.4%	59	0.9%	663	10.5%	282	4.4%	280	4.4%	101	1.6%
1993	441	6.6%	211	3.2%	155	2.3%	75	1.1%	728	10.9%	303	4.5%	302	4.5%	123	1.9%
1994	456	6.4%	216	3.0%	169	2.4%	71	1.0%	766	10.8%	321	4.5%	324	4.6%	121	1.7%
1995	490	6.6%	220	3.0%	185	2.5%	84	1.1%	830	11.2%	347	4.7%	333	4.5%	150	2.0%
1996	527	6.7%	231	2.9%	190	2.4%	106	1.4%	910	11.6%	386	4.9%	339	4.3%	185	2.4%
1997	582	7.0%	248	3.0%	206	2.5%	128	1.5%	1000	12.0%	429	5.1%	353	4.2%	218	2.6%
1998	635	7.2%	277	3.2%	228	2.6%	129	1.5%	1104	12.6%	469	5.3%	378	4.3%	256	2.9%
1999	682	7.3%	314	3.4%	230	2.5%	138	1.5%	1227	13.1%	520	5.6%	398	4.3%	309	3.3%
2000	762	7.7%	338	3.4%	274	2.8%	150	1.5%	1378	13.8%	561	5.6%	432	4.3%	385	3.9%
2001	839	8.2%	377	3.7%	260	2.5%	202	2.0%	1405	13.7%	614	6.0%	451	4.4%	341	3.3%
2002	864	8.1%	436	4.1%	249	2.3%	179	1.7%	1458	13.7%	676	6.4%	471	4.4%	311	2.9%
2003	903	8.1%	462	4.1%	273	2.5%	169	1.5%	1573	14.1%	729	6.5%	512	4.6%	332	3.0%
2004	929	7.8%	433	3.7%	320	2.7%	176	1.5%	1697	14.3%	760	6.4%	561	4.7%	376	3.2%
2005	1,029	8.1%	471	3.7%	338	2.7%	220	1.7%	1889	14.9%	835	6.6%	600	4.8%	454	3.6%
2006	1,106	8.3%	484	3.6%	367	2.7%	255	1.9%	2067	15.4%	890	6.6%	624	4.7%	554	4.1%
2007	1,110	7.9%	477	3.4%	392	2.8%	241	1.7%	2199	15.6%	932	6.6%	661	4.7%	606	4.3%
Δ 1980-2007	973	3.0%	404	0.8%	339	0.9%	230	1.3%	1,934	6.1%	822	2.6%	532	0.1%	581	3.4%

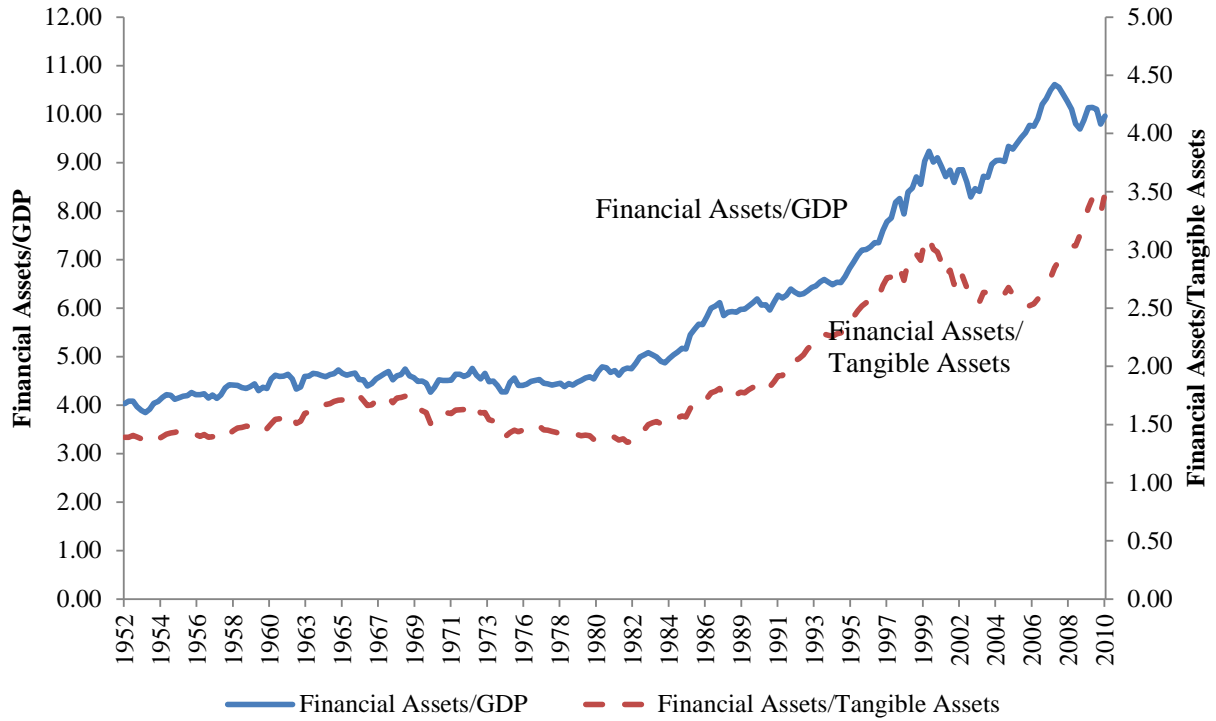
Appendix Table 2: The Credit Intermediation Index

Notes: Data are from the *Flow of Funds Accounts of the United States*, 1980-2009. End-User Liabilities is from Table L1 and is defined as domestic nonfinancial sector debt plus trade payables. We further break this down into private and public credit below. Total Liabilities is end-user liabilities plus financial sector liabilities. CII is the credit intermediation index, and is the ratio of Total Liabilities to End-User Liabilities. The last nine columns of the table break down components of financial sector liabilities and express them as ratios of end-user liabilities. Banks refers to commercial banks plus savings institutions. GSE refers to Government Sponsored Enterprises; ABS refers to asset backed securities. Repurchase agreements are reported gross. "Other Fin Sector" includes liabilities of life insurers, credit unions, broker dealers, funding companies, REITs, and security credit.

Year	Credit Intermediation Index	Total Liab. (\$tr)	End-User Liabilities (\$tr)			Ratios of Selected Financial Sector Liabilities to End-User Liabilities (%)								
	CII	Total	Total	Private Credit	Public Credit	Banks	Deposits	ABS	GSE	GSE Pools	MMFs	Pension Funds	Repurchase Agreements	Other Fin Sector
1980	1.83	8.2	4.5	3.4	1.1	3.3%	39.9%	0.0%	3.6%	2.5%	1.7%	17.2%	5.9%	21%
1981	1.87	9.3	4.9	3.7	1.2	3.7%	39.0%	0.0%	3.9%	2.6%	3.8%	17.7%	7.1%	21%
1982	1.89	10.2	5.4	4.0	1.4	3.8%	39.1%	0.0%	3.9%	3.3%	4.1%	18.6%	7.2%	20%
1983	1.88	11.3	6.0	4.4	1.6	3.7%	39.1%	0.1%	3.5%	4.1%	3.0%	18.6%	7.1%	19%
1984	1.88	12.8	6.8	5.0	1.9	3.9%	38.2%	0.3%	3.5%	4.2%	3.4%	18.2%	7.5%	19%
1985	1.85	14.6	7.9	5.6	2.3	3.8%	35.9%	0.5%	3.4%	4.7%	3.1%	17.0%	7.7%	19%
1986	1.88	16.4	8.7	6.2	2.6	3.8%	35.1%	0.9%	3.2%	6.1%	3.3%	17.1%	8.2%	19%
1987	1.87	17.8	9.5	6.7	2.8	4.0%	33.4%	1.2%	3.2%	7.0%	3.3%	16.9%	8.3%	19%
1988	1.87	19.4	10.4	7.4	3.0	3.9%	32.6%	1.5%	3.4%	7.2%	3.2%	17.3%	8.3%	19%
1989	1.89	21.1	11.1	8.0	3.1	3.5%	31.4%	1.9%	3.4%	7.8%	3.8%	18.4%	8.8%	19%
1990	1.88	22.3	11.9	8.4	3.5	2.8%	29.6%	2.3%	3.4%	8.6%	4.2%	18.8%	8.0%	19%
1991	1.88	23.3	12.4	8.5	3.9	2.3%	28.3%	2.6%	3.3%	9.3%	4.3%	19.1%	7.7%	20%
1992	1.89	24.5	13.0	8.8	4.2	2.2%	26.8%	3.0%	3.5%	9.8%	4.2%	19.3%	8.5%	20%
1993	1.91	26.0	13.6	9.1	4.5	2.3%	25.4%	3.4%	3.9%	10.0%	4.1%	19.7%	9.3%	22%
1994	1.92	27.4	14.3	9.7	4.6	2.4%	23.9%	3.8%	4.9%	10.3%	4.2%	20.0%	9.5%	22%
1995	1.96	29.6	15.1	10.4	4.7	2.4%	23.5%	4.4%	5.3%	10.4%	4.9%	20.4%	10.7%	24%
1996	2.00	31.9	16.0	11.1	4.9	2.5%	23.5%	4.9%	5.6%	10.7%	5.6%	20.6%	10.9%	25%
1997	2.05	34.5	16.9	12.0	4.9	2.8%	23.5%	5.4%	5.9%	10.8%	6.2%	21.3%	11.9%	27%
1998	2.10	37.9	18.0	13.1	4.9	3.3%	23.6%	6.5%	7.1%	11.2%	7.4%	21.6%	11.6%	28%
1999	2.13	41.3	19.3	14.5	4.8	3.7%	22.9%	6.9%	8.2%	11.9%	8.2%	21.6%	11.7%	29%
2000	2.16	44.5	20.6	16.0	4.6	3.9%	22.9%	7.3%	8.9%	12.1%	8.8%	20.6%	12.6%	31%
2001	2.21	47.9	21.7	17.0	4.7	4.0%	23.9%	8.1%	9.8%	13.1%	10.3%	20.1%	12.9%	30%
2002	2.21	51.2	23.2	18.1	5.1	3.9%	23.8%	8.6%	10.1%	13.6%	9.6%	19.2%	13.3%	30%
2003	2.22	55.2	24.9	19.3	5.6	3.9%	23.9%	8.9%	10.4%	13.4%	8.1%	19.3%	13.5%	30%
2004	2.21	60.0	27.1	21.0	6.1	4.3%	24.2%	9.8%	9.9%	12.5%	6.9%	18.8%	13.8%	31%
2005	2.19	65.3	29.8	23.2	6.6	4.3%	23.9%	11.4	8.7%	11.9%	6.7%	17.8%	14.4%	30%
2006	2.22	71.8	32.4	25.5	6.9	4.1%	23.7%	13.0	8.1%	11.9%	7.1%	17.5%	15.2%	31%
2007	2.26	79.3	35.1	27.8	7.3	4.9%	23.6%	12.9	8.3%	12.7%	8.6%	17.1%	15.4%	32%

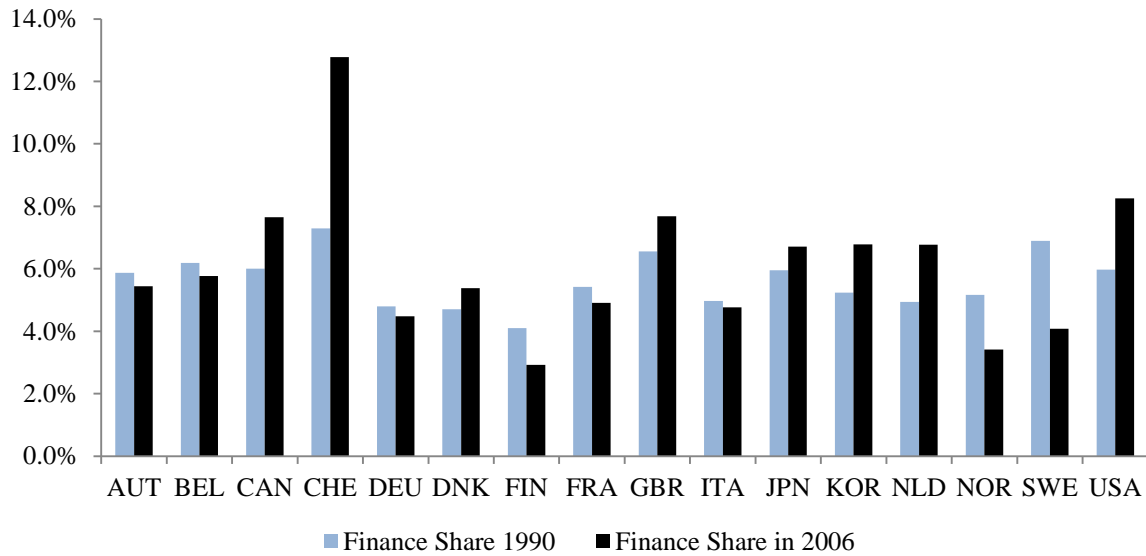
Appendix Figure 1. The Growth of Financial Assets

Notes: Data are from the *Flow of Funds Accounts of the United States*. Financial assets are summed across all sectors.



Appendix Figure 2. The Growth of Financial Services in Different Countries. 1990-2006

Notes: Annual data on financial services as a share of GDP are collected from the OECD and a variety of national sources. Panel A plots, for each country, the financial services share in 1990 and the financial services share in 2006. Panel B plots the difference between the financial services share in 2006 and the financial services share in 1990 (y-axis) against the financial services share in 1990 (x-axis).



Notes for Appendix Figure 1

Value Added of an industry measures the contribution of that industry to GDP. It is defined as:

$$\text{Industry Value Added} = \text{Industry Gross Output} - \text{Industry Inputs}$$

Industry Gross Output is equal to the revenues of the industry.

These data are produced using the annual industry-level accounts from the Bureau of Economic Analysis (<http://www.bea.gov/industry/index.html>). In BEA data, industries are defined according to the North American Industrial Classification System (NAICS). In NAICS, the financial sector comprises of four industries:

- 1) Credit Intermediation
- 2) Securities, Commodity Contracts, and Other Financial Investments
- 3) Insurance
- 4) Funds, Trusts, and Other Financial Vehicles

Since Funds, Trusts, and Other Financial Vehicles is primarily an input of the Securities industry, we merge their respective accounts. Value Added of the joint industry is just the sum of the two respective Value Added amounts. To calculate Gross Output of the combined industry we add the corresponding Gross Output numbers, and subtract inputs from the two industries to one another. We carry out these calculations using annual Input-Output accounts from the BEA.

A detailed overview on the theory and methods of national income accounting is available at http://www.bea.gov/national/pdf/nipa_primer.pdf

Table 1 main text—Value Added and Output from Securities Firms

The table is produced using BEA benchmark year detailed Input-Output accounts, and the 2007 Economic Census.

In national accounts an industry comprises of companies that are primarily engaged in the corresponding business area. However, companies often operate in other industries as well. For example, companies that are classified as belonging to the Credit Intermediation industry (such as banks) can have significant business associated with the Securities industry. In that case, the banks' output relating to the Securities business is still considered part of the Credit Intermediation industry GDP. This means Industry GDP does not measure all activity in the corresponding business area. Rather, it measures all activity done by companies primarily operating in the industry.

This difference can be significant. During 1997-2007 the Securities output by companies primarily operating in other industries grew from 9.4 to 82.1 billion dollars.

To emphasize this point we calculate Value Added in two separate ways:

1) *Value Added by Securities firms*. This is the number reported in Industry-level GDP accounts. This calculation looks at all activity by companies in the Securities industry.

2) *Value Added by Securities-related activities*. In this calculation we include output in the Securities industry by companies primarily operating in other industries. We do not include output in other industries by companies classified in Securities. This is a better measure of total economic activity relating to the Securities industry.

Table 2 main text—Value Added and Output from Credit Intermediation Firms

The comments from above apply here as well.

The table is produced using BEA benchmark year detailed Input-Output accounts and the 2007 Economic Census.

We found that in 1997 and 2002, the Economic Census numbers were similar to, but not identical to the product-level outputs from the BEA. Thus we expect that when the BEA publishes product-level outputs in 2013 or 2014 (for the year 2007) that there may be slight differences from what we have in the table.

Figure 4—Credit Intermediation Output

This figure is based on data from FDIC Call Report data, FDIC Historical Statistics on Banking, Federal Reserve Flow of Funds data, BEA benchmark Input-Output data, 2012 Mortgage Market Statistical Annual, and Government Accountability Office data on credit card fees. Further details on specific items are provided below.

Imputed output from loans and deposits.

The theory behind calculating imputed output from loans and deposits is explained in the main text. The calculation is done using detailed data from *FDIC Call Reports*. Output prior to 1987 is imputed using *FDIC Historical Statistics on Banking*. We adjust the total to include output of foreign banks by calculating the loan and deposit share of domestic banks to all banks from *Flow of Funds* data.

We check the imputation by comparing our figures against estimates published by the BEA for benchmark years.

Detailed instructions and examples regarding the imputation are provided in *Measuring the Services of Commercial Banks in the NIPAs* (www.bea.gov/scb/pdf/2003/09September/0903banking.pdf)

Mortgage Origination and Other Fees on Mortgages

We impute mortgage fees from BEA benchmark year data and fill in the series using annual mortgage origination volume from the 2012 Mortgage Market Statistical Annual.

Credit Card fees

We estimate credit card fees by multiplying outstanding credit card debt with Government Accountability Office data on average credit card fees.

Noninterest Income Deposit Accounts

The data is from FDIC Historical Statistics on Banking.

Uncounted Output from Securitization

In the BEA national accounts framework, output from securitized loans is limited to servicing fee income. Ashcraft and Steindel (2008) argue that the securitization process entails a number of different services beyond servicing, and consequently output from these activities should be included in the national accounts. They demonstrate that accounting for securitized loans held by banks, the imputed output of banking in 2006 would be 14% above the value reported by the BEA.

We follow Ashcraft and Steindel and calculate imputed output for securitized loans. The method is very similar to that of imputing output associated with traditional loans. The output associated to securitized loans is equal to the average spread over Treasury securities times securities outstanding:

$$\text{Uncounted Securitization Output} = \text{Outstanding Securitized Loans} \times (\text{Average Interest} - \text{Treasury Securities Interest})$$

Average interest is based on bank-level data in the call reports.