



Financial Accounts of the United States – Z.1

Matthew Guse

Flow of Funds

Federal Reserve Board

NABE Foundation Economic Measurement Seminar

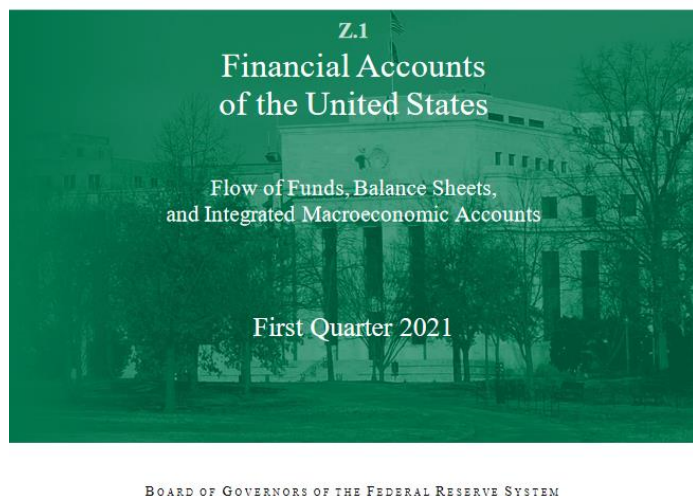
Washington, D.C.

July 19, 2022

Outline

- Introduction
- Structure and matrix framework
- Integrated Macroeconomic Accounts (IMA)
- Uses of the Financial Accounts
- Distributional Financial Accounts

Introduction: History

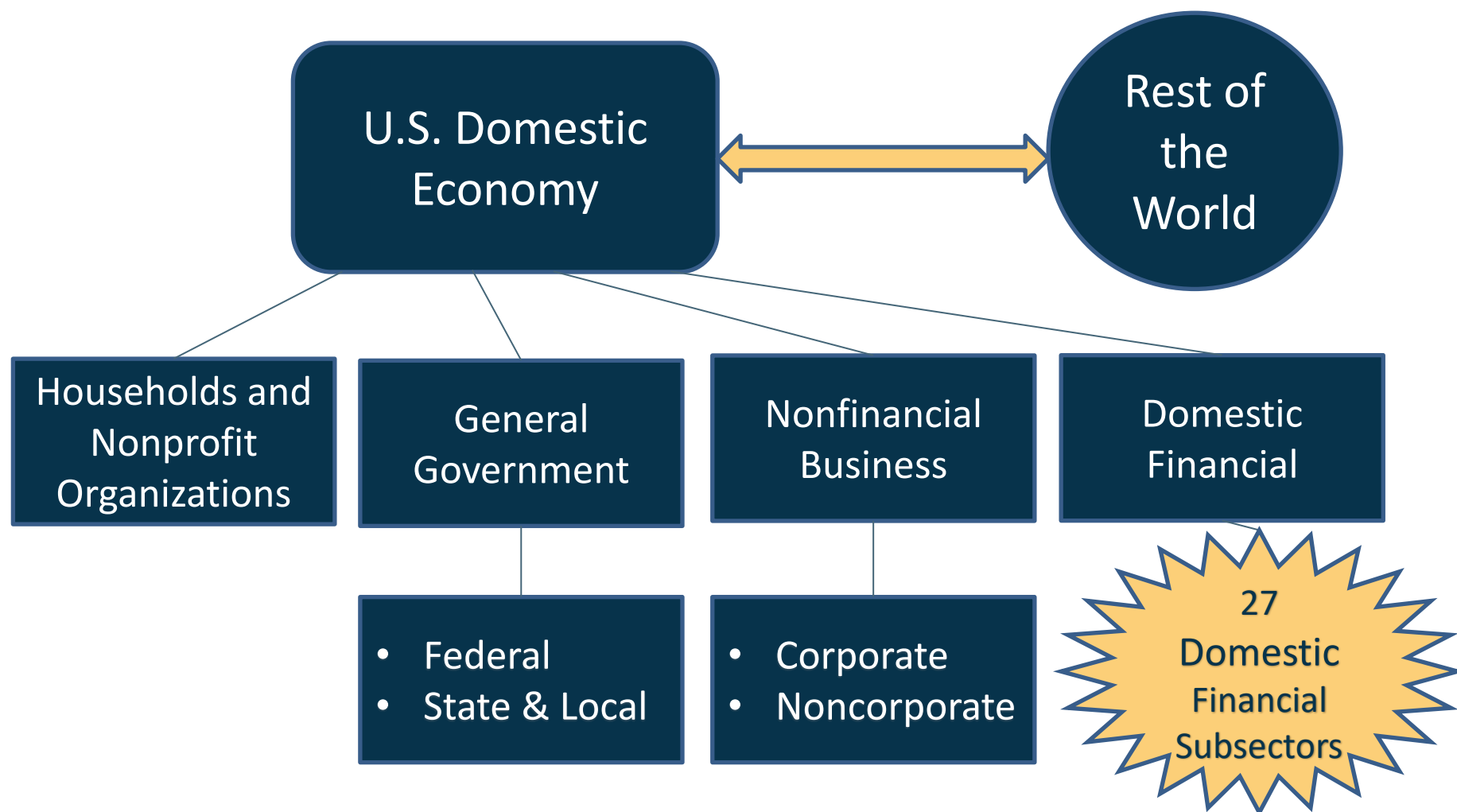


www.federalreserve.gov/releases/Z1/

- Time series:
Annual 1945 – 2021
Quarterly 1951:Q4 – 2022:Q1
- Includes flows, levels, some balance sheets, Integrated Macroeconomic Accounts, and more
- Published 10 weeks after the end of the reference quarter
- All data available in the Federal Reserve's Data Download Program (DDP)

www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1

Structure: Economic Sectors

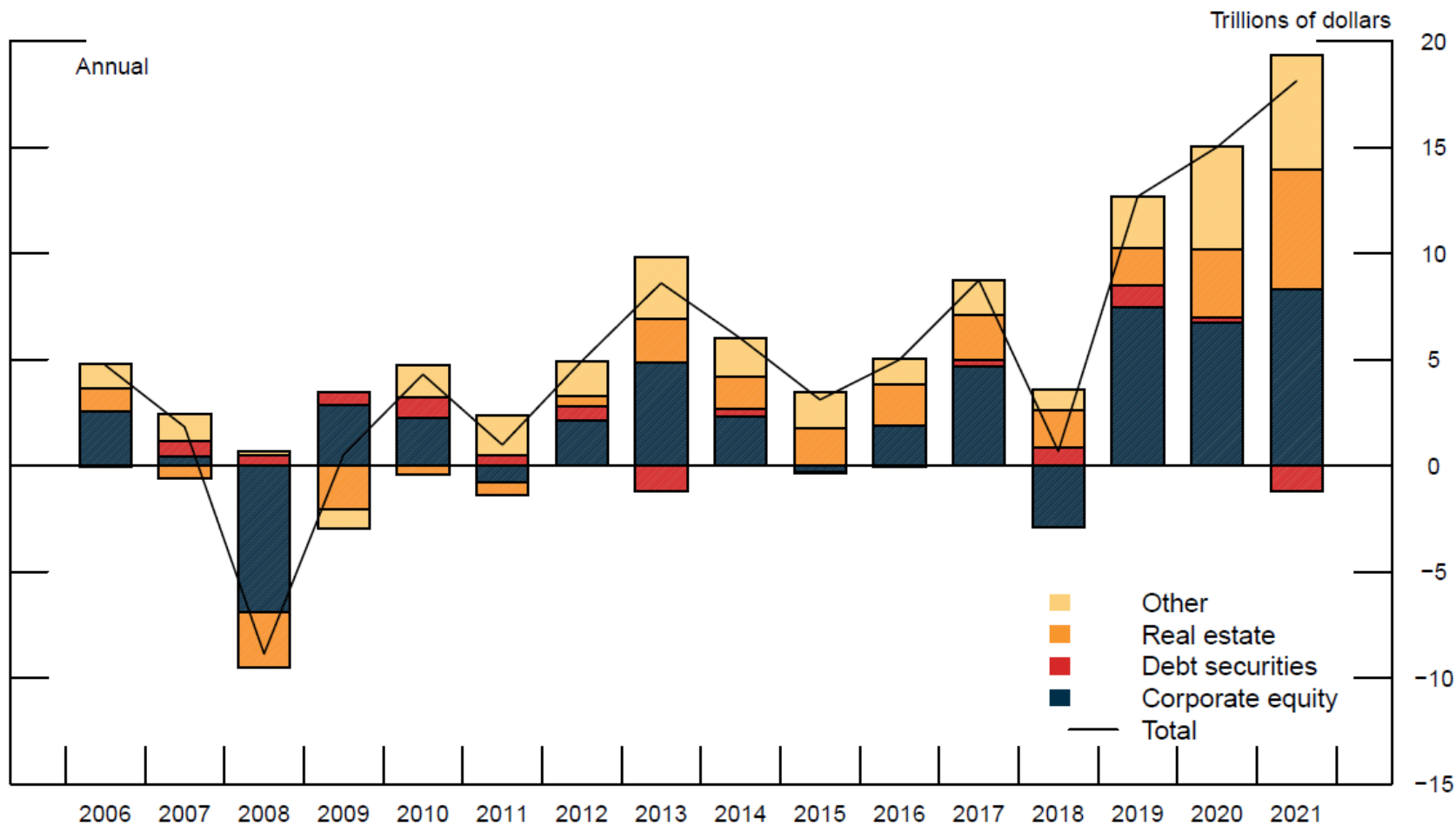


Structure: Financial Instruments

Financial Assets & Liabilities	U.S. Official Reserve Assets
	Currency and Deposits
	Money Market Fund Shares
	Federal Funds and Repurchase Agreements
	Debt Securities
	Loans
	Equities and Investment Fund Shares
	Life Insurance Reserves and Pension Entitlements
	Other assets/liabilities

Structure: Financial Instruments

Change in Household Net Worth by Instrument



Source: Financial Accounts of the United States, June 9, 2022.

Introduction: Data Sources

- Incorporate a wide range of data sources
- Almost no data collected specifically for the accounts

Government

- NIPAs
- BOP and IIP
- Other

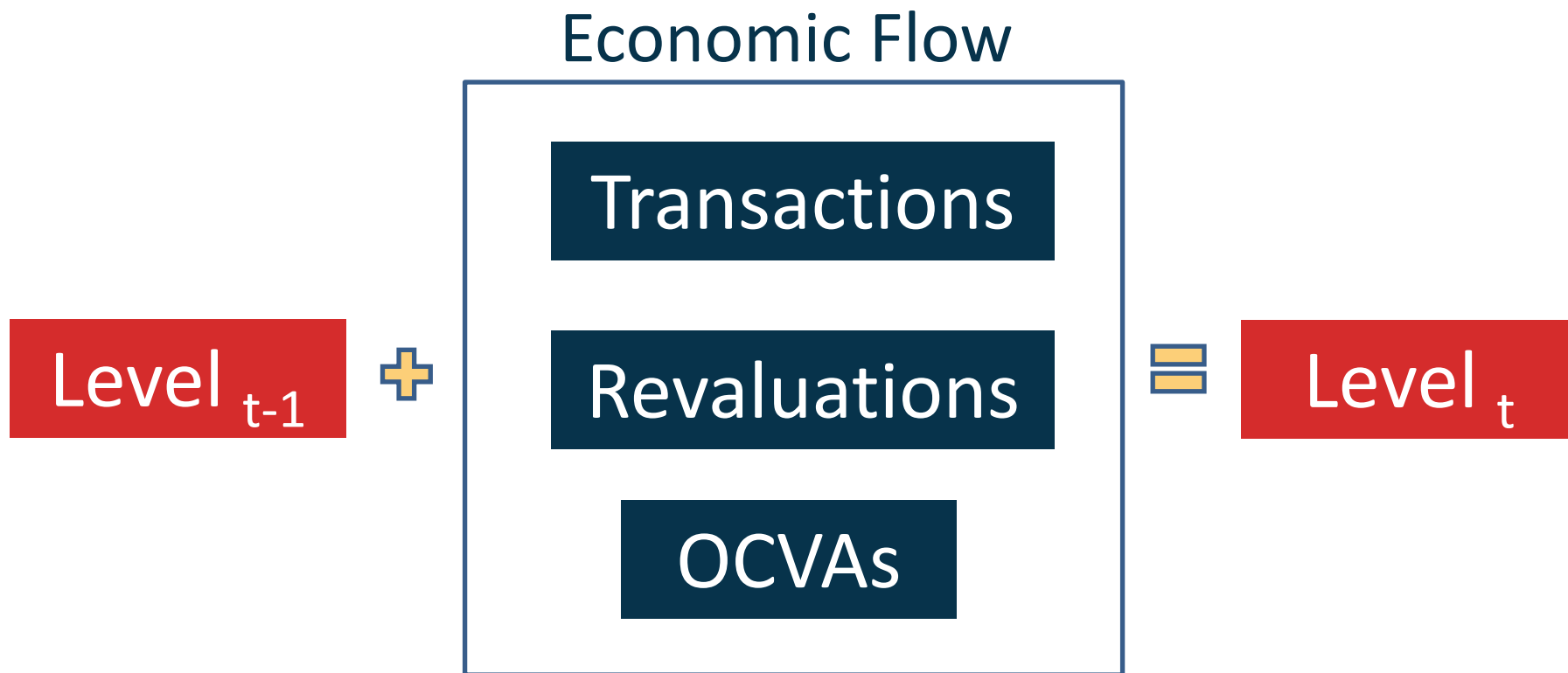
Administrative

- Supervisory data
- Tax filings

Private Sector

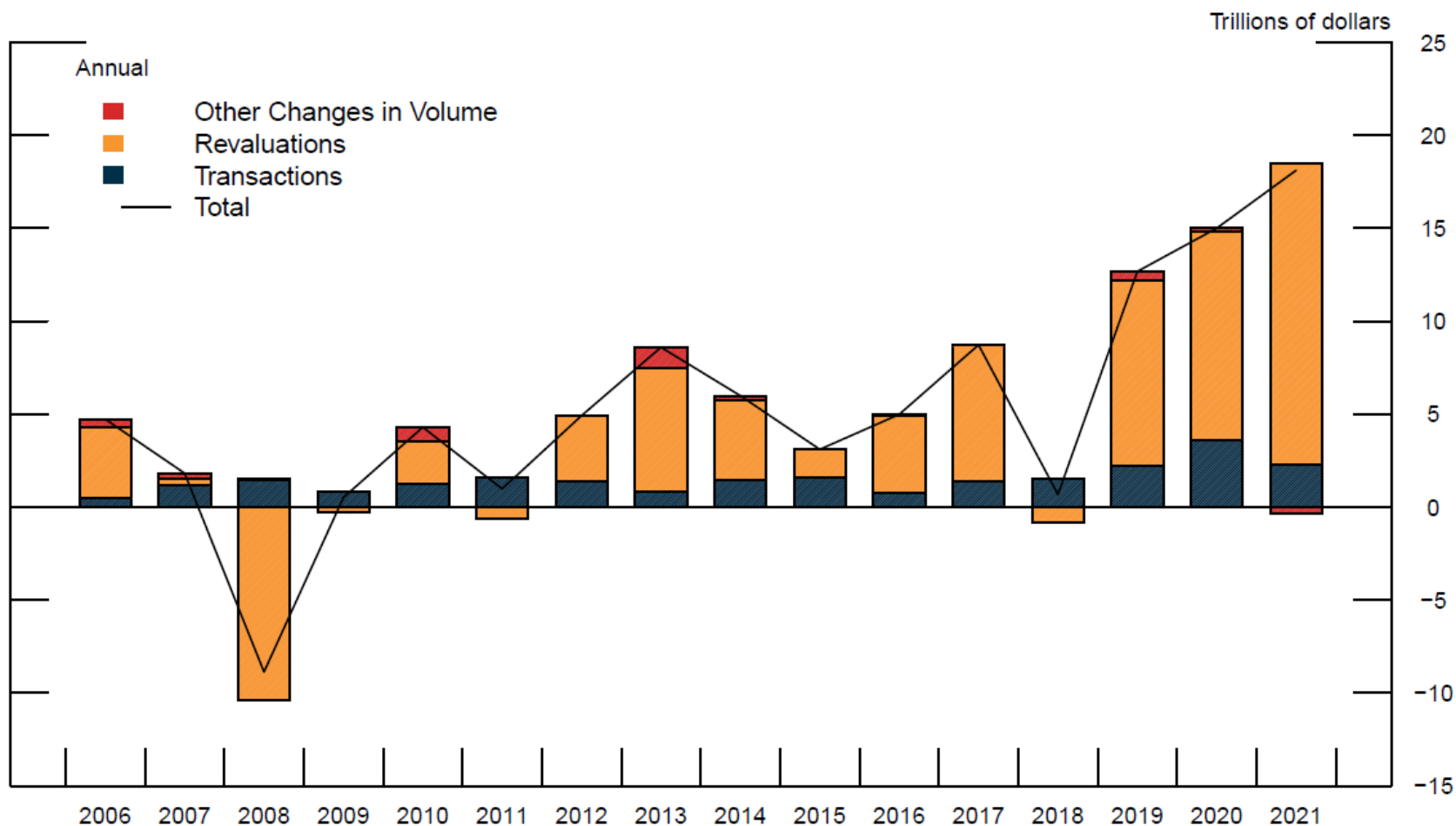
- Trade associations
- Market data

Structure: Economic Flow



Structure: Economic Flow Components

Change in Household Net Worth by Economic Flow Component



Source: Financial Accounts of the United States, June 9, 2022.

Structure: Transactions Matrix

- Overarching framework of Financial Accounts
- **Sources of funds = Uses of Funds**
 - Closed system
 - one sector's source of funds is another sector's use of funds
- Quadruple entry accounting
 - 2 sets of entries recorded for each transaction
 - 2 sectors and two instruments each
- Statistical discrepancies are recorded

Structure: Simplified Transaction Matrix, Sources and Uses of Funds

Transaction Matrix - 2021	Households and Nonprofits		Nonfinancial Business		Governments		Financial Business		Rest of the World		All Sectors		Instrument Discrepancy
	U	S	U	S	U	S	U	S	U	S	U	S	
1. Gross saving less net capital transfers		4,919		3,053		-1898		441		835		7,350	
2. Gross investment (3 plus 4)	4,327		3,105		-1736		779		464		6,938		442
3. Capital expenditures	2,998		2,682		812		327		0		6,818		532
4. Net lending/borrowing (5 less 6)	1,328		423		-2,548		452		465		120		-120
5. Net acquisition of financial assets	2,568		1,626		-681		7,535		1701		12,749		
6. Net increase in liabilities & equity		1240		1,202		1,867		7,083		1237		12,629	
7. Sector discrepancies (1 less 2)	592		-52		-162		-338		370		412		412

Structure: Simplified Transaction Matrix, Sources and Uses of Funds

Transaction Matrix - 2021	Households and Nonprofits		Nonfinancial Business		Governments		Financial Business		Rest of the World		All Sectors		Instrument Discrepancy
	U	S	U	S	U	S	U	S	U	S	U	S	
1. Gross saving less net capital transfers		4,919		3,053		-1898		441		835		7,350	
2. Gross investment (3 plus 4)	4,327		3,105		-1736		779		464		6,938		442
3. Capital expenditures	2,998		2,682		812		327		0		6,818		532
4. Net lending/borrowing (5 less 6)	1,328		423		-2,548		452		465		120		-120
5. Net acquisition of financial assets	2,568		1,626		-681		7,535		1701		12,749		
6. Net increase in liabilities & equity		1240		1,202		1,867		7,083		1237		12,629	
7. Sector discrepancies (1 less 2)	592		-52		-162		-338		370		412		412

Structure: Simplified Transaction Matrix, Sources and Uses of Funds

Transaction Matrix - 2021	Households and Nonprofits		Nonfinancial Business		Governments		Financial Business		Rest of the World		All Sectors		Instrument Discrepancy
	U	S	U	S	U	S	U	S	U	S	U	S	
1. Gross saving less net capital transfers		4,919		3,053		-1898		441		835		7,350	
2. Gross investment (3 plus 4)	4,327		4,105		-1736		779		464		6,938		442
3. Capital expenditures	2,998		2,682		812		327		0		6,818		532
4. Net lending/borrowing (5 less 6)	1,328		423		-2,548		452		465		120		-120
5. Net acquisition of financial assets	2,568		2,626		-681		7,535		1701		12,749		
6. Net increase in liabilities & equity		1240		1,202		1,867		7,083		1237		12,629	
7. Sector discrepancies (1 less 2)	592		-52		-162		-338		370		412		412

Structure: Simplified Transaction Matrix, Sources and Uses of Funds

Transaction Matrix - 2021	Households and Nonprofits		Nonfinancial Business		Governments		Financial Business		Rest of the World		All Sectors		Instrument Discrepancy
	U	S	U	S	U	S	U	S	U	S	U	S	
1. Gross saving less net capital transfers		4,919		3,053		-1898		441		835		7,359	
2. Gross investment (3 plus 4)	4,327		3,105		-1736		779		464		6,938		442
3. Capital expenditures	2,998		2,682		812		327		0		6,818		532
4. Net lending/borrowing (5 less 6)	1,328		423		-2,548		452		465		120		-120
5. Net acquisition of financial assets	2,568		1,626		-681		7,535		1701		12,749		
6. Net increase in liabilities & equity		1,240		1,202		1,867		7,083		1,237		12,629	
7. Sector discrepancies (1 less 2)	592		-52		-162		-338		370		412		412

Structure: Balance Sheets

Title	Balance Sheet		Change in Net Worth	
	Table	Page	Table	Page
Balance Sheet and Change in Net Worth				
Households and Nonprofit Organizations	B.101	138	R.101	141
Nonfinancial Corporate Business	B.103	139	R.103	142
Nonfinancial Noncorporate Business	B.104	140	R.104	143

Title	Table	Page
Supplementary Tables		
Balance Sheet of Households	B.101.h	144
Balance Sheet of Nonprofit Organizations	B.101.n	145
Balance Sheet of Households and Nonprofit Organizations with Debt and Equity Holdings Detail	B.101.e	146
Balance Sheet of Domestic Hedge Funds	B.101.f	147

Structure: Balance Sheets

B.101 Balance Sheet of Households and Nonprofit Organizations (Simplified)

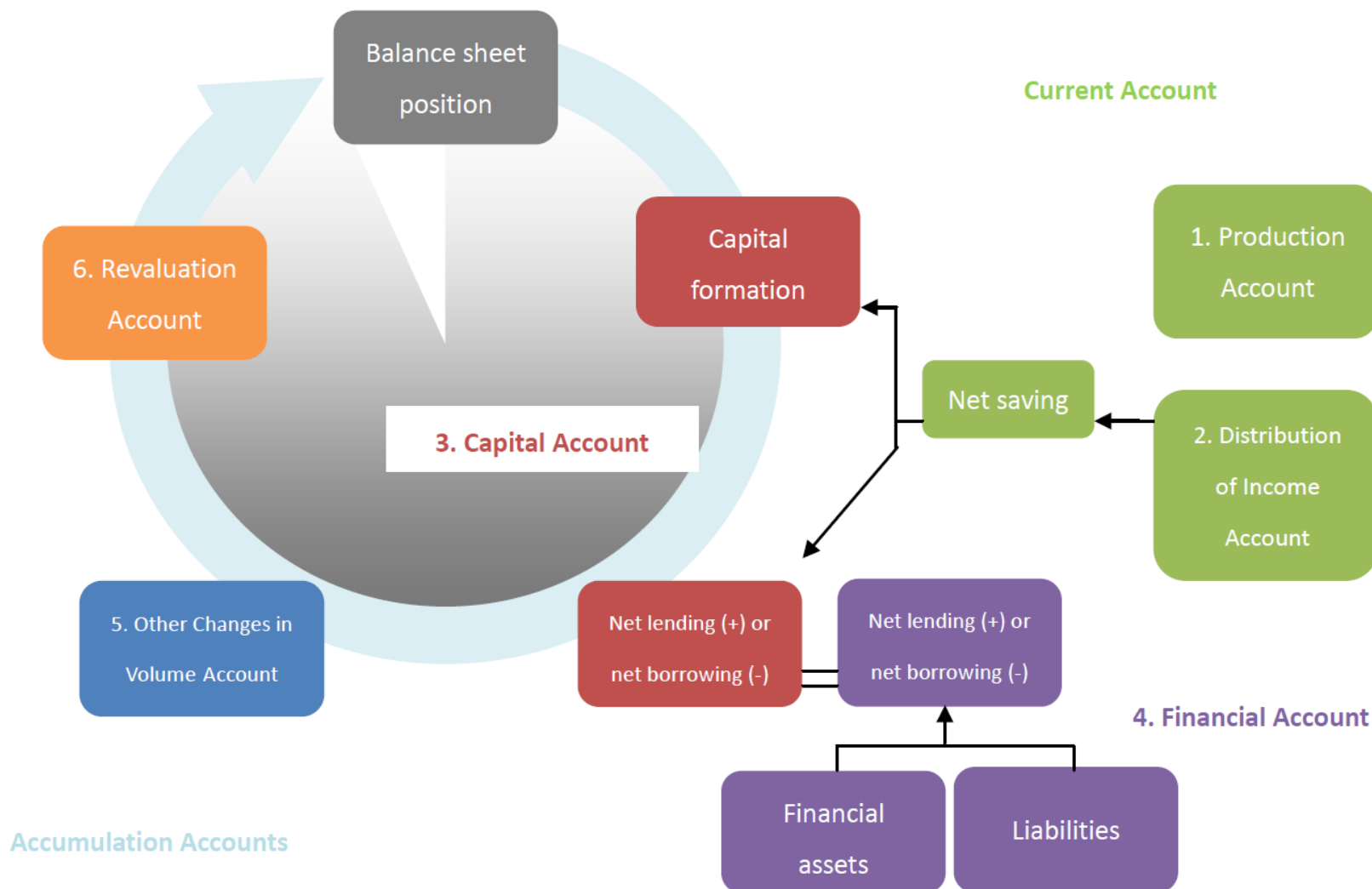
Billions of dollars; amounts outstanding end of period, not seasonally adjusted

			2018	2019	2020	2021	2021		2022		
							Q1	Q2	Q3	Q4	Q1
1	FL152000005	Assets	120029.5	133202.5	148825.3	168176.7	153891.7	159747.2	162932.0	168176.7	167916.8
2	LM152010005	Nonfinancial assets	37893.0	39900.5	43523.1	50454.5	44945.0	46880.1	48651.3	50454.5	52408.6
3	FL154090005	Financial assets	82136.5	93302.0	105302.2	117722.1	108946.6	112867.1	114280.7	117722.1	115508.2
4	FL154000005	Currency and deposits	10475.5	11087.1	13604.9	15488.3	14488.2	14703.8	14953.6	15488.3	15784.4
5	LM154022005	Debt securities	4251.4	4533.4	4222.1	2719.9	3627.3	3064.7	3181.2	2719.9	2961.0
6	FL154023005	Loans	1115.3	1148.0	1261.2	1351.3	1272.5	1287.2	1336.5	1351.3	1482.1
7	FL153081005	Equity and investment fund shares	37313.5	45242.2	52891.4	62827.0	55817.7	59278.0	60149.8	62827.0	60516.9
8	FL163096005	Trade receivables	263.7	271.3	313.1	296.2	309.8	304.2	299.4	296.2	294.6
9	FL153052005	Insurance and pension schemes	28717.1	31020.0	33009.5	35039.4	33431.2	34229.3	34360.2	35039.4	34469.2
10	FL154190005	Liabilities	15998.6	16497.1	17117.8	18353.7	17318.3	17660.4	17968.1	18353.7	18637.7
11	FL163162003	Debt securities (municipal securities)	214.9	212.0	202.0	200.3	202.6	202.5	201.3	200.3	202.3
12	FL154123005	Loans	15386.1	15879.2	16503.0	17732.3	16699.0	17040.4	17347.6	17732.3	18010.8
13	FL163170005	Trade payables	362.6	369.5	376.3	383.0	378.0	379.7	381.3	383.0	384.7
14	FL543077073	Deferred and unpaid life insurance premiums	35.0	36.5	36.6	38.1	38.7	37.9	37.9	38.1	39.8
15	FL152090005	Net worth	104030.9	116705.3	131707.4	149823.0	136573.4	142086.9	144963.9	149823.0	149279.1
Memo:											
16	FL893131573	Assets held in IRAs	9135.0	10949.0	12333.0	13913.0	12695.0	13396.0	13336.0	13913.0	ND
17	FL154023205	Assets held in 529 college plans	311.3	371.4	425.3	480.2	438.4	464.3	458.6	480.2	457.7
18	FA156012005	Disposable personal income (DPI) (SAAR)	15629.7	16219.3	17432.0	18507.6	19455.3	18137.4	18182.7	18255.1	18247.6
19	FL152090006	Net worth/DPI (percent) (line 15/line 18)	665.60	719.55	755.55	809.52	701.99	783.39	797.26	820.72	818.07

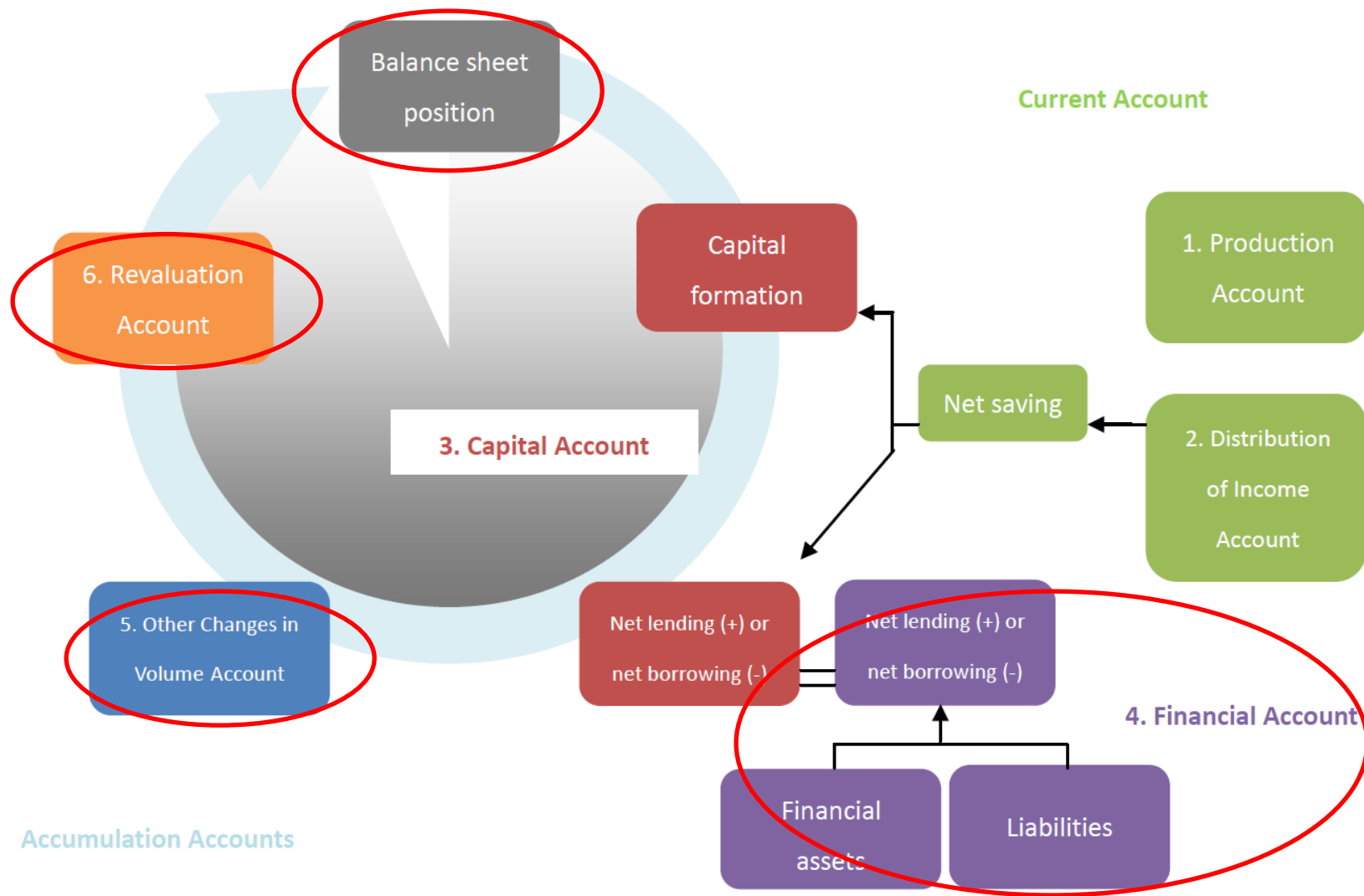
IMA: Integrated Macroeconomic Accounts

- Joint between Bureau of Economic Analysis (BEA) and the Federal Reserve Board
- Consistent with System of National Accounts (SNA 2008) international guidelines
- Full sequence of accounts for 7 sectors and 5 financial subsectors
- Shows relationship between nonfinancial accounts (NIPA) and financial accounts (FA)
 - BEA National Income and Product Accounts (NIPA)

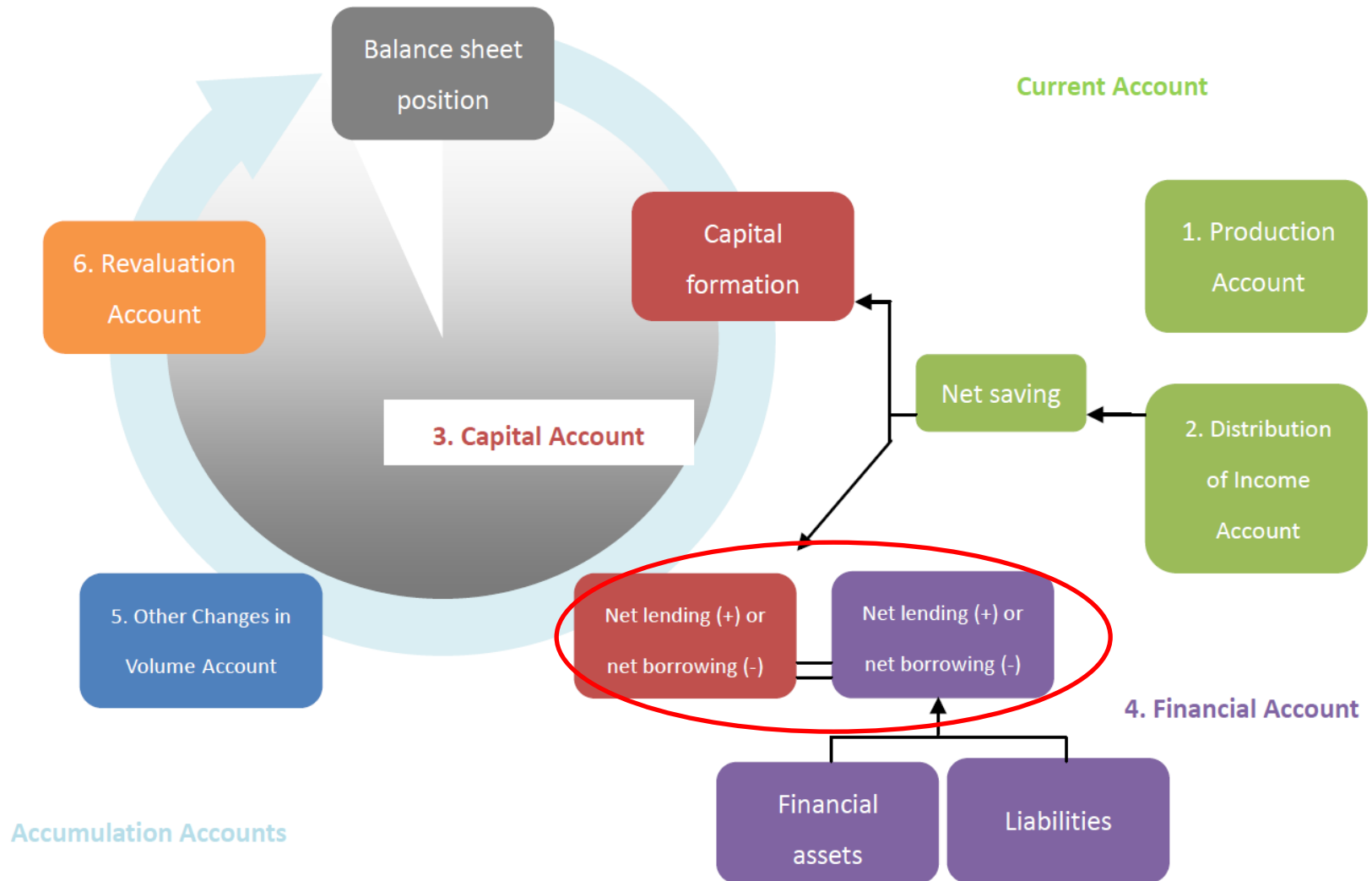
IMA: Sequence of Accounts



IMA: Sequence of Accounts

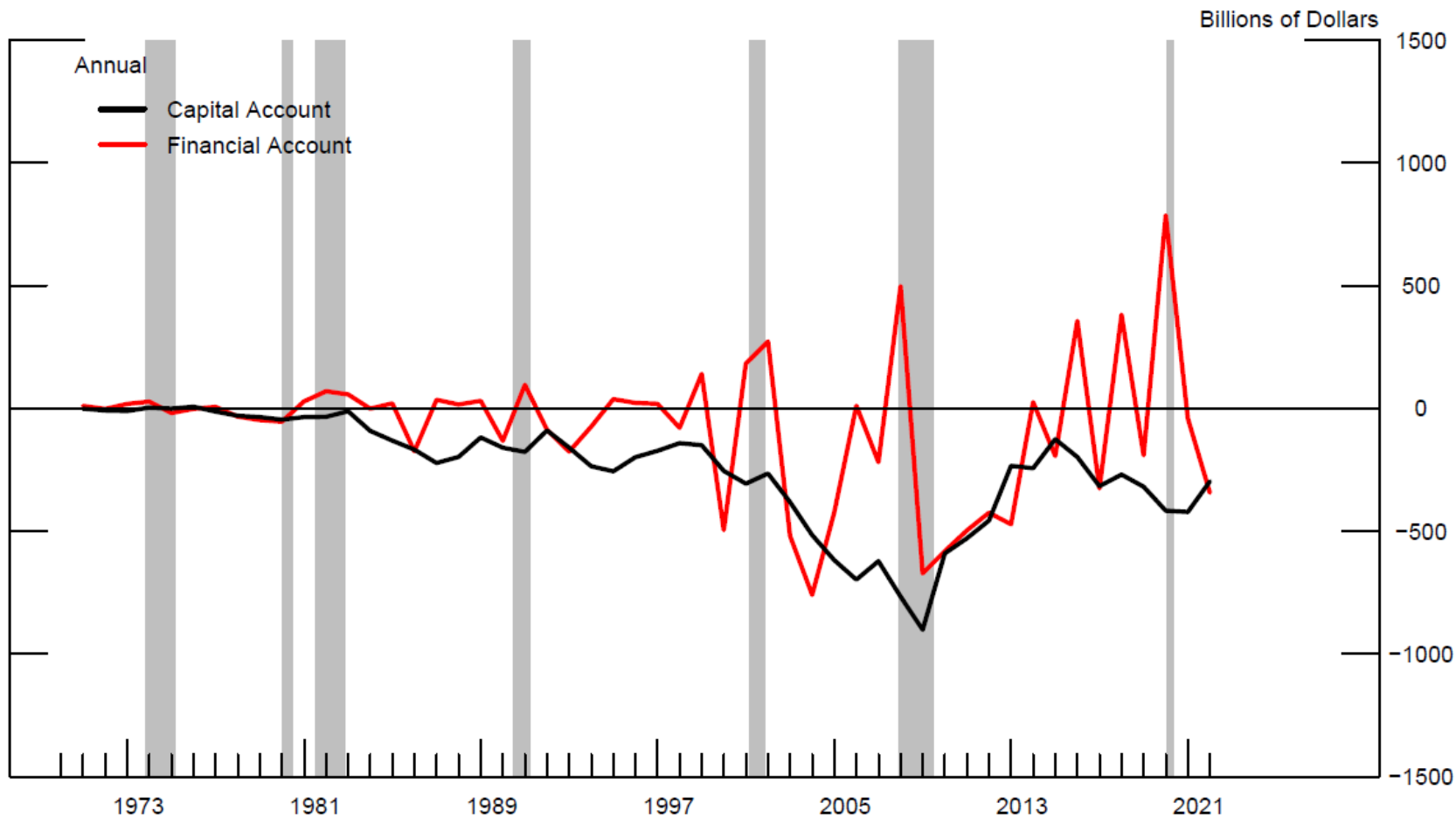


IMA: Net Lending (+) or Net Borrowing (-)



IMA: Net Lending (+) or Net Borrowing (-)

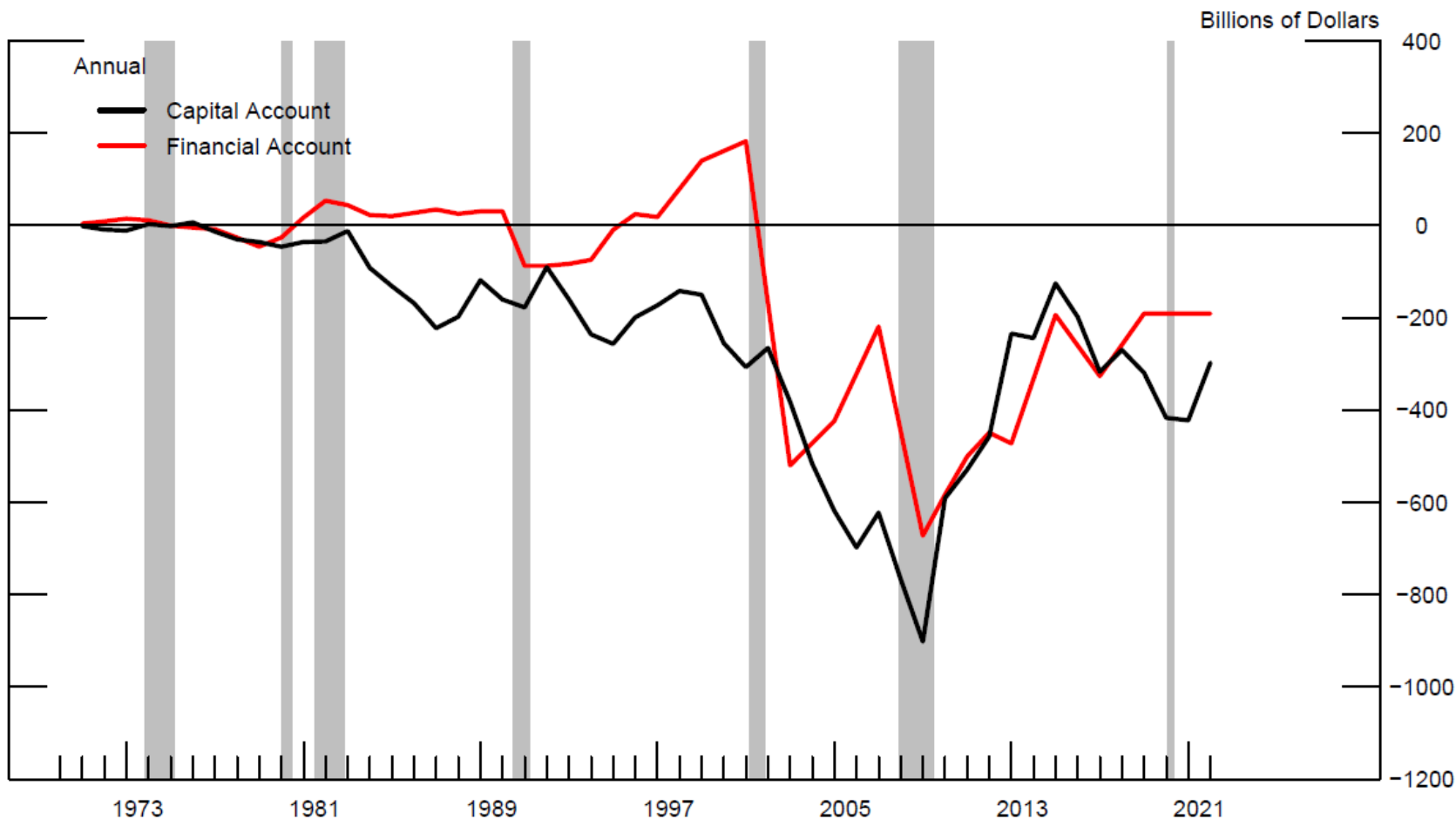
S.2.A Total Economy Net Lending (+) or Net Borrowing (-) in the Capital and Financial Accounts



Source: Financial Accounts of the United States, June 9, 2022.

IMA: Net Lending (+) or Net Borrowing (-)

S.2.A Total Economy Net Lending (+) or Net Borrowing (-) in the Capital and Financial Accounts



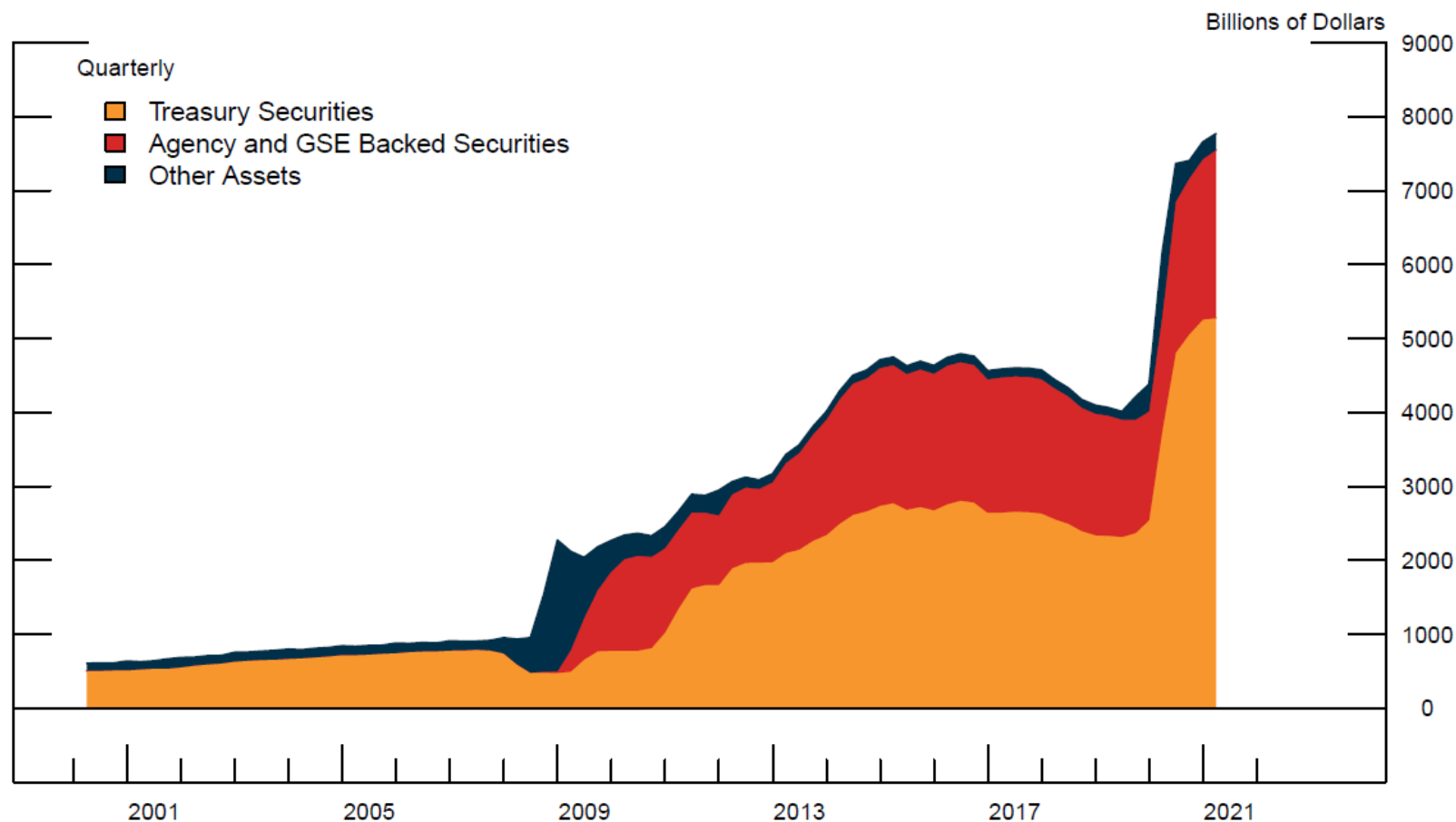
Source: Financial Accounts of the United States, June 9, 2022.

Uses of the Financial Accounts

- Measure the acquisition of physical and financial assets throughout the U.S. economy
- Track the sources and uses of funds
- Record net volume of transactions in financial instruments.
- Record the role of financial intermediaries in transferring funds between sectors
- Long time series provide a means of analyzing the behavior of sectors and development of instruments business cycles

Measure Acquisition of Assets/Liabilities

Monetary Authority Financial Assets



Source: Financial Accounts of the United States, June 10, 2021.

Other assets include U.S. official reserve assets, SDR certificates, Treasury currency, loans, security repurchase agreements, reciprocal agreements, reciprocal current arrangements (swap lines) with foreign central banks, and corporate equities.

Track Sources and Uses of Funds

Z.1, June 9, 2022

Financial Accounts Matrix--Transactions for 2021

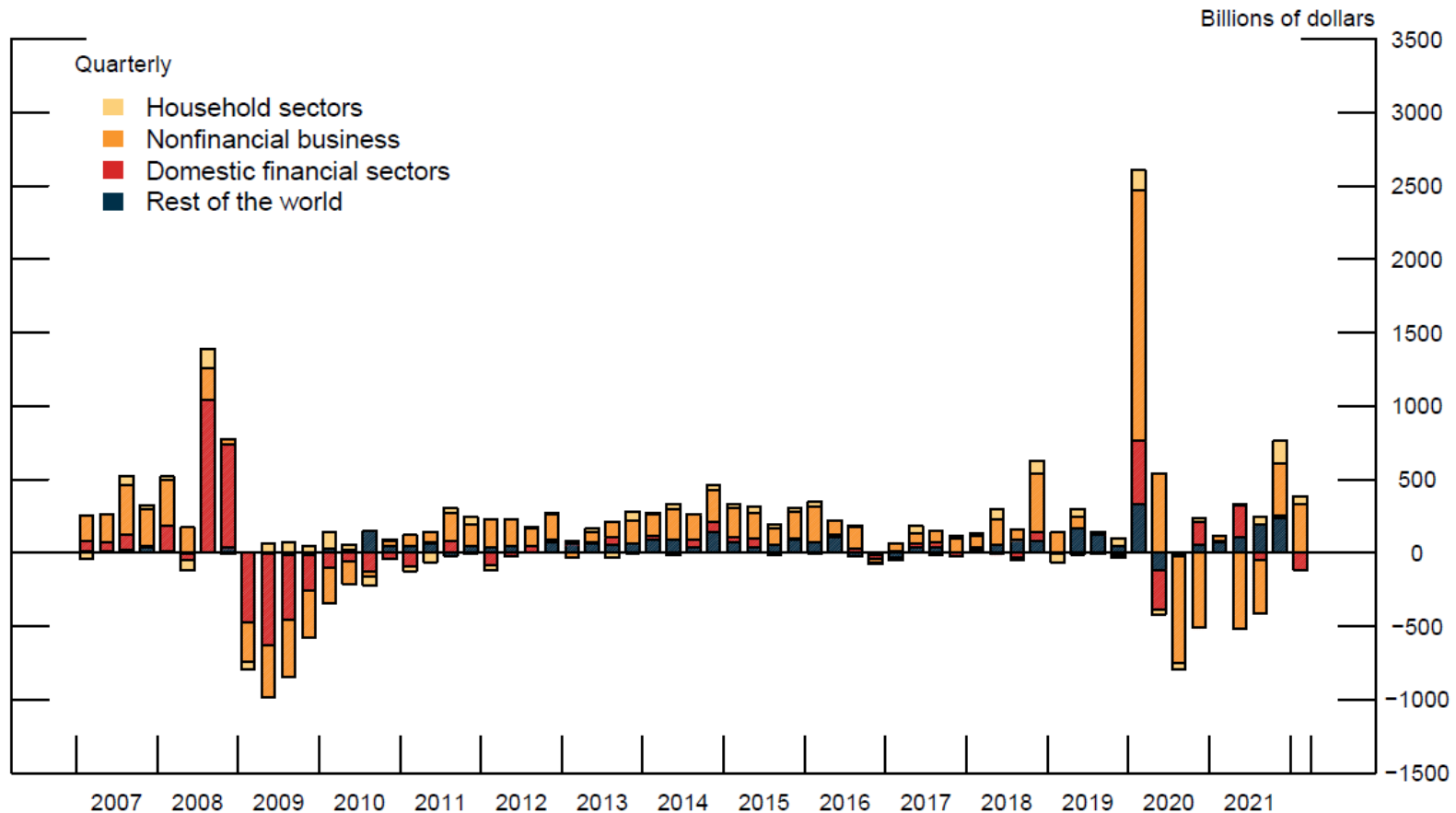
(Billions of dollars; seasonally adjusted)

	Households and Nonprofit Organizations		Nonfinancial Business		Federal Government		State and Local Governments		Domestic Nonfinancial Sectors		Domestic Financial Sectors		Rest of the World		All Sectors		Instrument Discrepancy
	U (1)	S (2)	U (3)	S (4)	U (5)	S (6)	U (7)	S (8)	U (9)	S (10)	U (11)	S (12)	U (13)	S (14)	U (15)	S (16)	
1 Gross saving less net cap. transfers	--	4919.0	--	3053.2	--	-2585.1	--	687.2	--	6074.2	--	441.0	--	834.7	--	7350.0	--
2 Capital consumption	--	2013.1	--	2203.2	--	320.3	--	325.2	--	4861.8	--	292.7	--	--	--	5154.6	--
3 Net saving (1 less 2)	--	2905.9	--	850.0	--	-2905.5	--	361.9	--	1212.4	--	148.3	--	834.7	--	2195.4	--
4 Gross investment (5 plus 11)	4326.7	--	3104.8	--	-2376.9	--	640.7	--	5695.2	--	778.8	--	464.4	--	6938.4	--	411.6
5 Capital expenditures	2998.4	--	2681.6	--	350.8	--	460.7	--	6491.5	--	326.8	--	-0.1	--	6818.2	--	531.8
6 Consumer durables	1895.9	--	--	--	--	--	--	--	1895.9	--	--	--	--	--	1895.9	--	--
7 Residential	876.4	--	202.2	--	0.8	--	9.2	--	1088.6	--	7.6	--	--	--	1096.2	--	--
8 Nonresidential	241.3	--	2493.2	--	359.2	--	433.1	--	3526.8	--	319.2	--	--	--	3845.9	--	--
9 Inventory change	--	--	-19.9	--	--	--	--	--	-19.9	--	--	--	--	--	-19.9	--	--
10 Nonproduced nonfinancial assets	-15.2	--	6.1	--	-9.2	--	18.4	--	0.1	--	--	--	-0.1	--	--	--	--
11 Net lending (+) or net borrowing (-)	1328.3	--	423.2	--	-2727.7	--	180.0	--	-796.3	--	452.0	--	464.5	--	120.2	--	-120.2
12 Net acquisition of financial assets	2568.3	--	1625.6	--	-1238.0	--	557.0	--	3512.9	--	7534.8	--	1701.1	--	12748.8	--	--
13 Net increase in liabilities and equity	--	1240.0	--	1202.4	--	1489.7	--	377.0	--	4309.2	--	7082.8	--	1236.5	--	12628.6	--
14 U.S. official reserve assets	--	--	--	--	114.1	112.8	--	--	114.1	112.8	-0.1	--	112.8	114.0	226.8	226.8	--
15 SDR certificates	--	--	--	--	--	0.0	--	--	--	0.0	--	--	--	--	0.0	0.0	--
16 Treasury currency	--	--	--	--	--	-0.1	--	--	--	-0.1	0.4	--	--	--	0.4	-0.1	-0.5
17 Foreign deposits	-1.9	--	19.5	--	--	--	--	--	17.6	--	-2.2	--	--	22.5	15.4	22.5	7.1
18 Interbank claims	--	--	--	--	--	--	--	--	--	609.0	670.9	44.9	--	--	653.9	670.9	17.0
19 Checkable dep. and currency	1085.2	--	234.4	--	-1323.9	--	115.7	--	111.5	--	56.9	230.7	61.7	--	230.1	230.7	0.6
20 Time and savings deposits	744.6	--	114.7	--	1.4	--	-31.2	--	829.4	--	-124.0	758.2	52.8	--	758.2	758.2	--
21 Money market fund shares	101.2	--	103.3	--	--	--	15.3	--	219.9	--	207.9	439.5	11.7	--	439.5	439.5	--
22 Fed. funds and security repos	--	--	-7.3	--	--	--	10.0	--	2.7	--	1113.8	1732.5	281.8	-109.8	1398.4	1622.7	224.4
23 Debt securities	-803.0	-1.7	2.9	195.8	0.0	1683.4	356.6	66.9	-443.5	1944.4	3059.6	845.5	570.0	396.2	3186.1	3186.1	--
24 Open market paper	--	--	-2.9	6.0	--	--	4.0	--	1.1	6.0	9.1	-1.9	17.0	23.1	27.3	27.3	--
25 Treasury securities	-596.8	--	4.9	--	--	1683.8	393.0	--	-198.9	1683.8	1338.7	--	544.1	--	1683.8	1683.8	--
26 Agency- and GSE-backed sec.	60.4	--	0.2	--	0.0	-0.4	-32.7	--	27.8	-0.4	632.8	612.9	-48.1	--	612.5	612.5	--
27 Municipal securities	-103.7	-1.7	0.8	10.9	--	--	3.8	66.9	-99.2	76.1	174.0	--	1.3	--	76.1	76.1	--
28 Corporate and fgn. bonds	-162.9	--	--	178.8	0.0	--	-11.5	--	-174.4	178.8	905.0	234.5	55.8	373.1	786.3	786.3	--
29 Loans	90.1	1233.5	10.5	638.5	177.5	0.0	3.3	0.5	281.3	1872.5	1774.3	156.5	122.1	148.6	2177.7	2177.7	--
30 Depository inst. loans n.e.c.	--	53.1	--	-123.8	--	--	--	--	--	-70.6	130.1	49.9	--	150.8	130.1	130.1	--
31 Other loans and advances	95.8	95.0	--	361.7	116.1	0.0	--	0.5	211.9	457.1	236.4	115.4	122.1	-2.1	570.4	570.4	--
32 Mortgages	-4.7	838.4	10.4	400.6	6.0	0.0	3.3	--	15.1	1239.0	1215.1	-8.8	--	--	1230.2	1230.2	--
33 Consumer credit	-1.1	247.0	0.0	--	55.4	--	--	--	54.3	247.0	192.7	--	--	--	247.0	247.0	--
34 Corporate equities	615.0	--	-116.1	-614.9	-0.0	--	-3.4	--	495.5	-614.9	113.0	843.6	-226.0	153.9	382.6	382.6	--
35 Mutual fund shares	345.3	--	10.6	--	--	--	1.2	--	357.1	--	-340.5	222.4	205.8	--	222.4	222.4	--
36 Trade credit	6.9	6.8	634.7	550.0	10.7	67.1	39.9	52.6	692.2	676.6	35.8	89.7	80.7	3.3	808.7	769.6	-39.1
37 Life insurance reserves	31.0	--	--	--	--	0.3	--	--	31.0	0.3	39.5	48.0	-1.4	20.7	69.1	69.1	--
38 Pension entitlements	295.5	--	--	--	--	--	--	--	295.5	--	88.5	340.0	-1.6	42.4	382.4	382.4	--
39 Taxes payable	--	--	--	-23.4	-133.6	--	5.0	--	-128.6	-23.4	--	-11.3	--	--	-128.6	-34.7	94.0
40 Equity in noncorp. business	-1.6	--	--	-17.4	--	--	--	--	-1.6	-17.4	--	15.8	--	--	-1.6	-1.6	--
41 U.S. direct investment: debt	--	--	-22.6	--	--	--	--	--	-22.6	--	-4.3	--	--	-26.9	-26.9	-26.9	--
42 U.S. direct investment: equity	--	--	394.0	--	--	--	--	--	394.0	--	66.5	--	--	460.5	460.5	460.5	--
43 Foreign direct investment: debt	--	--	--	-15.1	--	--	--	--	--	-15.1	--	4.2	-10.8	--	-10.8	-10.8	--
44 Foreign direct investment: equity	--	--	--	365.6	--	--	--	--	--	365.6	--	27.2	392.8	--	392.8	392.8	--
45 Miscellaneous	60.1	1.5	246.8	123.1	-84.1	-373.9	44.6	257.0	267.5	7.8	840.6	669.4	3.8	11.1	1111.9	688.2	-423.7
46 Sector discrepancies (1 less 4)	592.3	--	-51.6	--	-208.3	--	46.5	--	379.0	--	-337.7	--	370.3	--	411.6	--	411.6

General Notes: U = use of funds; S = source of funds. Domestic nonfinancial sectors (columns 9 and 10) are households and nonprofit organizations, nonfinancial business, state and local governments, and federal government.

Record Net Change in Volume of Transactions in Financial Instruments

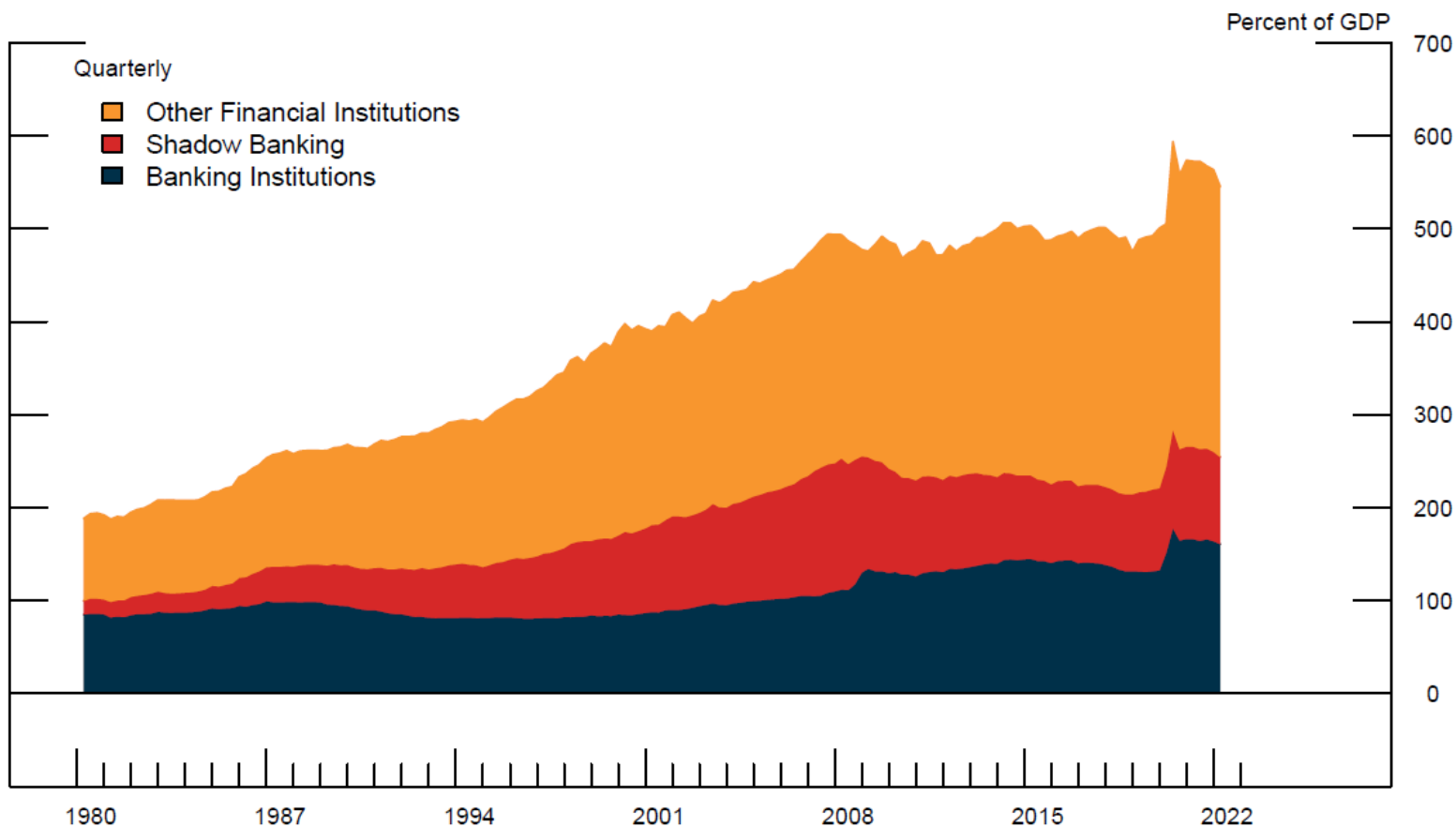
Depository Institution Loans Not Elsewhere Classified Liabilities



Source: Financial Accounts of the United States, June 9, 2022.

Role of Financial Intermediaries

Financial Business Sector Financial Assets

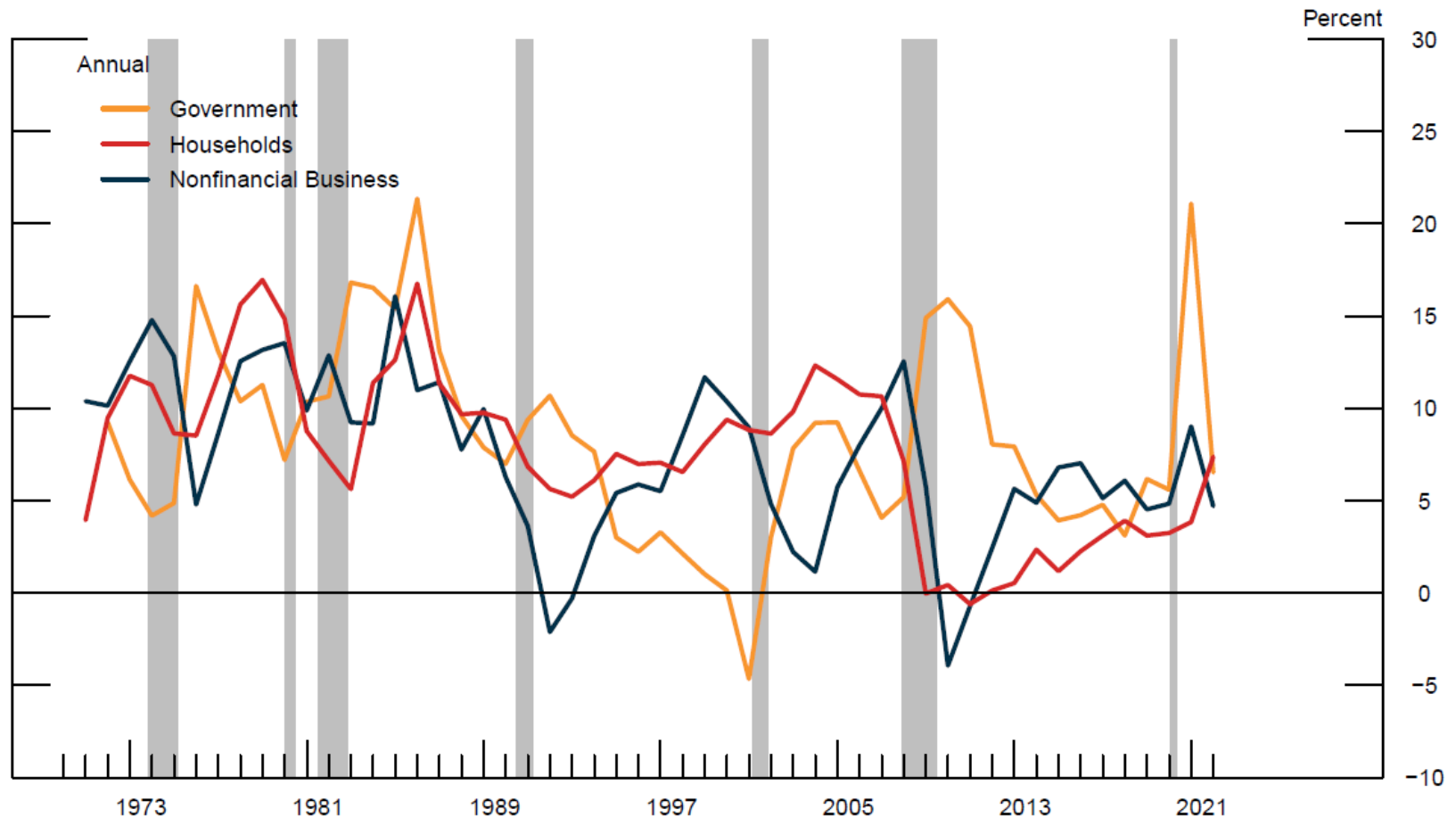


Source: Financial Accounts of the United States, June 9, 2022.

Banking institutions include the monetary authority, private depository institutions, and bank holding companies. Shadow Banking includes money market funds, mortgage REITs, bond funds, finance companies, security brokers and dealers, financial and mortgage guarantors, and ABS issuers

Time series and business cycle trends

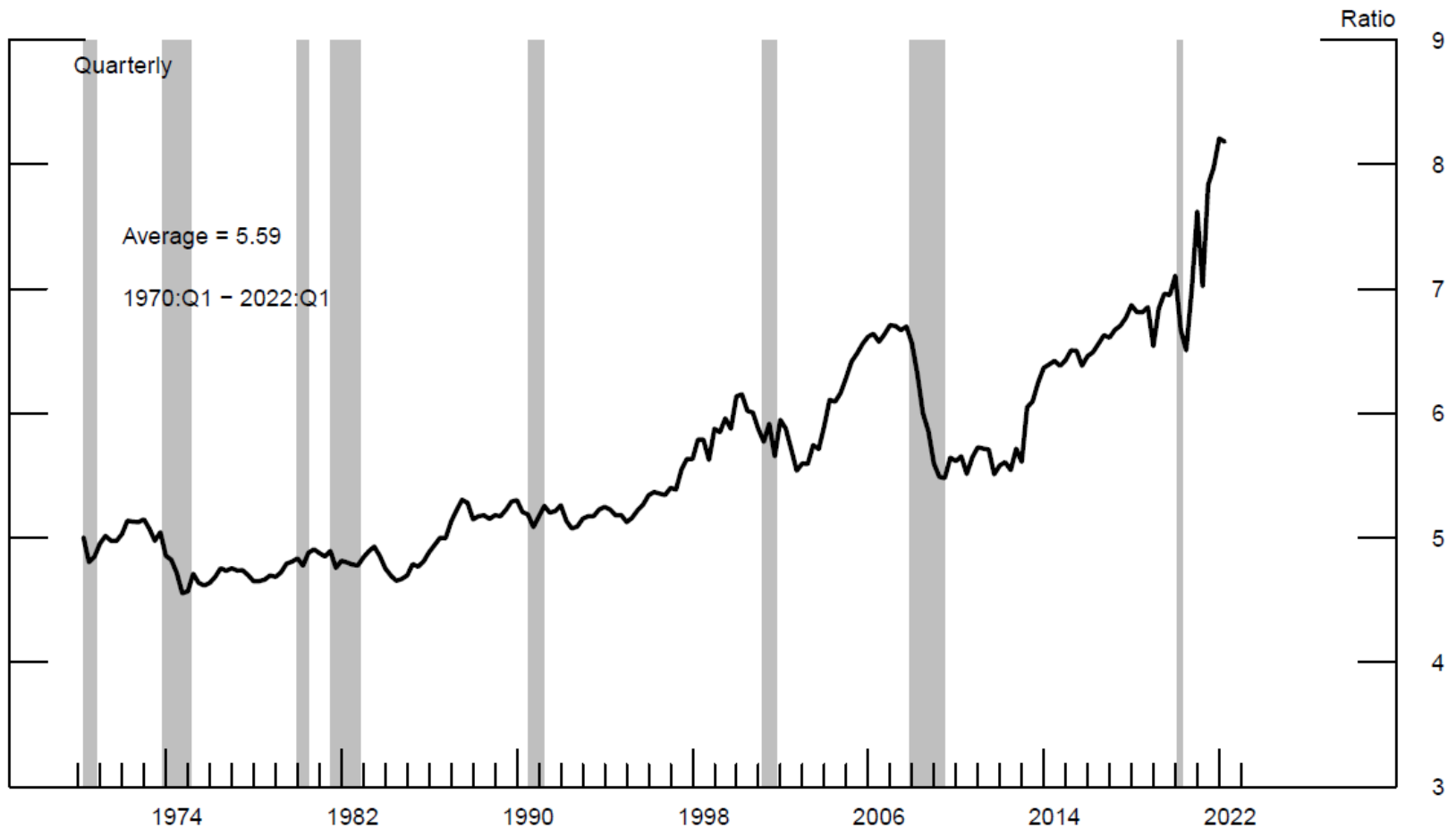
Domestic Nonfinancial Sector Debt Growth



Source: Financial Accounts of the United States, June 9, 2022.

Time series and business cycle trends

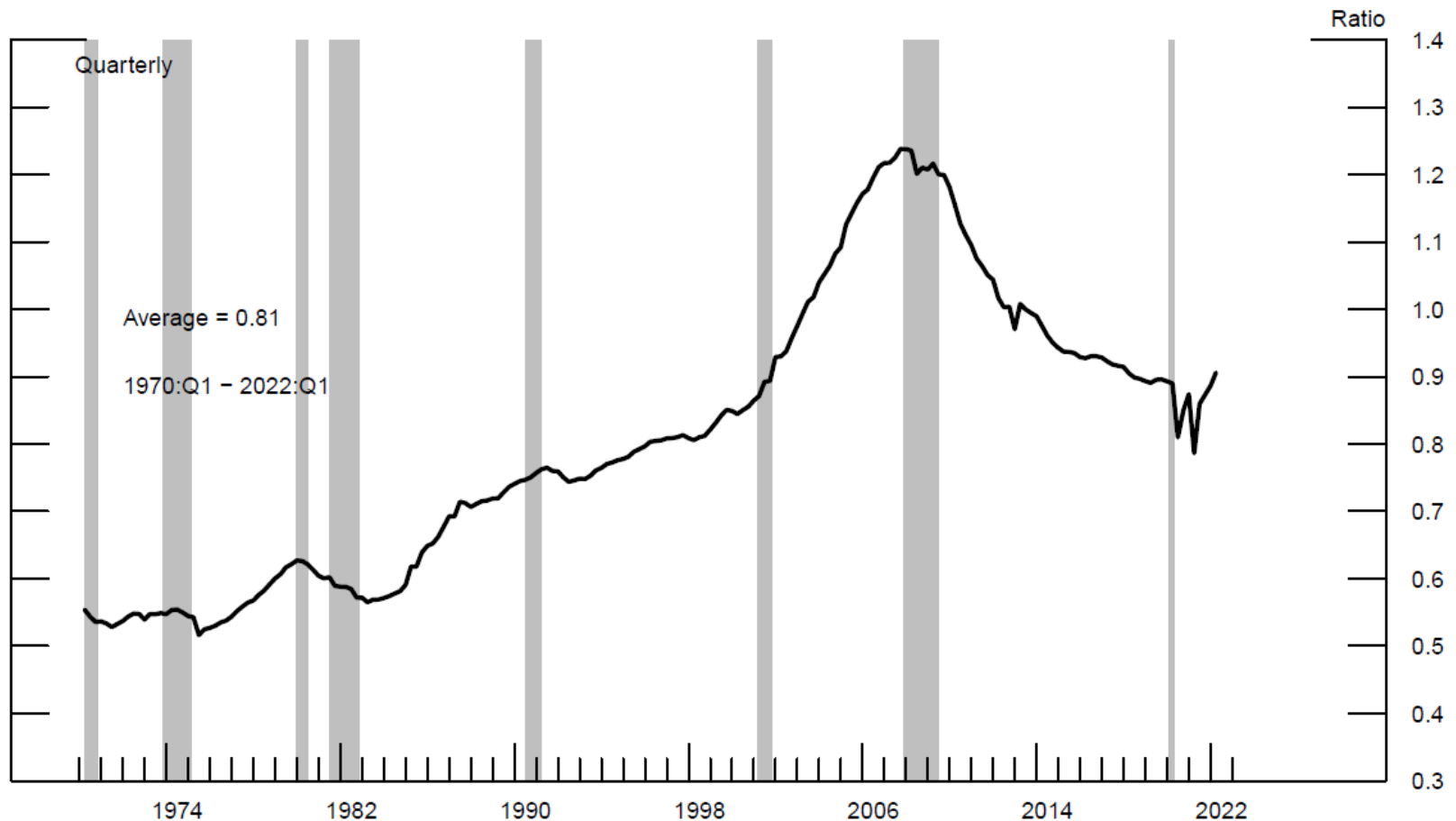
Household Net Worth Relative to Disposable Personal Income



Source: Financial Accounts of the United States, June 9, 2022.

Time series and business cycle trends

Household Debt Relative to Disposable Personal Income



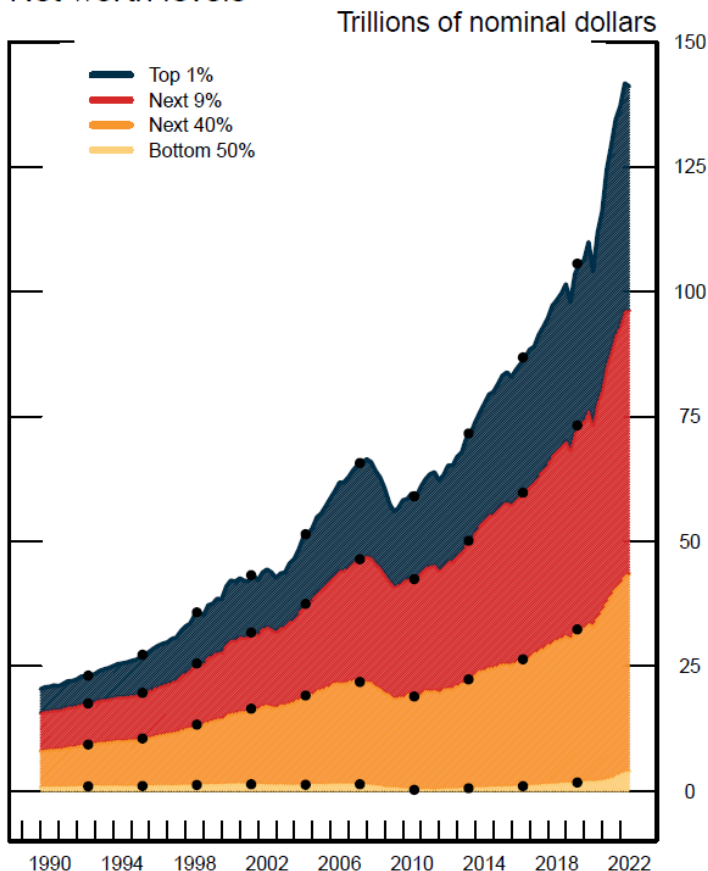
Source: Financial Accounts of the United States, June 9, 2022.

Distributional Financial Accounts (DFA)

- **Goal:** create a Distributional Financial Accounts (DFA), a quarterly data set that shows household wealth by income quintile
- Combines two different source data sets:
 1. **Survey of Consumer Finance (SCF):** a nationally representative micro-level survey of the financial wellbeing of households
 2. **Financial Accounts of the United States (FA):** an integrated macro- level data set that shows a balance sheet for households and nonprofits
- **Method:**
 - Separate nonprofit organizations from FA households
 - Match instrument categories between SCF and FA
 - Apply SCF-based income shares to FA aggregates

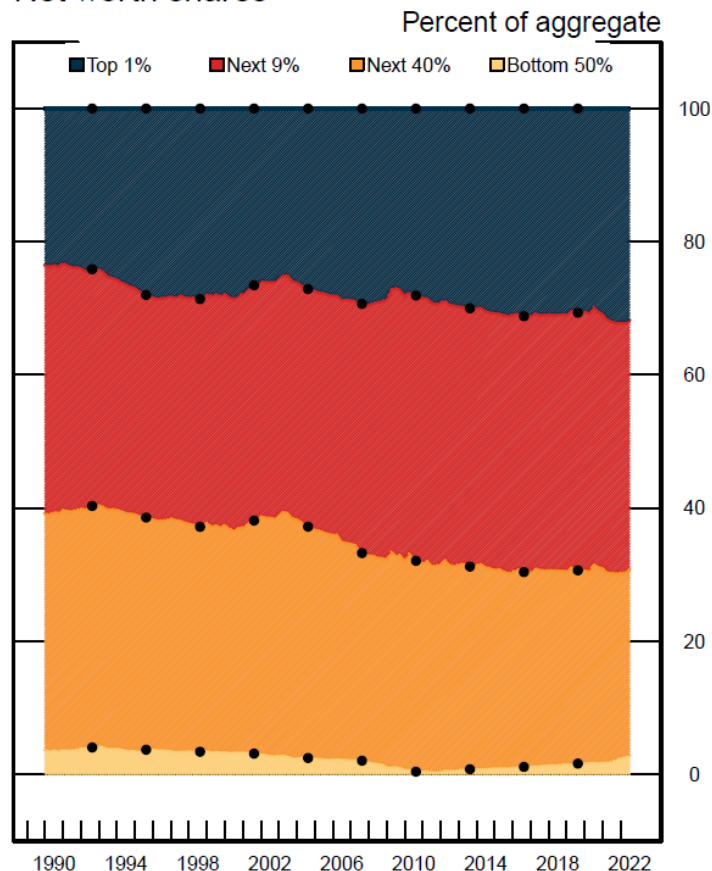
DFA: Household Net Worth (HHNW) by Wealth Percentiles

Net worth levels



*Non-imputed DFA level constructed directly from triennial SCF balance sheet reconciled with the Financial Accounts household only balance sheet.

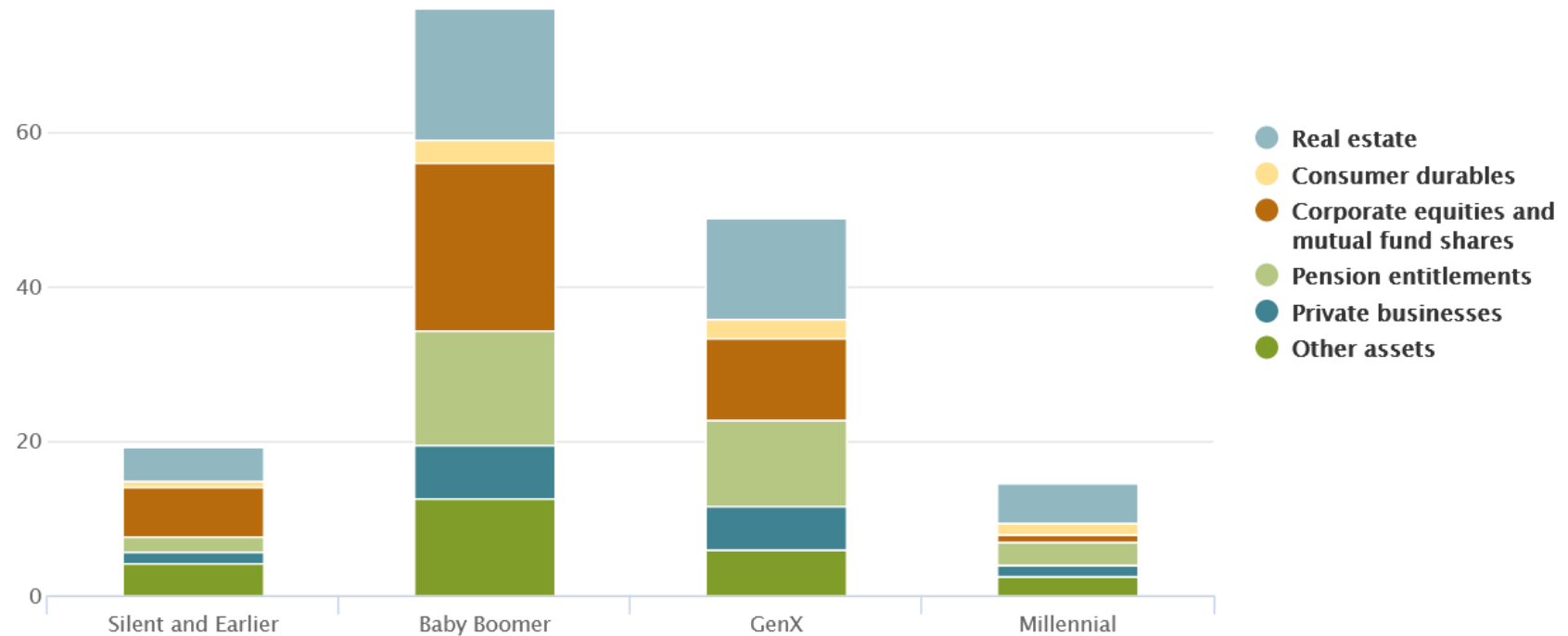
Net worth shares



DFA: Demographic Detail (Generation)

Assets by generation in 2022:Q1

Trillions of Dollars

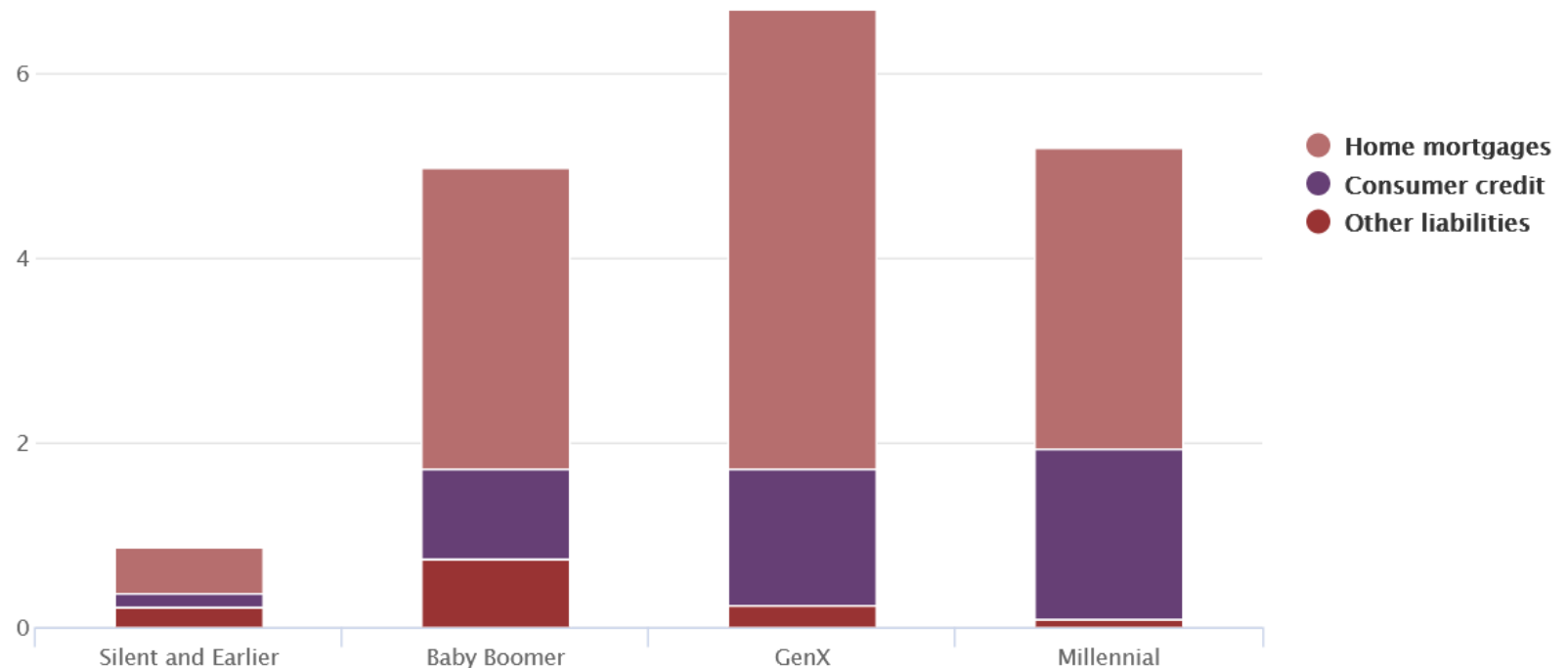


Source: Survey of Consumer Finances and Financial Accounts of the United States

DFA: Demographic Detail (Generation)

Liabilities by generation in 2022:Q1

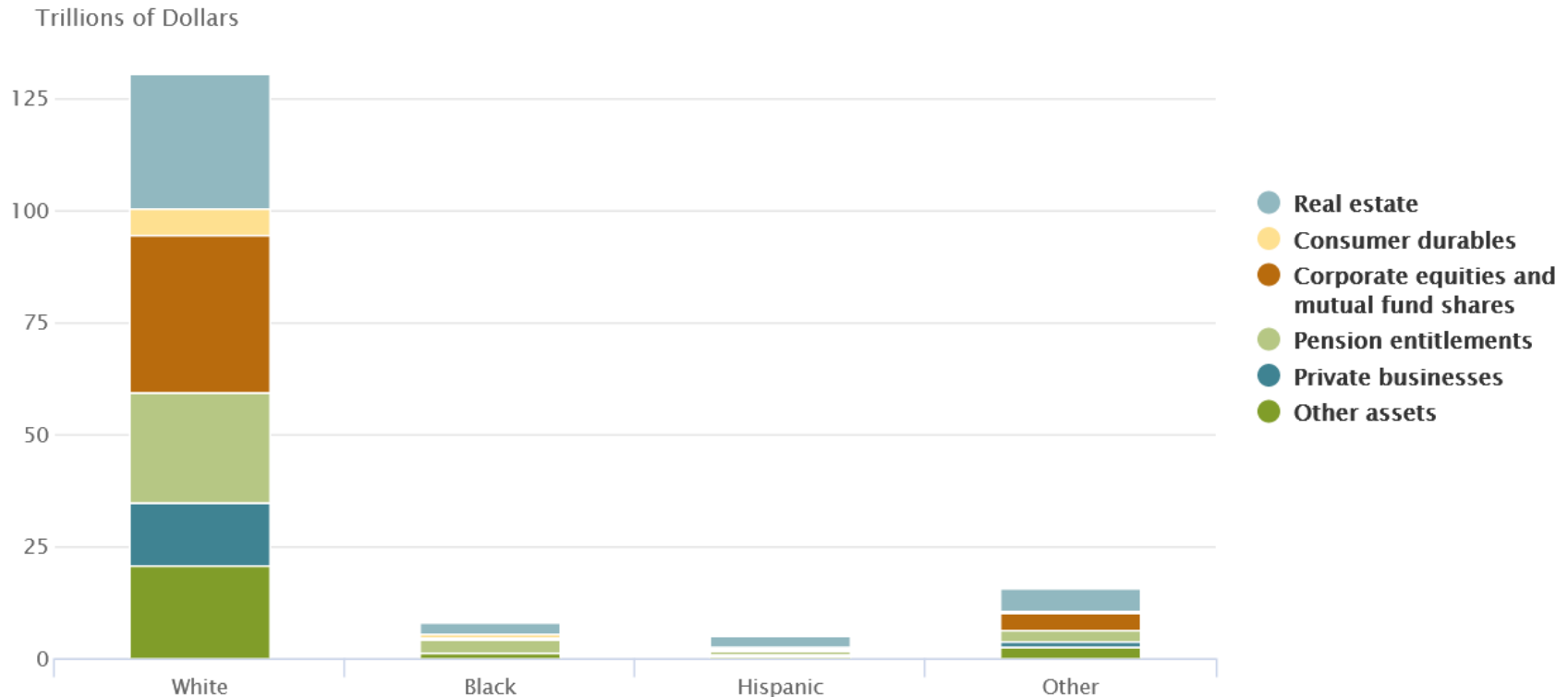
Trillions of Dollars



Source: Survey of Consumer Finances and Financial Accounts of the United States

DFA: Demographic Detail (Race)

Assets by race in 2022:Q1



Source: Survey of Consumer Finances and Financial Accounts of the United States

Online Resources

- **Z.1 Release page:** Current release, past releases, full PDF, data, technical Q&As, announcements
<https://www.federalreserve.gov/releases/z1/current/default.htm>
- **Data Visualization:** Household Balance Sheet from the Z.1 release page (above), Debt-to-Income Ratio and State Pensions from Enhanced Financial Accounts link (below)
- **Financial Accounts Guide:** Series construction and calculation, source data, table descriptions, release highlights, and code changes
<http://www.federalreserve.gov/apps/fof/>
- **FEDS Notes:** short papers by FRB staff, several notes on Financial Accounts topics
<http://www.federalreserve.gov/econresdata/notes/feds-notes/default.html>
- **Data Download Program:** All Z.1 data available for download, customizable
<http://www.federalreserve.gov/datadownload/Choose.aspx?rel=Z.1>
- **Enhanced Financial Accounts** (including DFA):
<http://www.federalreserve.gov/apps/fof/efa/enhanced-financial-accounts.htm>

Thank You

