Distributional Haig-Simons Income Accounts for U.S. Households, 2000-2019

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This paper and the accompanying Excel workbook present the Distributional Comprehensive Household Income Accounts (DCHIAs), an open-access data series of Haig-Simons income for U.S. households, 2000–2019. The series is derived from and comports with publicly available national-accounts data, and is balance-sheet-complete; it fully explains changes in household assets and net worth from year to year and across the two-decade period. A prototype distributional breakdown is provided for all measures and submeasures, by income quintile.

Many U.S. income, wealth, and equality researchers and economic modelers over decades, and over recent years, have expressed wishes for a published data series of "comprehensive" Haig-Simons household income that includes accrued holding gains as income. Comments from two recent papers serve as good examples:

> "The most comprehensive concept of income and consumption is drawn from the suggestions of Haig and Simons, where income represents the capacity to consume without drawing down net worth. Economists have used the following equation as the working definition of Haig-Simons: Income (Y) equals consumption (C) plus the change in net worth (ΔNW). No studies use this definition to the fullest extent, because no household survey has the necessary variables to create a full measure of Haig-Simons income. (Fisher et. al. 2020)

> A long-standing preferred measure of economists is the Haig-Simons concept of economic income, sometimes described as equaling consumption plus the change in net worth and including these income sources. A key feature of this definition of income is the inclusion of annual accrued capital gains or losses adjusted for inflation. ... While the Haig-Simons approach is often considered the preferred measure by economists, actually estimating the distribution of accrued gains is necessarily imprecise because micro data rarely have all the information needed. (Auten 2022)

The first purpose of this paper and the accompanying Excel workbook, downloadable here,[1] is to provide such a "preferred" and open-access time series including complete and transparent derivations of all measures, assembled from publicly available national-accounts data. It's labeled here as the Comprehensive Household Income Accounts, or CHIAs. Notably, it is balance-sheet-complete; the tallied "economic flows"[2] fully explain changes in household-sector balance-sheet wealth: assets and net worth.

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[1] wealth-economics.com/DCHIAs_2.5-Nov-1-2022.xlsx

[2] See Roth for discussion of "economic flows" as that term is used in the Fed's Z.1 report, and Saez & Zucman for discussion of a related term, "true economic income."

All measures are in nominal dollars. Inflation-adjusted series are easily derived from these, as are many sums, differences, changes, and ratios.

The second goal is to provide a prototype distributional breakout of the measures and sub-measures in the CHIAs, by income quintile — here dubbed the Distributional Comprehensive Household Income Accounts, or DCHIAs (*dee CHEE uhs*). This effort is treated as a prototype because while all-household, top-20%, and bottom-80% results show quite good conformance with balance-sheet changes, lower-quintile breakouts show greater percentage discrepancies. (Lower-quintile dollar discrepancies are much smaller because their comparative dollar measures are much smaller.) Nevertheless, the accounting structure provides a framework for straightforwardly plugging in alternative measures or quintile-allocation results, based on different sources and methodologies (discussed in the final section of the paper).

These constructions offer a comprehensive post-facto, backward-looking *descriptive* model of the economy, through the lens of the household sector that sits at the top of the national accounting-ownership pyramid.[3] The series, which are more volatile than typical income measures (e.g. personal income, national income), may prove especially useful for calibrating formulas and parameters in longer-term predictive models, and for policy-focused analysis.

Comprehensive Income and Wealth Accumulation

Haig-Simons income is a quite straightforward derivation in its highest-level conceptual accounting-identity form:

Consumption expenditures + change in net worth

Which equals:

"Primary" income[4] + accrued holding gains from asset-price/valuation changes

In practice, based on national accounts' income derivations and methods, it's also necessary to add "other changes in volume," discussed in more detail below, for the tallied economic flows to equal the changes in balance-sheet assets and net worth.

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[3] Almost all domestic firms' value at current asset-market prices is posted as assets on the household-sector balance sheet. The household sector largely "owns" the firms sector in this accounting sense; the firms sector is a wholly-owned subsidiary. The ownership buck stops at households. This is an asymmetric, one-way ownership relationship. Since 1865, no other sector does or can own (equity shares in) households. Ditto NPISHes, for different reasons. Neither issues equity shares or has owners. Similarly, the unmeasurable "value" of government assets (the judiciary system, Department of Defense, etc.) is undoubtedly at least *revealed* in the market value of household plus NPISH balance-sheet assets — though "through a glass, darkly." The market value of households' financial and nonfinancial assets would presumably be somewhat smaller if those government institutions didn't exist.

[4] The IMAs/SNAs label this as "Net National Income/Balance of primary incomes," reported for each sector.

A collapsed detail of the resulting table illustrates the general approach employed (Figure 1). The presentation structure, the row categories, and their labels draw on both the DPIAs' NIPA-based presentation and the IMAs' balance-sheet-complete structure (plus some bits from the FAs), with some rearrangement and label changes for clarity, simplicity, and logical necessity.

Figure 1. The CHIAs. Detail; columns extend back to 2000.

Household Income Sources and Uses	2018	2019	Sum 2000–19	% of Compr. income
Billions, nominal dollars.				
Sources: comprehensive Haig-Simons income				
Labor + property/ownership + transfers	**17,163**	**28,503**	**310,982**	**100%**
Labor Compensation (earned income)	**10,960**	**11,448**	**164,637**	**53%**
Plus: Primary property/ownership income	**5,062**	**5,188**	**71,523**	**23%**
Proprietors' net income (profits)	1,580	1,599	23,296	7%
Rental net income (profits)	672	682	8,070	3%
Interest	1,592	1,628	25,351	8%
Dividends	1,218	1,280	14,805	5%
Plus: Additional property/ownership Income	**-532**	**10,084**	**52,351**	**17%**
Other Changes in Volume	263	716	8,400	3%
Net accumulation of durable goods	263	259	3,907	1%
Misc: Disaster losses, pension & insur. adjustments	-35	-7	-288	0%
Other (other) volume changes	35	465	4,781	2%
Holding gains/asset (re)valuation	-795	9,368	43,951	14%
On financial assets	-2,177	7,968	29,028	9%
On nonfinancial assets	1,382	1,400	14,923	5%
Equals: Comprehensive market income	**15,490**	**26,720**	**288,511**	**93%**
Plus: Net Transfer income	**1,673**	**1,782**	**22,471**	**7%**
Gross social benefits and other transfers received	3,034	3,204	42,613	14%
Government social benefits	2,902	3,057	40,544	13%
From business (net)	22	32	489	0%
From nonprofit institutions	110	114	1,580	1%
(Less) Household contributions for gov. social insurance	1,360	1,421	20,142	6%
Uses	**16,311**	**16,974**	**241,877**	**78%**
Personal Taxes	2,076	2,205	30,192	10%
Personal Outlays	14,235	14,769	211,685	68%
Personal Consumption Expenditures	13,914	14,429	206,653	66%
Personal (non-mortgage) Interest paid	321	340	5,032	2%
Sources minus uses, change in net worth	**852**	**11,528**	**69,105**	**22%**
Plus: Assets accumulated from net new borrowing	**464**	**496**	**9,091**	**3%**
Equals: Change in assets	**1,316**	**12,025**	**78,196**	**25%**
Minus: Liabilities accumulated from net new borrowing	**464**	**496**	**9,091**	**3%**
Equals: Change in net worth (comprehensive saving)	**852**	**11,528**	**69,105**	**22%**

Each of the row categories and subcategories provides a breakdown by income quintile (Figure 2).

Figure 2. Detail for illustration. DCHIA income-quintile breakouts for categories and subcategories.

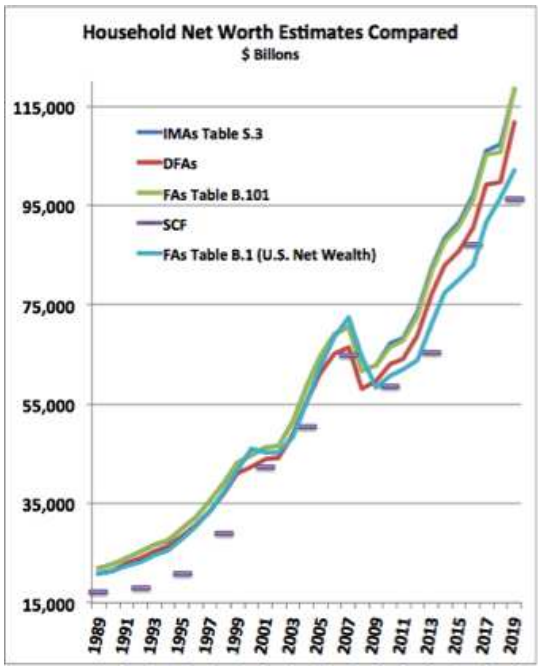
Household Income Sources and Uses	2018	2019	Sum 2000–19
Sources: comprehensive Haig-Simons income			
Labor + property/ownership + transfers	**17,163**	**28,503**	**310,982**
All HHs (cross check)	17,161	28,501	310,972
Top quintile	8,291	16,391	163,564
Second quintile	3,608	5,368	62,937
Third quintile	2,532	3,365	41,510
Fourth quintile	1,774	2,173	27,837
Bottom quintile	958	1,205	15,123
Bottom 80%	8,871	12,110	147,408
Labor Compensation (earned income)	**10,960**	**11,448**	**164,637**
All HHs (cross check)	10,960	11,448	164,637
Top quintile	5,453	5,683	80,355
Second quintile	2,686	2,871	41,324
Third quintile	1,613	1,693	24,479
Fourth quintile	886	889	13,140
Bottom quintile	322	311	5,339
Bottom 80%	5,507	5,765	84,281
Plus: Primary property/ownership income	**5,062**	**5,188**	**71,523**
All HHs (cross check)	5,062	5,188	71,523
Top quintile	3,740	3,909	52,930
Second quintile	700	707	10,043
Third quintile	378	348	5,242
Fourth quintile	177	160	2,380
Bottom quintile	65	64	927
Bottom 80%	1,321	1,279	18,593
Proprietors' net income (profits)	1,580	1,599	23,296
All HHs (cross check)	1,580	1,599	23,296
Top quintile	1,398	1,399	20,025
Second quintile	119	132	2,087
Third quintile	45	49	862

The most precise description of the sources, measures, and derivations employed is in the spreadsheet itself, the formulas and data sources therein. All trace back to national-account tables and measures, all of which are also included in the workbook (with links to original online sources). It's constructed to be as transparent as possible. A verbal description of key elements is provided below.

Household and National Wealth

Note that the Fed publishes multiple tallies of household or "national" net worth, the benchmark measure against which the DCHIA flows are evaluated. The wealth measures show some variance (Figure 3). All but one measure household wealth, again as the top of the accounting-ownership pyramid.[5] The balance-sheet measures employed here are from the Distributional Financial Accounts (DFAs). Those measures match the measures in Table b.101.h, the balance sheet of the households-only sector. The DFAs and b.101.h (along with b.101.n for NPISHes) were first released in conjunction, in 2019.

Figure 3. Federal Reserve measures of U.S. household and national wealth.



Constructing the DCHIAs

The Dec. 15, 2021 release of the BEA's Distribution of Personal Income accounts (here, the DPIAs), provides the final necessary piece of U.S. national accounting to assemble a distributional Haig-Simons household income series.

These household income measures differ significantly from the "national income" (GNI) measures employed in much income distribution research, notably the Distributional National Accounts, or DINAs, from Piketty and company and the World Income Database (WID). Those NI measures are ~20% higher than personal income.

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[5] Table B.1's "Derivation of U.S. Net *Wealth*" estimate attempts to use an unusual alternate multi-sector methodology, somewhat inconsistently derived from "real," nonfinancial assets. (This approach is not feasible for tallying either firms' or rest of world assets.) Its resulting measure is a bit lower than household net-worth measures.

Another key source for this effort is the Integrated Macroeconomic Accounts (IMAs, based on the System of National Accounts or SNAs), in which every sector's table includes 1. a balance sheet, and accounts detailing 2. accrued (re)valuation/holding gains by asset category and 3. other changes in volume. These are necessary for balance-sheet-complete sectoral accounting, and none of that additional asset accumulation is included in NIPA personal income. Annual IMA tables were first released in 2006, quarterly in 2012. Their coverage extends back to 1960. The IMAs' table S.3 is for the combined household/NPISH sector; there is no S.3.h.

Another remaining gap is the absence of a Financial Accounts (FAs)[6] transactions/flows table for the household sector, table F.101.h.[7] Likewise, necessarily, there is no R.101.h "reconciliation" table linking that missing F.101.h to the B.101.h/DFA households-only balance sheet. As a result, some measures here required estimates "backing out" the NPISH share from the available combined-sector measures, to derive household-only measures.

Even though the DPIAs provide breakouts by income deciles, the presentation here compiles those into quintiles. It's the finest distributional granularity available in another necessary series, the Consumer Expenditure Survey (CEX). The DFAs likewise only provide income-percentile breakouts of assets and liabilities by quintile (plus the top 1%). The DCHIA series is annual, covering twenty years 2000-19 — the scope provided by the DPIAs in their current release.

The quintile breakouts/categories employed here are breakouts according to personal/household income. This is necessarily so because all of the data sources employed use some such variant for their income categories/breakouts. They are not uniform, which may result in some discrepancy in the DCHIA results compared to balance-sheet changes.[8]

Overall, the DCHIAs bring together the NIPAs'/DPIAs' bottom-up approach, based on transactions, with the FAs' top-down approach based on balance-sheet changes.

The DCHIA accounting is represented in sources-and-uses form. But its accounting logic is rooted in the balance-sheet-complete account structure of the IMAs, and their derivation of change in net worth (Table S.3.a, Line 96). It begins with the DPIAs' breakouts of personal

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[6] A potential confusion of terminology is worth clarifying. The Financial Accounts is the name of the Fed's quarterly Z.1 report. It was formerly titled the Flow of Funds report, but was renamed as it added data tables beyond the "FOF" scope embodied in the transactions and levels matrixes on pages 1 and 3. This is distinct from the "financial account" for each sector, though those accounts do employ FA/FOF methodology. The IMAs' S tables, each *including* an FA-derived financial account, are published as part of The Financial Accounts.

[7] Table F.6, Derivation of Measures of Personal Saving, seems like it might fill this gap. But unlike other tables including the NIPA, DPIA, and DFA/b.101h tables, some of its measures include the unconsolidated noncorporate business sector (basically sole proprietorships) — making some of its measures unusable for the exercise here. (Its durables accumulation measures *do* match the measures on other personal-sector tables.) A comparative look at liability incurrence from these different tables illustrates the problem; the blue line is from F.6. fred.stlouisfed.org/graph/?g=SKH2

[8] The DPIAs provide decile breakouts by personal income, and by disposable income; the differences are negligible. The personal income breakouts are used here. The DFA quintile breakouts are based on SCF income. CEX breakouts are based on the CEX income measure.

(disposable) income and its subcategories. The DPIAs do all the work of allocating its category measures to income deciles; the DCHIAs bring in these DPIA measures directly. Those DPIA measures encompass and allocate 1. earned labor income, 2. what is here called primary property or ownership income, 3. net transfers (mostly from government), and 4. personal (mostly income) taxes[9].

The detailed downloadable DPIA data is publicly provided in twenty separate annual spreadsheets. The workbook here includes them and compiles their data into a single-spreadsheet data set. Data from that set can in turn be extracted, filtered, aggregated, and presented in many different tabular forms using pivot tables. (See the DPIA Data and DPIA Pivot tabs in the workbook.)

The convenient, single-sheet presentation of all DPIA category measures, by year and by both deciles and condensed into quintiles, is one contribution of this effort. The other has more economic significance: tallying and allocating additional property income that's not included in NIPA personal income (or hence, saving): 1. other changes in volume, and 2. (re)valuation-based holding gains, by quintile. Those additions comprise 17% of comprehensive income over 20 years — $52T, equivalent to 42% of 2019 ending net worth. These DCHIA additions are sourced and quintile-allocated as follows.

Net Accumulation of Consumer Durables. This measure, totalling $3.6T over twenty years, must be added to balance sheets because durables are an asset category thereon, so the period-to-period holdings changes must be accounted for. PCE includes (gross) spending on durables, but the necessary add-back of the accumulated durables/nonfinancial assets to the balance sheet is handled variously on different Financial Accounts (F and S/IMA) tables. The measure used here is from F.6 (line 31 or 42, or 21 minus 27): net investment in durable goods for the personal sector.[10] (Gross investment minus CFC: consumption of fixed capital:durables.) That volume accumulation is allocated to quintiles based on each quintile's holding share of durable goods, from the DFAs.

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[9] Note that state/local sales taxes paid by households (part of "taxes on production and imports") are included in households' personal consumption expenditures. (See bea.gov/resources/methodologies/nipa-handbook/pdf/chapter-05.pdf page 5-2.)

[10] This is a pure volume measure; a very small measure of durables valuation changes is revealed in the IMAs' revaluation account. Ideally, durable-goods volume accumulation would be an additional income category in the NIPAs' personal income, increasing that measure. (Some portion might be attributed within existing income-category derivations: proprietors' and rental [net] income, a.k.a. profit.) A similar approach in the IMAs would include durables accumulation in the "capital formation" measure in the capital account. Instead they add durables net investment/accumulation to the balance sheet via the other changes in volume account, external to the current and capital accounts. F.101 (HHs and NPISHEs) provides a measure of durables *gross* investment, but doesn't include a durables-only measure of consumption of fixed capital (CFC) — or, hence, net durables investment/accumulation. Table F.6 provides all three: gross investment - CFC = net. That net measure, used here, comports with balance-sheet level changes in personal-sector durables. (F.6 also provides a reconciliation between the FOF and NIPA personal saving measures; the NIPA saving measure does not include durables accumulation and etc.)

Misc: Disaster losses, pension & insurance adjustments. These very small measures are combined here; they total $288B over twenty years. Their estimation and allocation is detailed in the workbook.

Other (other) changes in volume. This measure, totaling $4.8T over twenty years, includes "bad debts, accounting changes, data discontinuities," etc. (Teplin et. al. p. 6.) A households-only-sector measure is not available, so the measure here is from the IMAs' combined-sector measure, adjusted down based on the household sector's share of combined-sector total assets (~94%). It's allocated to quintiles based on each quintile's percent holding shares of total assets, from the DFAs.

Holding gains/asset (re)valuation. Totalling $44T over twenty years (14% of comprehensive income), this is the largest additional income/asset-accumulation source included in the DCHIAs. Measures are derived from the IMAs' (combined-sector) revaluation gains, adjusted down based on the household sector's share of combined-sector assets (~94%). Since different quintiles hold quite different asset "baskets" (most significantly, equities vs real-estate titles), gains on financial and nonfinancial assets are allocated separately here based on quintiles' holding shares of each asset category, from the DFAs.[11]

Personal consumption expenditures. This is the standard NIPA measure. It's allocated to quintiles based on their percent shares of spending, from the CEX.[12]

Personal (non-mortgage) interest paid. Comprising $5T over twenty years, this measure still only forms 2% of personal outlays; it's overwhelmed by PCE. It's allocated to quintiles based on their shares of non-mortgage debt outstanding, from the DFAs.

It's worth noting that in the NIPAs and DPIAs (and hence the DCHIAs), mortgage interest payments by both absentee landlords and owner-occupiers are treated as negative income, "pre-deducted" within the derivation of [net] rental income [a.k.a. profits]. If they were instead

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[11] It's tempting to break out gains on assets with more granularity than just financial/nonfinancial. But that immediately engages with the third-largest subcategory of households holdings in the DFAs: pension entitlements (which are in the financial-asset category). They can be and are variously estimated in national accounts based on pensioners' tallied entitlements, or on pension funds' funding/endowment changes, or even on projections of funds' future inflows. Discussion of that accounting choice continues among national accountants. Some non-systematic testing suggests that the simple financial/nonfinancial split captures the large bulk of variance in percentage holding gains on assets across asset categories — though that may not capture the full total-returns variance across quintiles. See Balloch, Kartashova, Xavier.

[12] CEX undercounts PCE spending by roughly 40% (so only its quintile percent-shares are used here), and arguably undercounts top-percentile spending by even more. See note 17. But it's the most robust and consistent source of quintiles' spending shares available. CEX results are only available in separate (inconsistently laid-out) year-by-year spreadsheets, available from various different URLs. All are assembled in the accompanying workbook, along with a single-sheet compilation of quintiles' spending shares, for all years since 1984.

accounted in personal outlays in the Uses section (as non-mortgage "personal interest" payments are), the personal and comprehensive income measures would be 4–5% higher.[13]

Net new borrowing. Borrowing adds assets and liabilities to the household-sector balance sheet in equal measure (for net-zero effect on net worth); loan payoffs, the reverse. National-accounts measures of household borrowing derive from changes in financial-account liabilities, not from transaction flows. There are no available measures of household gross borrowing or loan payoffs. (Which would in any case face the difficulty of loan rollovers; how much of the gross borrowing is actually "new" borrowing?) So the DCHIAs use the available balance-sheet-derived changes in outstanding liabilities as the measure of net new borrowing. The measures and quintile allocation come directly from the DFAs' breakout of (changes in) liabilities by quintile.

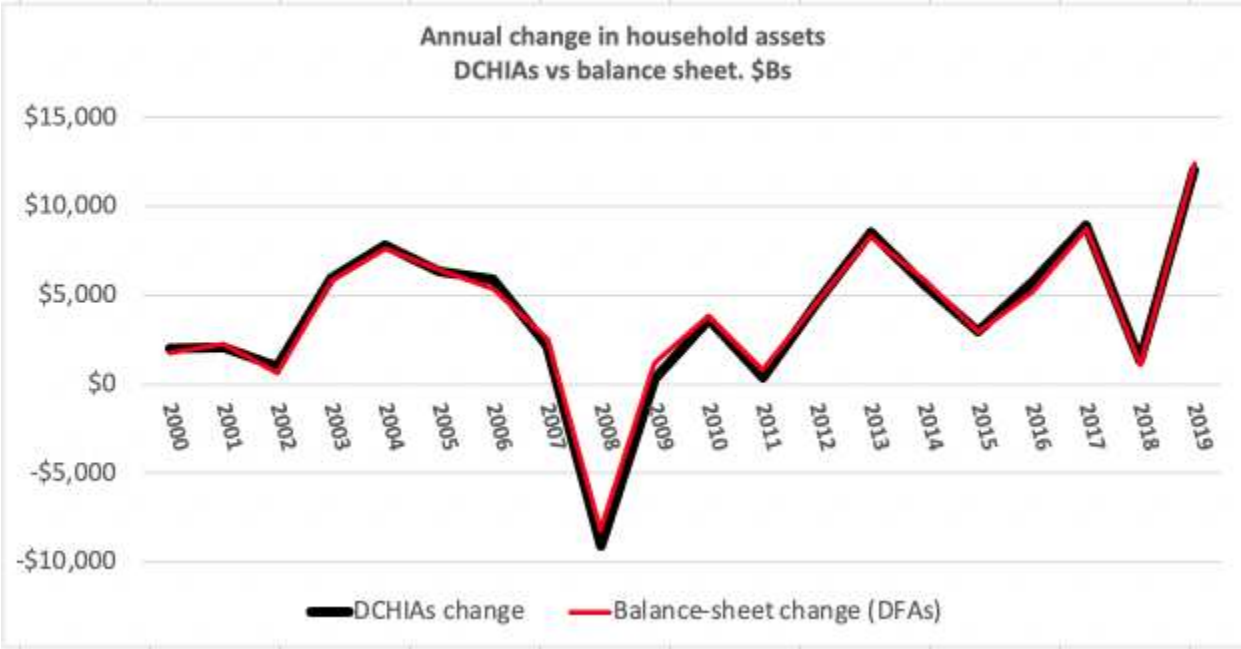
Checking the Balance

The benchmark test for all the measures and derivations assembled in the DCHIAs is their concordance with tallied balance-sheet changes from the DFAs and B.101.h. Overall, that concordance is very good (Figure 4). The DCHIAs' derived asset increase over 20 years is 1.13% lower than the DFAs' asset change. The ∆ net-worth discrepancy is 1.28%.

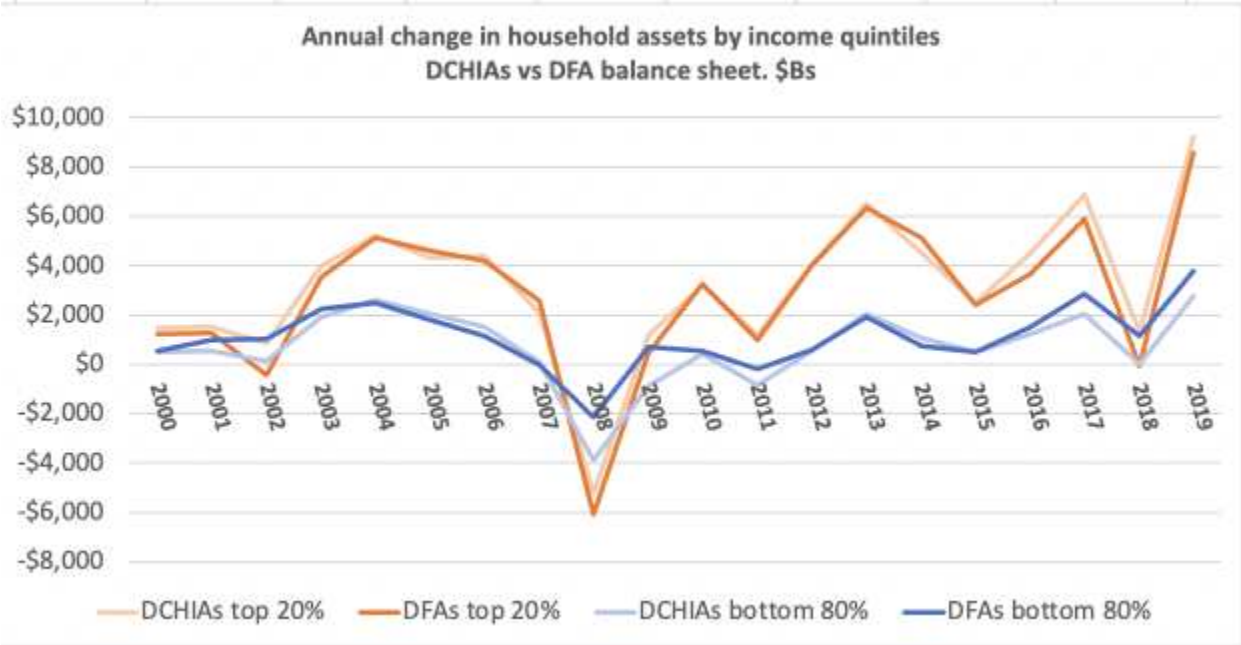
Figure 4. DCHIA vs DFA asset changes, compared.

[13] Treatments of mortgage vs personal interest paid vary in different national accounts tables. Mortgage interest is treated as negative income in the NIPAs table 2.9 and DPIAs, deducted within the [net] rental income [profits] derivation. Owner-occupiers and sole-proprietor absentee landlords are effectively treated as a mini "firms" sector inside the personal sector. The FAs' F.101 starts with NIPA Personal Income, so it does likewise. Personal, non-mortgage interest, by contrast, is not pre-deducted in NIPA 2.9 and F.101; it's part of personal outlays, treated as a "use" of personal income. In the IMAs' S.3, mortgage interest is not deducted in its "operating surplus" derivation, but both mortgage *and* personal interest are pre-deducted as negative income via its "Uses of property income (interest paid)" measure. The measures here are drawn directly from the DPIAs: mortgage interest is (silently) pre-deducted as negative income within the rental income derivation, and personal interest is part of personal outlays.

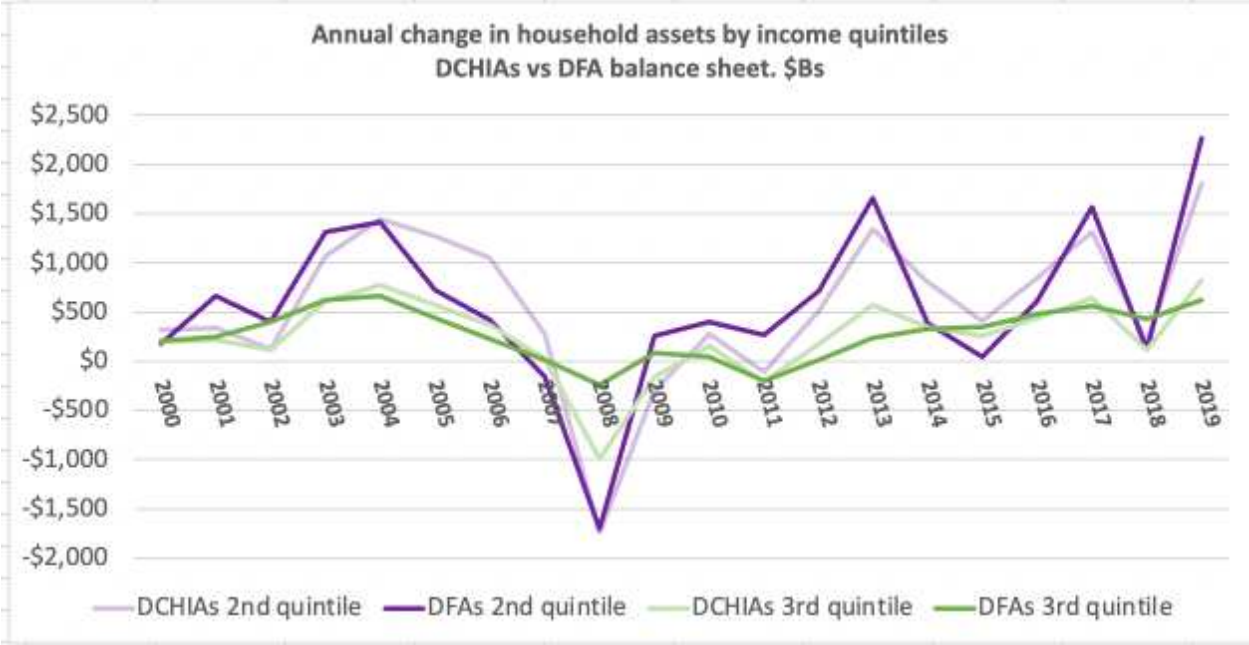
a) All households



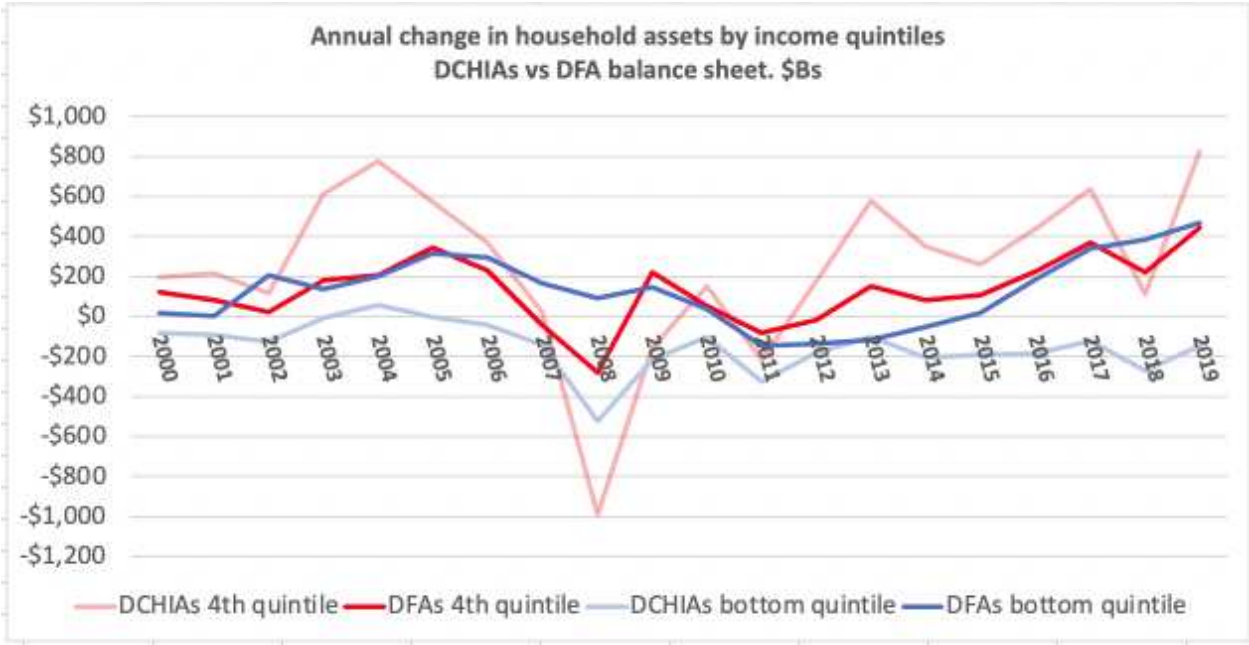
b) Top 20% and bottom 80%



c) Second and third quintiles



d) Fourth and fifth quintiles



Greater percentage discrepancies emerge in more granular quintile-level comparisons, increasingly (in percentage terms) as we move down the quintiles. Note that the bottom two quintiles' Y-axis dollar measures in Figure 4 are an order of magnitude smaller than the top 20%, even while relative (percentage) discrepancies get larger. The DCHIA's bottom-quintile results, in particular, show mostly negative asset accumulation, vs largely positive prints from

the DFAs. The big dollar discrepancies appear to be centered in the top and bottom quintiles. (The bottom-quintile dollar discrepancy explains ~70% of the bottom-80% dollar discrepancy.)

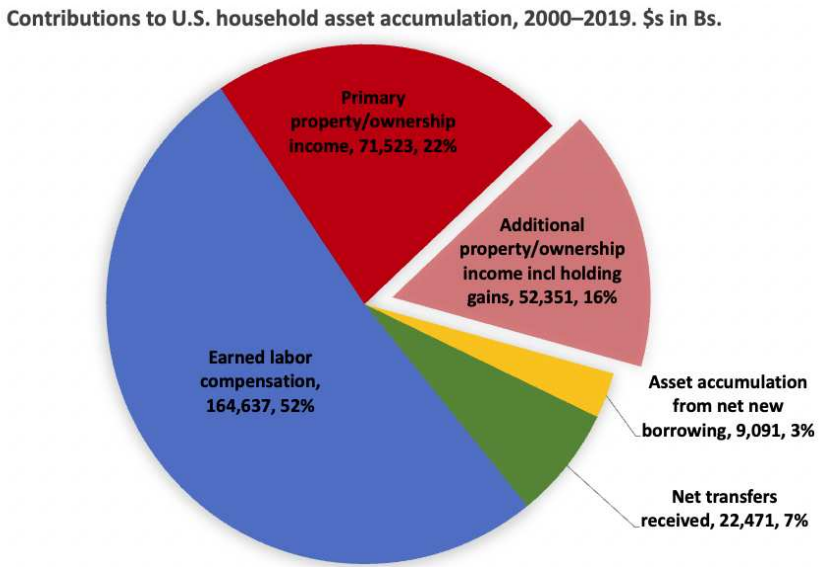
Illustrating the DCHIAs

Despite those discrepancies, the CHIAs and DCHIAs still provide a comprehensive picture of U.S. household (and national) asset/net worth/wealth accumulation over the twenty years examined. This section highlights that with three examples out of many possible, depicting stylized economic facts that diverge significantly from standard national-account measures and ratios.

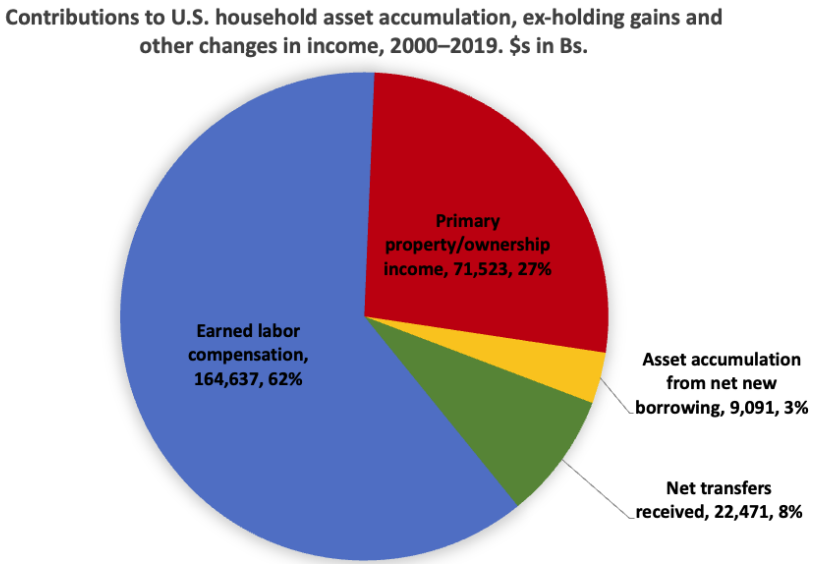
Figure 5 gives the big picture of household asset accumulation by income type over twenty years, including the CHIAs' large measure of additional property income that's missing in personal income and national income measures.

Figure 5. Sources of household asset accumulation.

A) Total asset accumulation



B) Excluding holding gains and other changes in volume.



Panel A's balance-sheet-complete measure shows 52% of comprehensive income going to labor as earned income. Panel B, excluding additional property income, shows 62%. For comparison, The BLS "labor share of nonfarm business output" measure averages 59% over the period. The Penn World Tables' U.S. labor share of GDP averages 60%.[14] In Panel A's construction, 84% of unearned income is property/ownership income ($124T); 16% is net transfers from government ($22T).

Figure 6 helps illuminate that labor-share figure with an annual series showing top-20% vs bottom-80% shares of comprehensive income. It depicts a significant decline in the bottom-80% percentage share over twenty years, from the low 50% range to the mid 40s. 2008 stands out for obvious reasons, and 2018 highlights the large equity-market drawdown in December of that year. 2019's 42% share for the bottom 80% is the lowest number in the series. This 20/80 split is a quite solid, low-discrepancy measure, despite bottom-20% discrepancies.

Figure 6. Top-20% and bottom-80% shares of comprehensive incomel.

[14] This BLS labor-share measure is generally only published (e.g. on FRED) as a labor-share index, or change in the index. Its actual labor share percentages are occasionally published in reports and papers like the one linked here. An equivalent measure is more regularly accessible from the Penn World Tables (University of Groningen) measures on FRED.

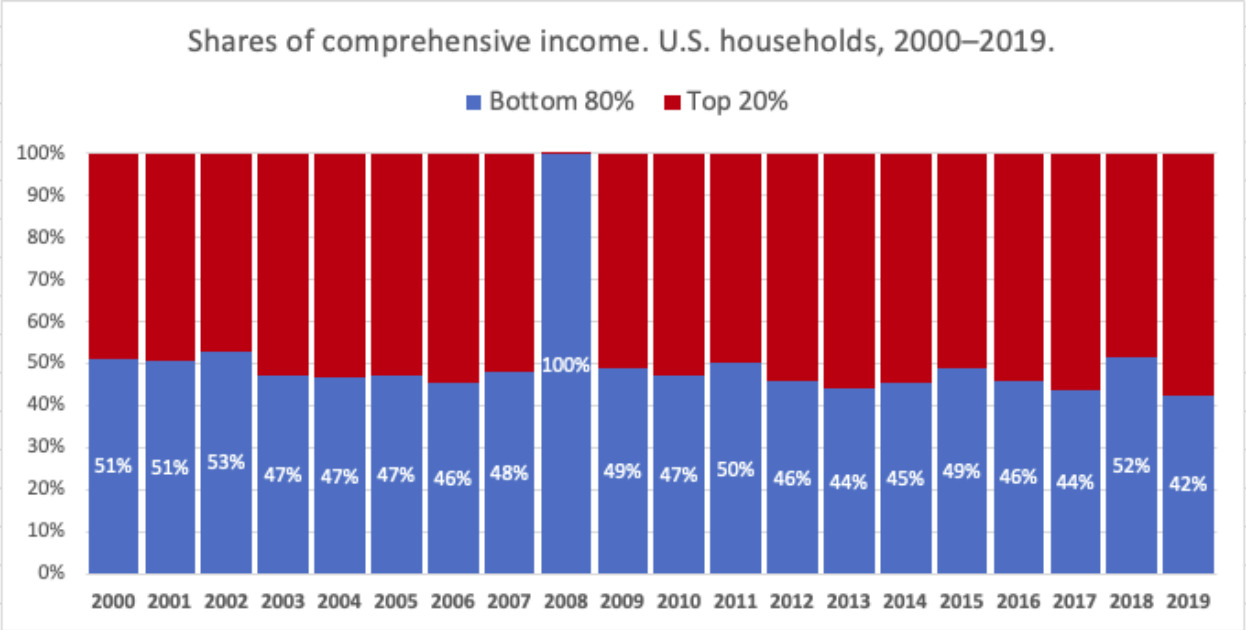
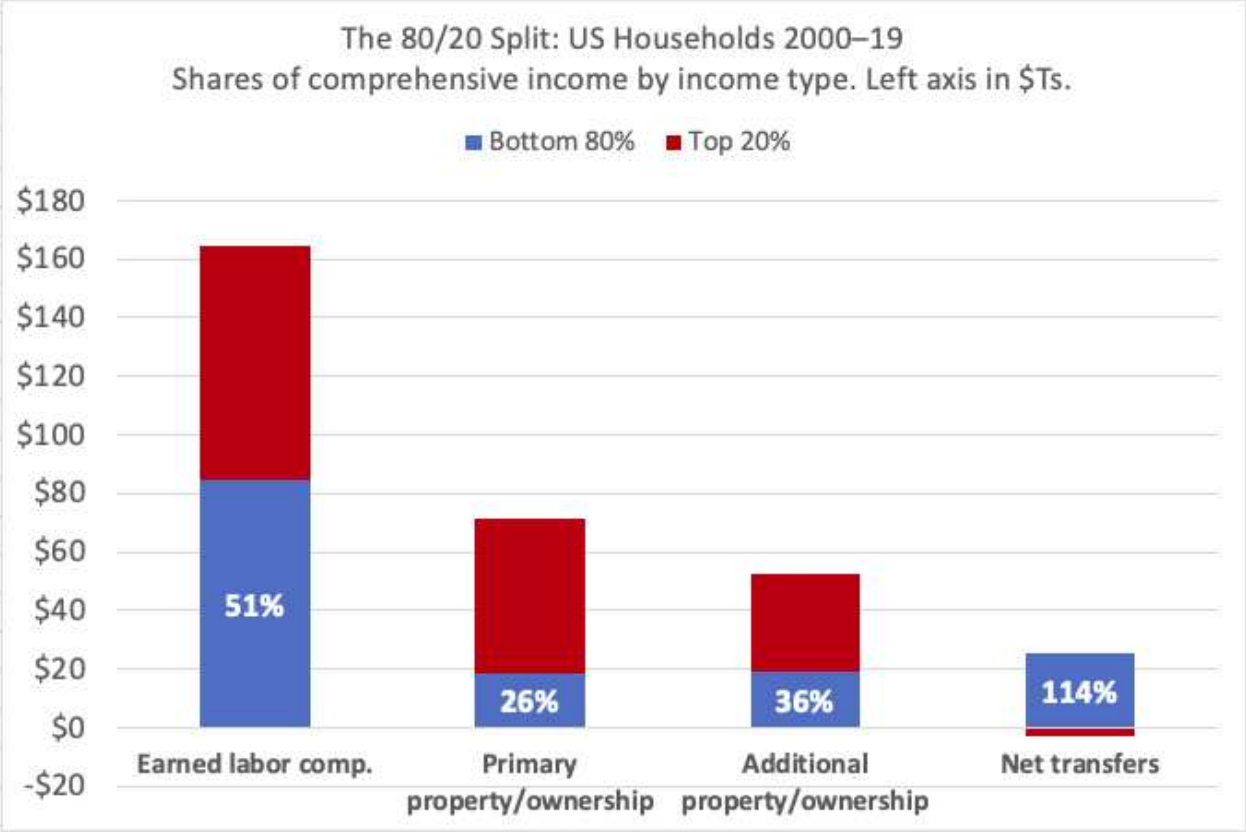


Figure 7 shows the 20/80 split for comprehensive income over twenty years broken out by category of income — again, quite solid measures relative to balance-sheet changes.

Figure 7. Bottom-80% and top-20% shares of comprehensive income by income category



At least four interesting items stand out in this figure. 1. The bottom 80% receives more from transfers than it does from primary property income or additional property income. 2. The top 20% receives more from *either* primary or additional unearned property income than the bottom 80% receives from transfers. 3. The bottom 80% captures a larger percentage share of additional property income, vs primary property income: 36% vs 26%. That is explained by large bottom-80% holding gains on real estate. 4. The top 20% has negative net transfers, but the magnitude is trivial relative to any measure of top-20% income.

These type of insights and measures are valuable, but the nagging discrepancies remain. The next sections suggest areas where different sources, measures, and quintile allocations might be plugged into the DCHIA accounting structure to improve the lower quintiles' conformance with balance-sheet results. An annual series for any of these suggested measures by year, showing each quintile's positive/negative asset change/flow, can replace or be added to the measures currently employed.

Intra-sectoral shifts, compositional changes, and quintile definitions

As mentioned above (Note 8), the DCHIAs use each data source's quintile breakouts, based on their own income measures, and those measures are not consistent. Efforts to regularize those quintile definitions might help account for some of the discrepancies.

The measures compiled in the DCHIAs all involve changes in total sectoral assets. Transfers and shifts in assets across quintiles *within* the sector are not considered. Inheritances and bequests, for instance, may be $1-2T or more per year. Data sets for this measure, and its movement across the income quintiles, are sparse on the ground.[15]

Perhaps more significant: households move between income quintiles and take their assets with them. To the extent that these compositional moves are large and systematic in direction, they could appear as significant asset changes for income quintiles. Retirees, for instance, generally move into lower income quintiles, and bring their often-considerable assets with them. As with inheritance, there is limited data available on this effect.[16]

Allocation methods in the DCHIAs and its sources

DFAs and B.101.h. These balance-sheet measures are heavily dependent on the triennial Survey of Consumer Finance (SCF). Measures in non-survey years depend on some interpolation. It's at least worth noting that the largest top-quintile DCHIA discrepancies appear in non-survey years. That pattern does not seem to hold for lower-quintile discrepancies.

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[15] See Sabelhaus, and Nolan and Salas-Rojo, which both find high gini coefficients for inherited wealth, suggesting limited transfer down the quintiles.

[16] Notable recent efforts in this area include Morelli, Mian et. al., and Gindelsky.

DPIAs. Personal income comprises a large 82% of comprehensive income, so the DPIAs' internal allocation methods for the categories and subcategories could explain some of the DCHIAs' quintile discrepancies. (Likewise the DCHIA results, cross-checked against balance sheets, may provide some insights for future development of the current first-generation DPIAs.)

Holding gains. As discussed above, holding gains from the IMAs are quintile-allocated separately for financial and nonfinancial assets, based on quintiles' holding shares of each asset type, from the DFAs. The asset-holding basis seems safe since holding gains are a function of…holdings. But a more granular asset-category allocation may be necessary, in particular considering allocation of pension entitlements, a large category in the DFAs.

Personal consumption expenditures. The allocation of this measure depends on income-quintile spending-share estimates from the CEX, which probably understate top percentiles' spending shares, perhaps by quite a lot, while overstating lower quintiles'.[17] This could in particular help explain why the bottom quintile appears to be disaccumulating assets in the DCHIAs.

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