

# Integrated Household Surveys and Corporate Financial Accounting: Applications to U.S. Surveys of Households and Consumers

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# Overview

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Assess S-T (2009) integration in 8 U.S. surveys:

- Balance sheet, income statement, cash flow

Describe integration of Boston Fed surveys

- 2015 Survey/Diary of Consumer Payment Choice
  - Cash flow statement modified for payments

# U.S. Surveys

Acronym	Title
TTMS	Townsend Thai Monthly Survey [BENCHMARK]
SCPC	Survey of Consumer Payment Choice (Boston Fed)
DCPC	Diary of Consumer Payment Choice (Boston Fed)
SCF	Survey of Consumer Finances (Federal Reserve Board)
CE	Consumer Expenditure Survey (BLS)
PSID	Panel Study on Income Dynamics
HRS	Health and Retirement Survey
NASCC	National Asset Scorecard for Communities of Color
FD	U.S. Financial Diaries

# Balance sheet – assets

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Assets</b>									
<b>Financial assets</b>									
<b>SHORT-TERM</b>									
Currency (bills and coins)	X	X	X						X
Bank accounts (checking and saving)	X	O		X		X	X	X	X
Other accounts (prepaid, Paypal, etc.)		O							X
Private virtual currency (Bitcoin etc.)		X							
<b>LONG-TERM</b>		X							
Certificate of deposits				X		X	X	X	X
Mutual funds/hedge fund				X				X	
Publicly traded equity				X		X	X	X	X
Bonds				X		X	X	X	X
Retirement accounts				X		X	X	X	X
Life insurance	X			X		X			
Annuities				X		X		X	X
Trusts/managed investment accounts				X				X	
Loans to people outside the HH	X			X				X	X
Other important assets	X			X			X	X	X
<b>Nonfinancial assets</b>									
Business	X					X	X	X	X
Housing assets	X	X		X		X	X	X	X
Vehicles	X			X		X	X	X	X
Other non-financial assets	X			X				X	

O: Ownership only; X: Ownership and amount; Empty: No information

Source: authors' preliminary calculations; comments and corrections welcome!

# Balance sheet – liabilities

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Liabilities</b>									
<b><i>Revolving credit</i></b>									
Credit cards / charge cards		X		X		X			X
Revolving store accounts				X					
<b><i>Non-revolving credit</i></b>									
<b>Housing</b>									
Mortgages for primary residence		X		X		X	X	X	X
Mortgages for investment real estate or second home				X					X
Loans for improvement				X		X	X	X	X
Loans on vehicles	X			X		X		X	X
Education loans				X		X		X	X
Business loans				X					X
Investment loans (e.g. margin loans)				X					
Unsecured personal loans	X			X			X		
Loans against pension plan				X					
Payday loans / Pawn shops								X	X
Any other loans	X	X		X		X	X	X	X

Source: authors' preliminary calculations; comments and corrections welcome!

# Income statement – income

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Total income</b>		X							
Compensations of employees									
Wages and salaries	X			X		X	X	X	X
Professional practice or trade						X			
Business income (self-employment)	X			X		X			
Rent	X			X		X			
Interest, dividends, etc.	X			X		X			X
Government Transfer Receipts	X			X		X	X		X
Other transfer receipts, from business	X								
Other transfer receipts, from persons	X								
All other income	X			X		X			X
<b>Income</b>									
Income in currency	X		O						
Income in demand deposit accounts			O						
Income in other short-term assets			O						
Income in liabilities			O						

O: Ownership only; X: Ownership and amount; Empty: No information

Source: authors' preliminary calculations; comments and corrections welcome!

# Income statement – consumption

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Consumption and taxes (by type of expenditures)</b>									
Food and alcohol products and services	X		X		X		X		
Personal care products and services	X		X		X				
Tobacco products and smoking supplies	X		X		X		X		
Reading	X		X		X		X		
Apparel and services	X		X		X		X		
Housing, furnishings, and utilities	X		X		X		X		
Healthcare	X		X		X		X		
Transportation	X		X		X		X		
Communications	X		X		X		X		
Entertainment	X		X		X				
Education	X		X		X		X		
Personal insurance, financial services, and pensions	X		X	X	X		X		X
Cash contributions	X		X		X		X	X	
Miscellaneous	X								
Taxes	X		X		X		X	X	
<b>Consumption and taxes (by type of assets)</b>									
Consumption in currency	X		X						
Consumption in demand deposit accounts			X						
Checks, Debit, OBBP, BANP			X						
Consumption in other short-term assets			X						
Prepaid, Money order, traveller's check			X						
Consumption in liabilities			X						
Credit, Charge, Text/SMS			X						
Other			X						
Direct deduction from income			X						

Source: authors' preliminary calculations; comments and corrections welcome!

# Consumption classification systems

PCE	CE	PSID
Food <ul style="list-style-type: none"> <li>- Purchased for off-premises consumption</li> <li>- Produced and consumed on farms</li> </ul>	Food <ul style="list-style-type: none"> <li>- At home</li> <li>- Away from home</li> </ul>	Food <ul style="list-style-type: none"> <li>- At home</li> <li>- Away from home</li> <li>- Delivered</li> </ul>
Housing, utilities, and fuels <ul style="list-style-type: none"> <li>- Rental</li> <li>- Group housing</li> <li>- Water supply and sanitation</li> <li>- Electricity, gas, and other fuels</li> </ul>	Housing <ul style="list-style-type: none"> <li>- Rented Dwellings</li> <li>- Property Tax</li> <li>- Home Insurance</li> <li>- Utilities</li> <li>- Telephone Services</li> <li>- Computer Information Services</li> <li>- Maintenance Repairs</li> <li>- Household furnishings and equipment</li> </ul>	Housing <ul style="list-style-type: none"> <li>- Rent</li> <li>- Property Tax</li> <li>- Home Insurance</li> <li>- Utilities</li> <li>- Telephone/Internet</li> <li>- Home Repairs and Maintenance</li> <li>- Household Furnishings and Equipment</li> </ul>
Furnishings, household equipment, and routine household maintenance <ul style="list-style-type: none"> <li>- etc.</li> </ul>		
Transportation <ul style="list-style-type: none"> <li>- Motor vehicles</li> <li>- Motor vehicle operation</li> <li>- Public transportation</li> </ul>	Transportation <ul style="list-style-type: none"> <li>- Vehicle Purchases</li> <li>- Gasoline and Motor oil</li> <li>- Vehicle Finance Charges</li> <li>- Maintenance and Repairs</li> <li>- Vehicle Insurance</li> <li>- Vehicle rental, leases, licenses, and other charges</li> <li>- Public Transportation</li> </ul>	Transportation <ul style="list-style-type: none"> <li>- Vehicle loan payment</li> <li>- Vehicle down payment</li> <li>- Vehicle lease payment</li> <li>- Insurance</li> <li>- Repair and Maintenance</li> <li>- Gasoline</li> <li>- Parking and carpool</li> <li>- Bus fares and train fares</li> <li>- Taxicabs</li> <li>- Other transportation</li> </ul>
Healthcare <ul style="list-style-type: none"> <li>- Medical products, appliances, and equipment</li> <li>- Outpatient services</li> <li>- Hospital and nursing home services</li> </ul>	Health Care <ul style="list-style-type: none"> <li>- Health insurance</li> <li>- Medical services</li> <li>- Drugs</li> </ul>	Health Care <ul style="list-style-type: none"> <li>- Doctor</li> <li>- Prescription Drugs</li> <li>- Insurance</li> <li>- Hospital/Nursing Home</li> </ul>
Clothing, footwear, and related services	Apparel and services	Clothing
Education	Education	Education

Note: Table does not include CE categories of Personal Care Products, Tobacco Products and Smoking Supplies, Reading, Communications, Entertainment, Personal insurance, financial services, and pensions, Cash Contributions, and Miscellaneous



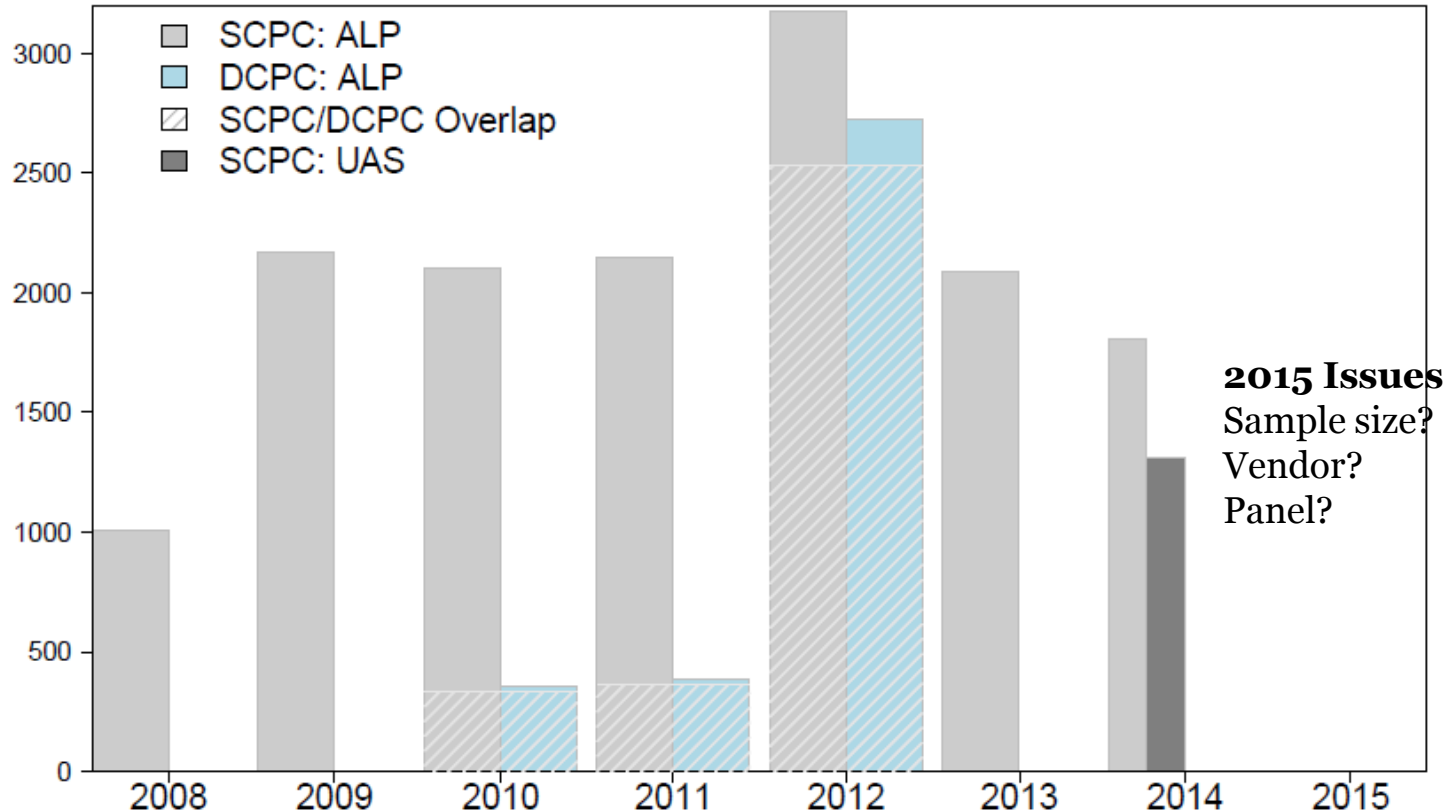
# Cash flow statement [standard]

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Cash flow from Consumption and Investment</b>									
<i>Consumption expenditure (-)</i>									
Expenditure 1	X		X						
Expenditure 2	X		X						
<i>Capital expenditure (-)</i>									
Expenditure 1	X		X						
Expenditure 2	X		X						
<b>Cash flow from Financing</b>									
Lending (-)	X		X						
Borrowing (+)	X		X						
Net Gifts Received (+)	X		X						

Source: authors' preliminary calculations; comments and corrections welcome!

# SCPC and DCPC overview

Number of Respondents by Year



# SCPC and DCPC contents

<b>Feature</b>	<b>Survey</b>	<b>Diary</b>
Financial responsibility	X	
Characteristics of payment instruments (PI)	X	
Adoption of PI	X	X (implied)
Cash activity	X	X
Frequency of use of PI	X	X
Payment (expend.) types	7 (3 bills+4 other)	45 (linked to NAICS)
Dollar values of payment activity		X
Miscellaneous	X <sup>S</sup>	X <sup>D</sup>
Demographics	X	X

# DCPC aggregate income

Source	\$ tr	% of APDI
<b>Personal disposable income (NIPA, 2012 Q4)</b>		
Total	12.5	
Excl. imputed rent and Medicare/aid	11.0	
Personal savings	0.8	
Adjusted personal disposable income (APDI)	10.2	100
<b>DCPC</b>		
All expenditures	9.7	95

**Table:** Expenditures from different sources

# DCPC aggregate “consumption”

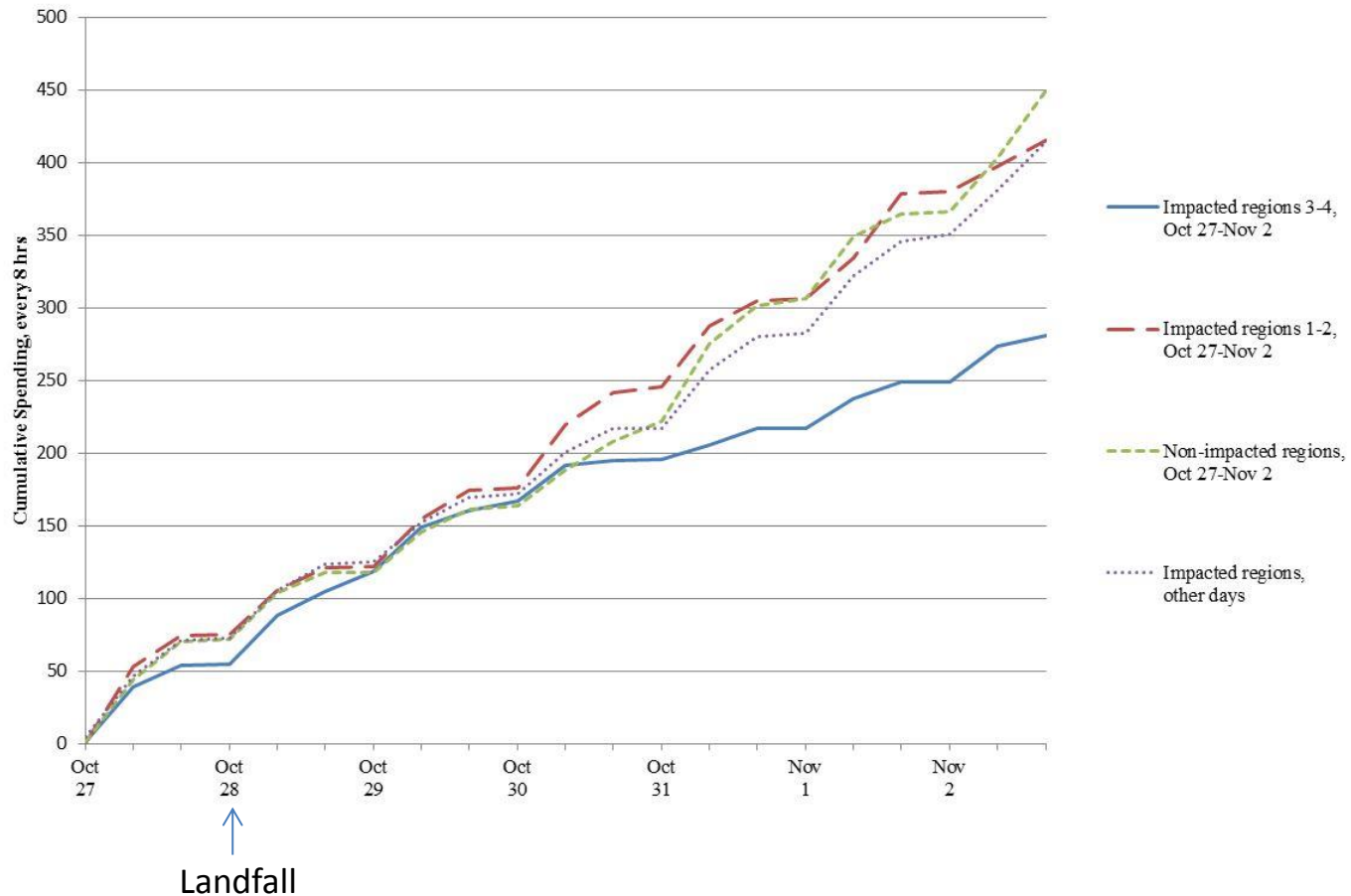
Source	\$ tr	% of adjusted PCE
<b>Personal Cons. Expenditure (2012)</b>		
Total	11.1	122
Adjusted PCE	9.1	100
<b>DCPC (2012)</b>		
Consumption only*	8.1	89
<b>Consumer Expenditure Survey (2012)</b>		
Total	6.4	70
Adjusted CEX	5.1	56
<b>Hurd &amp; Rohwedder (2011 Q4)</b>	<b>5.4</b>	<b>59</b>

\* Excluding mortgage, financial services, insurance, taxes, P2P transfers.

Table: Measures of aggregate consumption

# DCPC illustrative result

## Cumulative consumer expenditures following Hurricane Sandy



# Money and Payments

## Macro/monetary view

## Micro/IO view

Asset or Liability	Basic Money or Debt	Instrument (derivative media)	Physical trait	
Money (M1)	Currency in circulation	Currency	Paper / metal	
	Travelers check	Travelers check		
	Demand deposit accounts & Other checkable deposits	Checks (Personal, Certified, Cashiers)		
		Money order		
		Online banking bill pay (OBBP)	Electronic	
		Bank account number payment (BANP)		
		Direct deduction from income		
		Debit	Card	
	Prepaid			
Credit	Revolving	Credit	Card	
	Nonrevolving	Charge		
			Text/SMS	Electronic
Unknown/unspecified	???	Nonbank money order or prepaid card; virtual currencies	Mixed	

Source: Author's analysis.

# Cash flow statement [modified]

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
<b>Cash flow from Consumption and Investment (C&amp;I)</b>									
Consumption expenditure (-)	X		X						
Capital expenditure (-)	X		X						
Cash flow from C&I, Currency	X		X						
Cash flow from C&I, DDA			X						
Cash flow from C&I, Credit Card			X						
Cash flow from C&I, Prepaid			X						
<b>Cash flow from Financing</b>									
Change in Deposit at Financial Institution (-)	X		X						
Lending (-)	X								
Borrowing (+)	X								
Net Gifts Received (+)	X		X						
Cash flow from Financing, Currency	X		X						
Cash flow from Financing, DDA			X						
Cash flow from Financing, Credit Card			X						
Cash flow from Financing, Prepaid			X						

Source: authors' preliminary calculations; comments and corrections welcome!



# Cash flow statement: *Currency*

	TTMS	SCPC	DCPC	SCF	CE	PSID	HRS	NASCC	FD
Statement of Currency Flows (U.S. currency)									
<b>Net income in currency (+)</b>									
<b>Cash flow from Consumption and Investment</b>									
Consumption expenditure (-)									
Payment 1 (expenditure 1, 2, 3, ...)	X		X						
Payment 2 (expenditure 1, 2, 3, ...)	X		X						
Capital expenditure (-)									
Payment 1 (expenditure 1, 2, 3, ...)	X		X						
Payment 2 (expenditure 1, 2, 3, ...)	X		X						
<b>Cash flow from Financing</b>									
Salary (+)	X		X						
Change in Deposit at Financial Institution (DDA accounts)	X		X						
Cash deposits (-)	X		X						
Cash withdrawals (+)	X		X						
Change in CC accounts			X						
Payment to CC Account (-) [rare?]									
Payment from CC Account (+)			X						
Change in Prepaid accounts			X						
Payment to Prepaid Account (-)			X						
Payment from Prepaid Account (+)			X						
Lending (-)	X								
Borrowing (+)	X								
Net Gifts Received (+)	X		X						

Source: authors' preliminary calculations; comments and corrections welcome!

# Expanded balance sheet – assets

	TTMS	SCPC	DCPC
<b>Assets</b>			
<b>Financial assets</b>			
<b>SHORT-TERM</b>			
Currency (bills and coins)	X	X	X
Bank accounts (checking and saving)	X	X	
Other accounts (prepaid, Paypal, etc.)		X	
Private virtual currency (Bitcoin etc.)		X	
<b>LONG-TERM</b>			
Certificate of deposits		X	
Mutual funds/hedge fund		X	
Publicly traded equity		X	
Bonds		X	
Retirement accounts		X	
Life insurance	X	X	
Annuities		X	
Trusts/managed investment accounts		X	
Loans to people outside the HH	X	X	
Other important assets	X	X	
<b>Nonfinancial assets</b>			
Business	X	X	
Housing assets	X	X	
Vehicles	X	X	
Other non-financial assets	X	X	

Source: authors' preliminary calculations; comments and corrections welcome!

# Expanded income statement – income

	TTMS	SCPC	DCPC
<b>Total income</b>		X	
Compensations of employees			
Wages and salaries	X	X	X
Professional practice or trade		X	X
Business income (self-employment)	X	X	X
Rent	X	X	X
Interest, dividends, etc.	X	X	X
Government Transfer Receipts	X	X	X
Other transfer receipts, from business	X	X	X
Other transfer receipts, from persons	X	X	X
All other income	X	X	X
<b>Income</b>			
Income in currency	X	X	X
Income in demand deposit accounts		X	X
Income in other short-term assets		X	X
Income in liabilities		X	X

Source: authors' preliminary calculations; comments and corrections welcome!

# DCPC payee-expenditure classification

DCPC	Payee	CE	DCPC	Payee	CE
Food at home and away, stores online and offline, vending machines  (8 categories)	Merchant	- Food and alcohol products and services - Personal care products and services - Tobacco products and smoking supplies - Reading - Apparel and services	Utilities; furniture, appliance, and hardware stores; rent/mortgage; building contractors and services  (8 categories)	Merchant	- Housing, furnishings, and utilities
Auto rental/maintenance, auto dealers, gas stations, parking, tolls, public transportation  (7 categories)	Merchant, Govt	- Transportation	Education	Educators	- Education
Entertainment, recreation, arts, museums, movie theaters  (2 categories)	Merchant	- Entertainment	Health professionals, hospitals, residential care  (2 categories)	Medical service providers	- Healthcare
Phone/internet, online and print news, online games	Merchant	- Communications	Financial services, insurance	Financial service providers	- Personal insurance, financial services
			Charitable organizations, friends and family, other people  (3 categories)	Non-profit	- Cash contributions
			Other categories  (11 categories)		- Miscellaneous

# Future work

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## Short Run

- Completing analysis of U.S. surveys
- Integrating 2015 SCPC and DCPC

## Long Run

- Getting consensus on concepts/measurement
- Unifying the statistical system