



# Measuring Global Flow of Funds and Integrating Real and Financial Accounts: Concepts, Data Sources and Approaches

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# Background

$$B = [X - M] + [CI - CO] \quad (1)$$

- Where:
  - $B \equiv$  balance of payments
  - $X \equiv$  exports
  - $M \equiv$  imports
  - $CI \equiv$  capital inflow
  - $CO \equiv$  capital outflow

# Background

- From national accounting have:

$$X - M = S - I$$

- Where  $S \equiv$  national saving and  $I \equiv$  Investment, which implies:

$$B = [S - I] + [CI - CO] \quad (2)$$

- $S - I \equiv$  Domestic financial markets
- $CI - CO \equiv$  International (ROW) financial markets

# Background

- Using (2) consider two countries A and B
  - $B_A = [S_A - I_A] + [CI_A - CO_A]$
  - $B_B = [S_B - I_B] + [CI_B - CO_B]$
- Assuming  $B_A = B_B = 0$ 
  - if for A;  $S_A > I_A$  then  $CI_A < CO_A$
  - then for B;  $S_B > I_B$  then  $CI_B < CO_B$
- If  $B \neq 0$ , then the deficits and surpluses bring about changes in reserve assets: currencies, gold and SDRs

# Background

- This in essence is what is illustrated in Figure 1
- The paper seeks to account for the flows between countries by: instrument; IIP functional category; and from whom-to-whom
- Underlying causes of flows; interest rate differentials, and exchange rate movements – both current levels and expected future levels and real changes such as technology

# Accounting

- Aftermath of crisis of 2008: need for better understanding of cross-border vulnerabilities
- Extensive international effect: IMF, BIS, OECD to name a few
- Derivation of matrix accounting structures that incorporate SNA information and other financial information
- Data sources are discussed in section 4 of the paper
- The Balance sheet approach to Global Flow of Funds

# Accounting

- Have non-financial assets + Financial assets + liabilities yielding net worth of economy

**Table 1. A Framework for Measuring Global Flow of Funds**

Stocks	Flows		Stocks
Opening Balance Sheet	Transactions	Other Changes	Closing Balance Sheet
Nonfinancial Assets	Savings-Investment Balance Current Account Balance		Nonfinancial Assets
Assets (by financial category)			Assets (by financial category)
Direct Investment			Direct Investment
Portfolio Investment			Portfolio Investment
Other Investment			Other Investment
Reserves Assets			Reserves Assets
Total Assets	Change in Financial Assets		Total Assets
Liabilities (by financial category)			Liabilities (by financial category)
Direct Investment			Direct Investment
Portfolio Investment			Portfolio Investment
Other Investment			Other Investment
Total Liabilities	Change in Financial Liabilities		Total Liabilities
Net Position	Change in Net Worth		Net Position

- Changes in non-financial assets can occur outside of balance flows - transaction and value changes has:
  - Opening stock + (transactions + valuation adjustment + other changes in value) = Closing Stock

# Accounting

**Table 2. Domestic Assets and Liabilities Matrix by Balance Sheet Approach**

Issuer of liability (debtor) \ Holder of liability (creditor)	General Government			Financial Sector			Nonfinancial Corporations			Household			Rest of the World		
	A	L	NP	A	L	NP	A	L	NP	A	L	NP	A	L	NP
Nonresidents															
Currency and deposits															
Securities other than shares															
Loans															
Shares and other equity															
Insurance technical reserves															
Financial derivatives															
Other accounts receivable															

- Focus is on how the data from ROW relates to the other institutional sectors through the type of instrument held by non-residents
- If General Gov. issues a liability then it is held as an asset by a non-resident
- But what of General Gov. liabilities held by residents?
- Should there be a set of rows for residents?
- Where are the Government's assets or the assets for any of the other sectors?

# Accounting

- Table 3 in the paper is fairly common from whom-to-whom matrix like the one from IMF

**Table 3. Domestic Assets and Liabilities Matrix on a From-Whom-to-Whom Basis**

Issuer of liability (debtor) \ Holder of liability (creditor)		Residents				Nonresidents	All Debtors
		General Government	Financial Sector	Nonfinancial Corporations	Household		
Residents	General Government						
	Financial Sector						
	Nonfinancial Corporations						
	Household						
Nonresidents							
All Creditors							

# Accounting

- Since the focus is on international, information from Table 2 is used to generate Table 4

**Table 4. External Assets and Liabilities Matrix**

Issuer of liability (debtor) Holder of liability (creditor)		Rest of the World			Country A			Country B***			Other Economies		
		A	L	NP	A	L	NP	A	L	NP	A	L	NP
Direct Investment													
Portfolio Investment													
Equity Securities													
Debt Securities													
Long-time debt securities													
Short-time debt securities													
Other Investment Banks													
Non-banks													
Reserve Position in the Fund													
SDR Holdings													
Foreign Exchange													
Total IIP													

# Accounting

- Note that the rows are now the categories from the international investment position
- Again, not clear what assets are
- Allocation of position across different countries
- Table does not show the from whom to whom relationships

# Accounting

- Main point of paper is to introduce Table 5

**Table 5. External Assets and Liabilities Matrix on a From-Whom-to-Whom Basis**

Counterpart Countries (Investment in):	Counterpart Countries (Investment from):				
	Rest of the World	Country A	Country B	...	Other Economies
Rest of the World					
Country A					
Country B					
...					
Other Economies					

# Accounting

- Provides from whom-to-whom information
- Question: how to incorporate the financial instrument categories or IIP categories?
- Paper says that Table 5 could use financial instrument categories in SNA 2008

# Accounting

- These are:
  - Monetary Gold and SDRs; currency and deposits; Debt securities; Loans; Equity and investment fund shares; Insurance, pension and standardized guarantee schemes; Financial derivatives and employee stock options; and other accounts receivable and payable

# Accounting

- These categories are similar to the ones used in Table 2
- Next version of paper should have an example of Table 5 with the detail

# Summary and Conclusions

- Given the attention directed toward financial flows, a framework integrating from whom to whom with financial instruments
- Comparing the suggested tables with those suggested by IMF and BIS would be informative