General Framework - Circular Flow

1. Key Markets and interactions
* *Factor markets*: labor, capital, raw materials I
* *Goods markets*: consumption, investment, export, import, gov III
* *Financial Asset markets*: money, credit, equities IV
* *Income Transfers* among sectors II

Diagram shows 2 directional flows: Payment ($) and Good or Service

1. Key actors, assumptions, and decisions

 a. **Households** - max utility subject to an income constraint

 - supply labor and savings (Ls and Sp)

 - purchase goods C

 - manage a portfolio (Money , Bonds, and Equities)

* 1. **Businesses** - act as a conduit/partnership for shareholders

 - seek to maximize present discounted value of profits

 - hire factors - labor, raw materials, capital equipment

 - produce goods - C, I, G, and X

 - finance projects with retained earnings, bonds, or equities

Essentially, obtain resources from household sector and return income to household

* 1. **Governments** (all levels)

 - buy goods G

 - design and administer transfers F

 - finance activities - tax, bonds, or money

* 1. **Financial institutions**

 - hold securities, place deposits at Fed, have cash

 - hold deposits for a - c

 - disburse funds to households and businesses

 - generate income (not central to our macro discussion)

* 1. **Central Bank**

 - hold Bg and foreign exchange

 - receive deposits from financial institutions

 - put money in circulation through monetary policy

 - act as bank for government and for large commercial banks

 - Section 13(3) of the Federal Reserve Act – make loans

 - treat Central Bank as an independent part of Federal government

* 1. **Rest of the World** - NX = X - Im

 - another sector similar to household sector

 - purchase goods and services

 - provide goods and services

 - provide capital Sf = Im - X - capital inflows

 US is a net borrower from the rest of the world

1. **Accounting Identities**
* **Income Expenditures Identity** ( Flow identity)

 Sources Uses

 Y = C + I + G + X + R\*Bg + F = C + Sp + T + Im

 Terms can be resorted to yield interesting pairs

 (Sp - I) + (T - G - R\*Bg - F) + (Im - X) = 0 → Sp + Sg + Sf = I

 private credit govt. budget trade balance

* **Balance Sheet Identity**

 Assets - Liabilities = New Worth (stock identity)

 Can write as flow identity with change in each : Δ NW = Sp

 **Financing constraints** (Flow of funds)

 HH: Sp = Y + net factor payments from abroad + transfers - taxes - C

 = ΔM + Δ Bg + ΔV(equities)

 P P P

 Bus: Sb = profits - depreciation - dividends - taxes: (retained earnings)

 I = ΔK = Sb + external finance (bonds and equities)

 Govt: Sg = T - G - R\*Bg - F = - (ΔM + ΔBg)

 Let T = net taxes = T - R\*Bg - F for simplicity

 **Governmental Budget Constraint**

 Key all governmental expenditures must be paid for:

 G = T + ΔM + ΔBg

 P P

 National Savings: Sp + Sg = Y + NFP- C - G where NFP=Net Foreign Profits

Walras’ Law: If all markets but one clear, then that market must also clear. If one market features excess demand, then another must feature excess supply.

If Y > C + T + Im (output exceeds demand) then S >0 and can be put into financial assets (supply of funds exceeds demand of funds)

 [Md - Ms] + [ Bd - Bs] + [Vd - Vs] = 0

 Walras’ Law says we need only analyze all markets but one since the status of that last market can be determined from the above equilibrium condition.