

## Gross Domestic Product (GDP)

- Measure of aggregate "output"
- To combine outputs of goods and services, uses dollar values => nominal value

**GDP:** dollar value of *final* goods and services produced in a country for a given year

- Includes foreign-owned capital that produces goods in the US (vs. Gross National Product (GNP) which includes only US-owned capital)
- Must deal with *intermediate goods*, outputs of firms used as inputs by others - and not double count these => use **Value Added** only:

Value Added = (\$ output - \$ purchased inputs)

GDP can be calculated using either the:

**Expenditure Approach:** track \$ of output by measuring value of spending to purchase it

**Income Approach:** track \$ of output in terms of income created producing the goods & services

\*focus only on expenditure approach for tests\*

Basis for income approach: \$ value of output creates an *equal* \$ value of income - since profit defined as "balancing item"

Since output creates an equal amount of income, the potential to buy *all* of what is produced *always* exists  
=> Potentially capable of being *on* PPC always

Critical macro issues:

Q1: Why is not all output purchased?

Q2: How can this problem be corrected?

## EXPENDITURE APPROACH FOR GDP

- based on four spending categories

### **Personal Consumption Expenditure (C)**

- generally, spending by households
- most stable component of GDP (=2/3 of GDP)

Durable Goods: goods lasting 3+ years

Ex: autos, appliances, etc.

*Cyclical variable* - spending on these rises in recoveries and falls in recessions (income elastic)

=> Durable goods spending fluctuates more than the overall economy. Why?

These are **postponable** - can put off purchase and patch up existing durable goods when times bad  
- depends on interest rates, wealth, cons. confid.

### Non-Durable Goods

Services - secular (long-term) upward trend as we become ore of a service-oriented economy

### **Gross Private Domestic Investment (Ig)**

- generally, business spending

-most volatile component of GDP

Equipment and Software (equipment)

Business Structures (factory)

Together = **Non-residential Fixed Investment**

- very cyclical - depends on interest rates and expected future profit
- most volatile component of GDP

Residential Construction - new home construction

- is investment since treated as giving benefits over many years (opportunity cost basis)
- cyclical - depends on income & household debt

Q: What about goods produced but not bought in a given year? (i.e., inventories)

A: Account for these - only part made *that* year

### Change in Private Inventories

### **Government Consumption Expenditures and Gross Investment (formerly Government Purchases of Goods & Services (G)**

- Approximate value of government "production" by value of inputs used (mostly labor)

Federal and State/Local - largest part

Government Purchases (G) - NOT the same as total government spending (Tot G):

Tot G: = G + Transfer Payments (entitlements)

**Transfer Payments:** transfers of income

Ex: welfare, Social Security, Unemploy Insurance  
- called **Entitlement Programs** since government only sets terms for entitlement NOT \$ amount

Q: What determines \$ of transfer payments?

A: The state of the economy

- entitlement spending *automatically* rises in recessions and falls in recoveries

## **Net Exports (Balance of Trade) Xn**

- didn't limit C and Ig to domestically-produced  
=> need to make adjustments:

1. some goods made in US not purchased here, but in foreign countries - **EXPORTS** => ADD
2. some of what we buy not made in US - **IMPORTS** => SUBTRACT

$X_n = (\text{Exports} - \text{Imports})$  (\$ values only)

Add all this together to get GDP:

$$\mathbf{GDP = C + I_g + G + X_n}$$

- Correct for inflation get **Real GDP** - basis for economic growth calculations, define recessions

Rate of Growth = % change in Real GDP

- Depreciation occurs while goods produced - if net this out, get **Net Investment (In)**, use in place of Ig, get Net Domestic Product (NDP):

$$\mathbf{NDP = C + I_n + G + X_n}$$

There are other measures to always look at:

## **FINAL SALES of DOMESTIC PRODUCT**

- subtracts the change in private inventories from GDP
- measures goods actually produced and sold each period
- *gives a better view of actual spending that is currently taking place than overall GDP*
- *contrast growth rates of real GDP and Real Final Sales to see if growth is being driven by new production or inventory accumulation (previous production)*

## **GROSS DOMESTIC PURCHASES**

- GDP minus net exports =  $\text{GDP} - (X - M) = \underline{\text{GDP} - X + M}$  (think of this also as C + I + G only)
- reflects total purchases by US residents *no matter where the goods were produced* (since adds imports)
- *strong growth in this signals spending momentum by US consumers and firms*

## **FINAL SALES TO DOMESTIC PURCHASERS**

- = gross domestic purchases minus the change in private inventories
- reflects spending by US households and business on goods/services no matter where they were produced
- when this is strong and growing, it signals economic and spending momentum