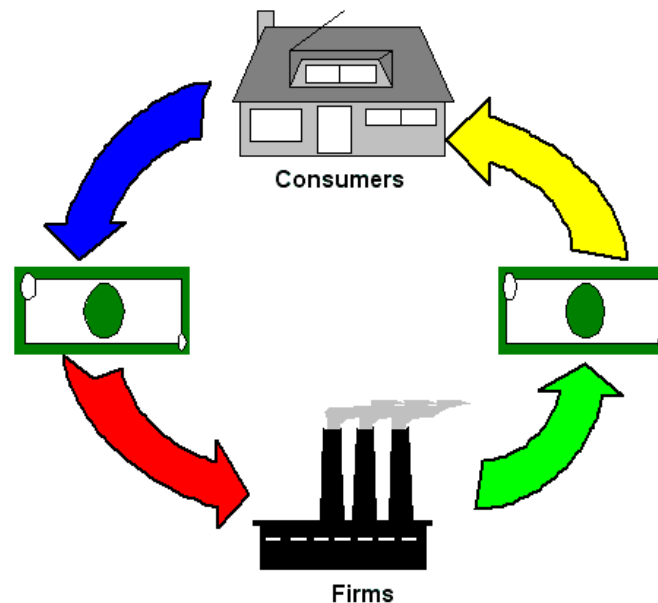


The Money Goes Round: Understanding the Circular Flow of the Macroeconomy

Money has been called the “lifeblood” of an economy. This metaphor is appropriate because just as blood circulates through the body helping cells exchange oxygen, food, and waste chemicals, so, money circulates throughout the economy. Although exchange of goods and services is possible with money (a situation we call barter), money makes the process easier.

The primary flow of money is in circular fashion from consumers to producers (firms), and then back again. In its simplest form, this circular flow is represented as money flowing from consumers (Households) to producers in exchange for the goods and services consumers want to consume, such as food, housing, recreation, and all our other goods. But, in order to produce the goods the firms must buy resources such as labor from households. Firms pay for the use of their resources with money the firms receive from selling the goods. Once the household has been paid for the use of their resources, the cycle is complete and households once again have money to spend on goods, starting another round around the economy.

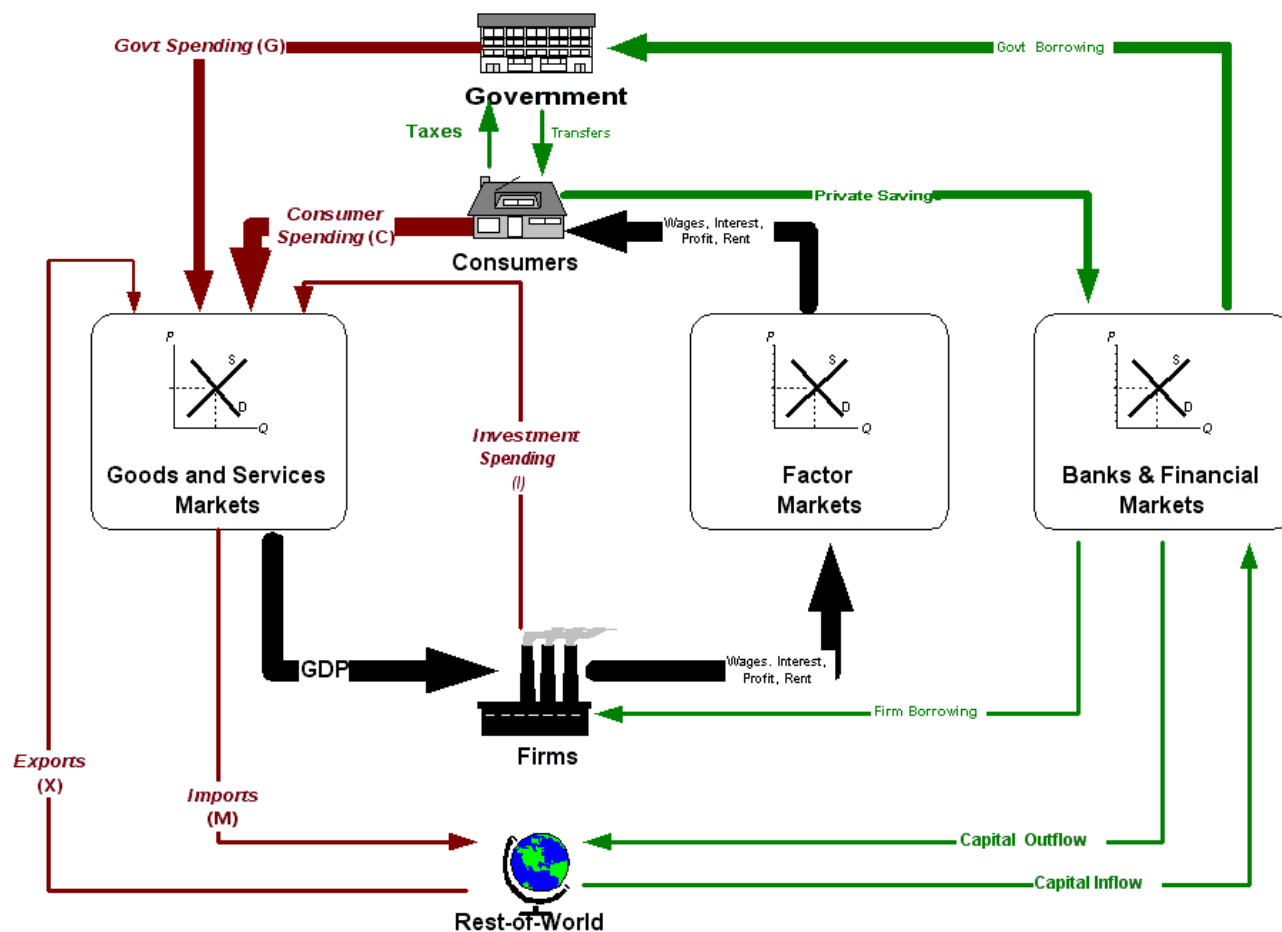


The Circular Flow of A Modern Economy

Of course, a modern macro-economy is very complex and a complex flow of money. But, even though it is more complex, it is essentially still a circular flow.

At the right is a diagram of the circular flow of a modern economy. Understanding this diagram will prove very helpful in understanding macro theories and other topics later in the course.

To make sure you understand this diagram we will “build” it up piece-by-piece in this tutorial. Try to pay [particular attention to the names of particular flows, markets, and agents. These names and terms will constitute the language of macro-economics. The better you understand what they mean and where they fit into the structure of the economy, the easier it will be read the textbook, learn the material, and get a better grade.



Agents in the Economy

Of course, in reality, there are thousands, even millions of different “markets” in the economy. But, it is necessary to *aggregate* data in macroeconomics. *Aggregation* means grouping things together so that we have a manageable amount of data.

We start defining the circular flow by defining four *agents*, or types of decisionmakers in the economy. Out of the literally millions of individuals who buy and sell in the economy, we aggregate them all together into four types:

- Households (consumers)
- Firms (producers of goods & services)
- Government
- ROW (which stands for rest-of-world: all the other people in the world not in this country).



Government



Consumers



Firms



Rest-of-World

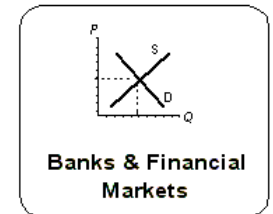
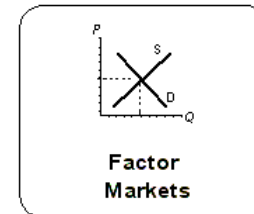
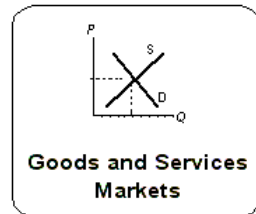
Markets: Places to Buy and Sell

The four types of agents we just identified (*households, firms, government, and ROW*) interact with each other in markets. In other words, they buy and sell goods and services. They loan and borrow money. Technically, loaning and borrowing money is also selling and buying. It's viewed as selling/buying the use of a quantity of money for a period of time. The price of a loan is the interest rate.

For macro theory purposes, it is useful to divide all markets into three types:

- Goods Markets
- Resource Markets (also called factor markets)
- Financial Markets (also called capital markets by some)

These 3 types are distinguished by who is doing the buying or selling, and whether they are buying or selling real goods/services, or are they buying/selling the use of money.



Agents One-at-a-Time: Consumers (Households)

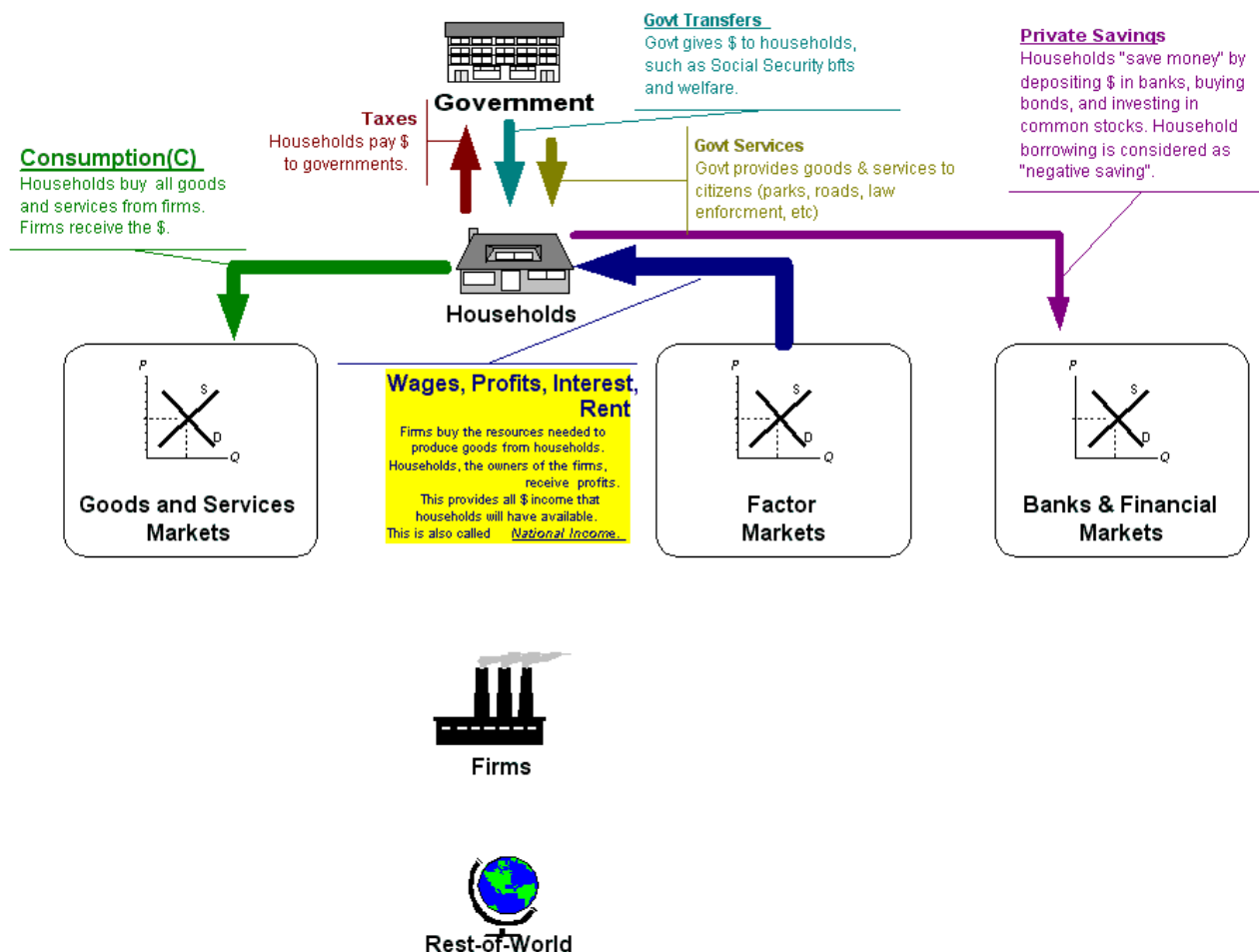
In macro, everything starts with the consumer, or what we call *households*.

The amount money a household owns at any particular moment is called it's wealth – stock variable.

What we are looking at here are the flow variables – the ways in which household wealth increases or decreases. In other words, the ways in which households pay out money or receive money.

Households payout money in three ways:

- Buy goods and services in the goods markets – this flow is called **Consumption** and is abbreviated as “C”.
- **Save** money by depositing it in banks, buying bonds, or buying financial investments. This is noted as “S”.
- Pay **taxes** to the government. This is noted as “T”.

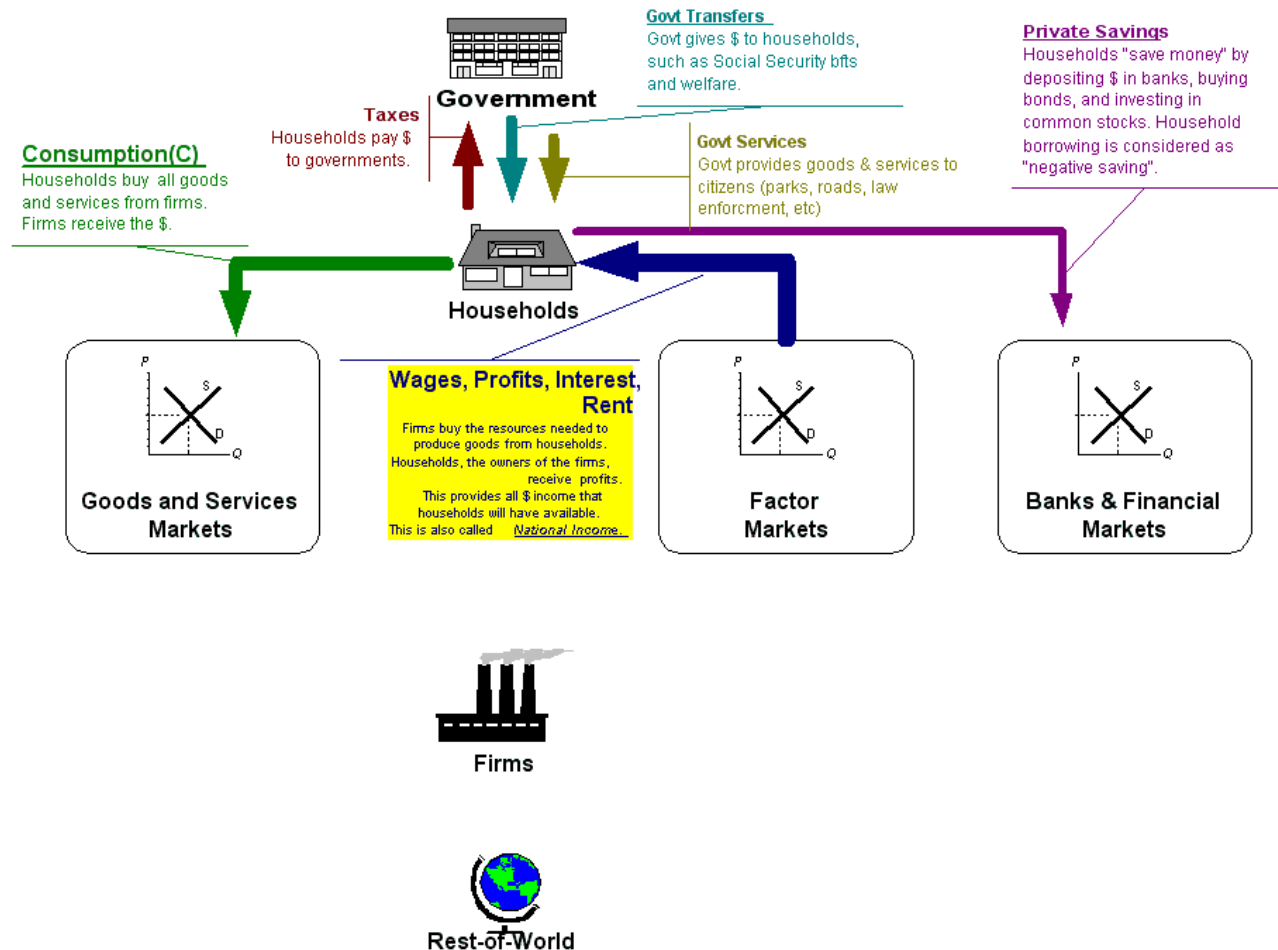


Households, continued

Households, of course, cannot keep buying goods, saving money, and paying taxes unless they have a steady in-flow of money. Households have two primary in-flows of money:

- **Income** from selling the use of household-owned resources in the factor market. Typically what is sold is labor or the use of land or money. This income flow is made up of *wages, profits, interest, and rent*. If wages, profits, interest, and rent are totalled together, it is called “income”. The total number for the nation is called *national income*.
- Government Transfers are another source of money in-flow for some households. The largest of such transfers is social security benefit payments.

Households face a budget constraint. In other words, these three outflows (C, S, & T) must equal the inflows (Income + Transfers) over the long-run. In the very short-run, it’s possible for outflows to exceed inflows, but when that happens the households must spend their wealth. Eventually they run out of wealth to spend (a phenomenon you may be familiar with).

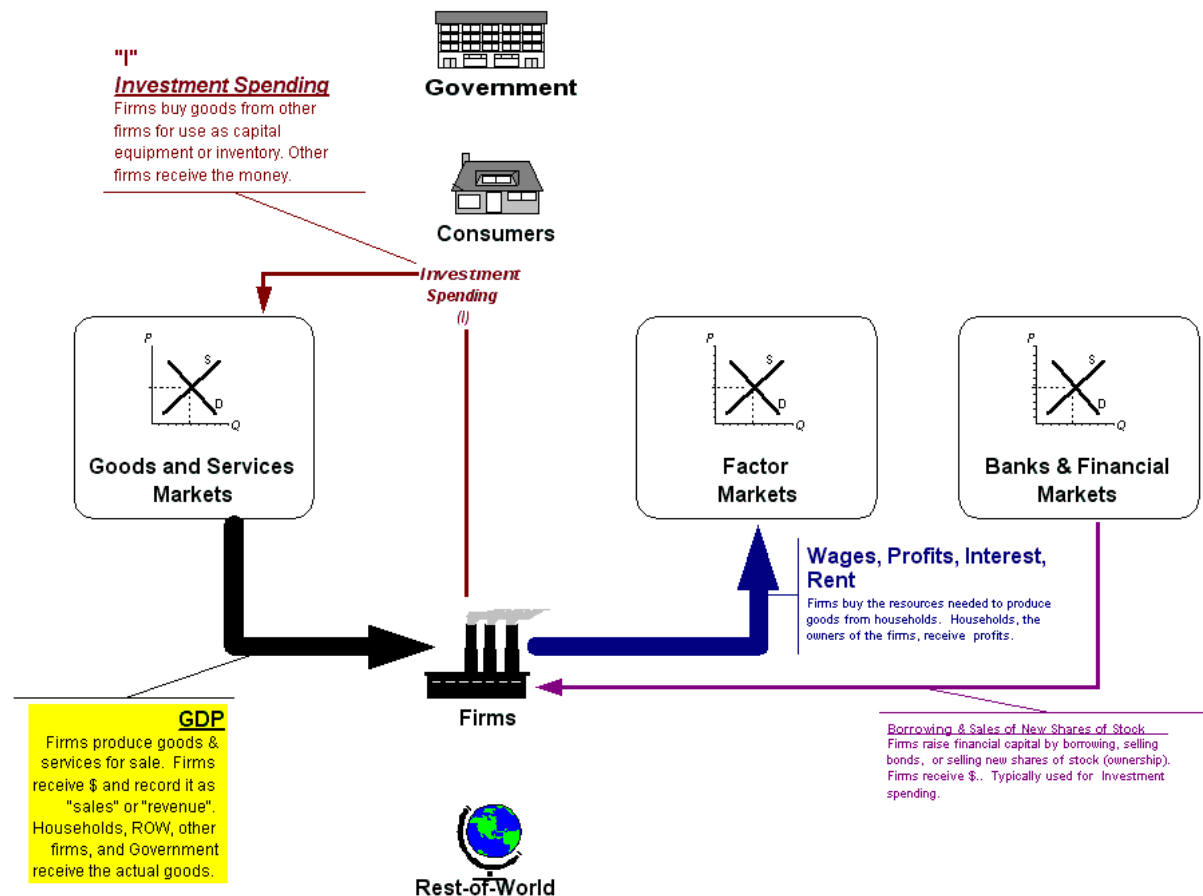


Agents: *Firms, the producers of goods and services*

The primary function of firms is to produce goods and services for consumers. As a result, firms are like a giant money pipe: they sell goods which brings the money in, but then they pay the money out in factor markets paying workers and owners.

The total value of the goods and services produced by all firms in the nation is called Gross Domestic Product (GDP). This is probably the most important single variable in macroeconomics. It is a measure how much/many goods we produce for our consumption. Our living standards as consumers cannot increase unless the firms produce the goods. So increasing GDP is seen as good.

Firms also have two other money flows which we will look at on the next page.



Firms must Invest

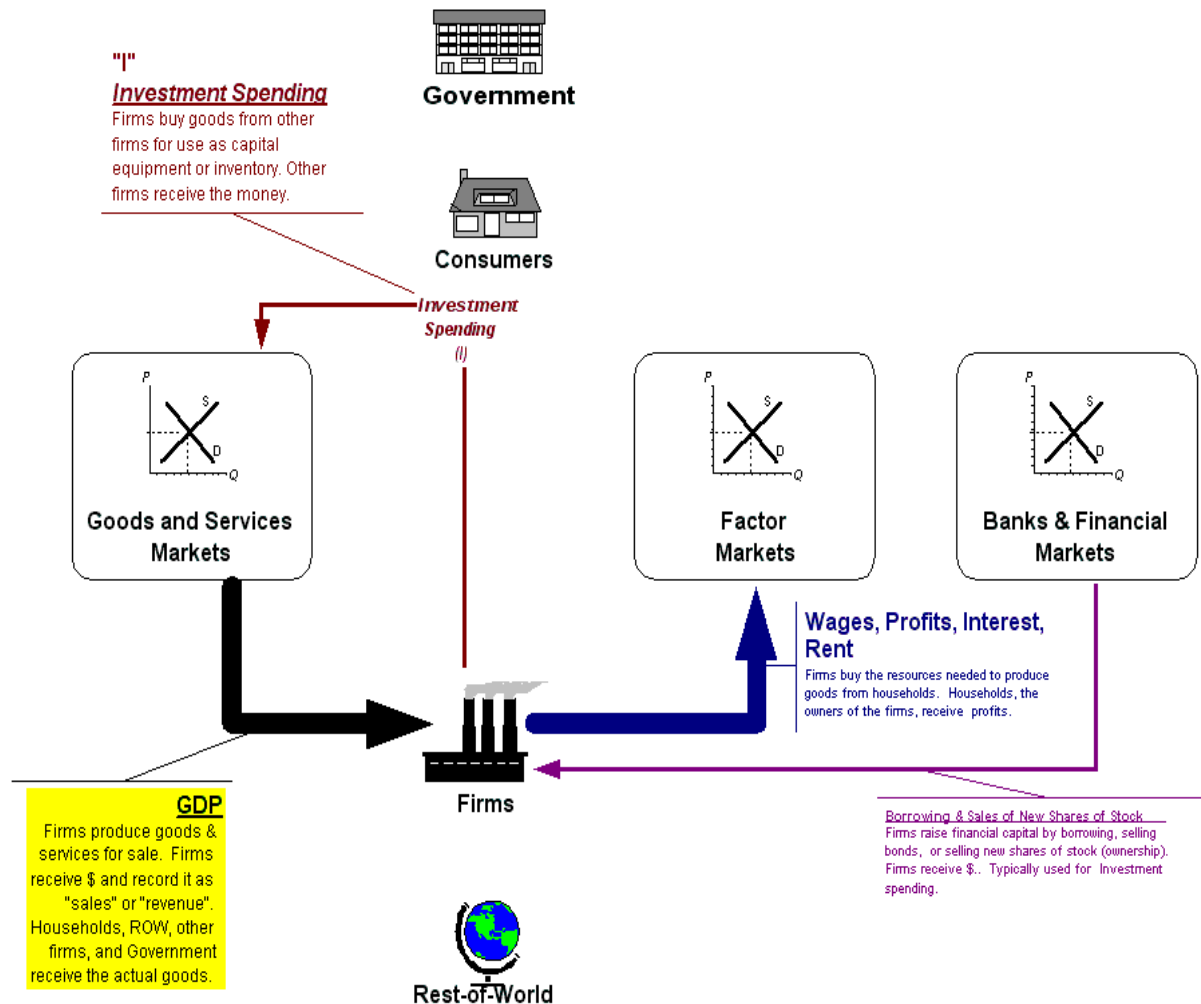
Besides producing and paying workers/owners, firms must also **Invest**. In economics, investment means:

- Buying machinery, equipment, and software
- Adding to finished-goods inventory
- Buying *new* housing.

This outflow is called **investment spending** and is denoted as “**I**”.

Of course, investment is an out-flow of money from firms. Firms find the money to pay for investment spending by selling new issues of stocks and bonds, or by borrowing from banks and financial markets.

Firms also face a budget constraint: the total payments (wages, profits, interest, rent) + investment spending must = total sales of goods (GDP) + borrowing.



Another agent: Government

Government is different from consumers and firms. Although government provides goods and services, it usually doesn't charge for them. So, when looking at the money flows for government, there are four, two inflows and two outflows.

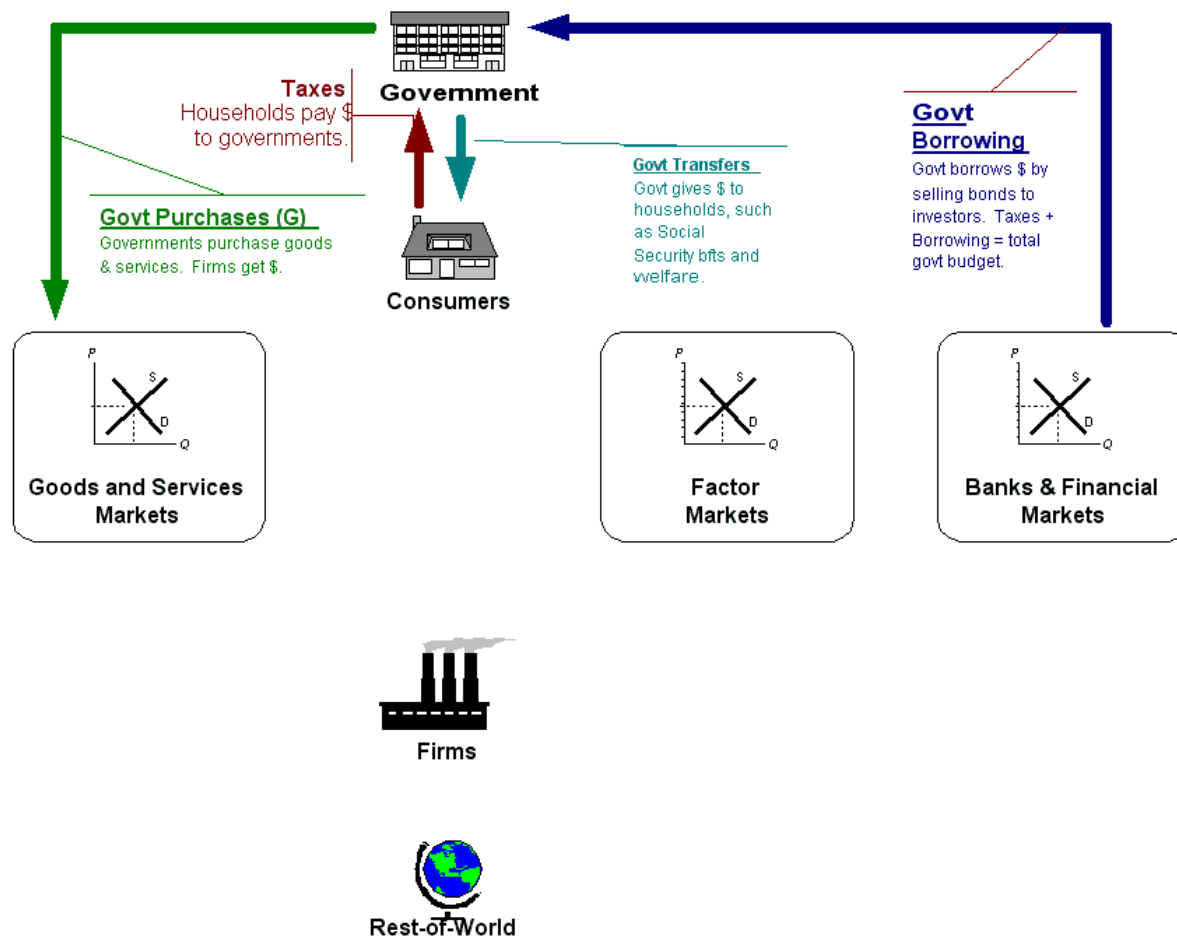
- **Government Purchases (G)** of goods and services (G) is a major outflow. This happens when the gov't. actually gets goods in return for money payments, such as buying airplanes or school buildings.
- **Government Transfers** also are a major outflow.

The two inflows are:

- **Taxes (T)** and
- **Government Borrowing** by selling bonds to financial investors.

The Government's budget constraint is that:

$$G + \text{Transfers} \text{ must} = T + \text{borrowing}$$

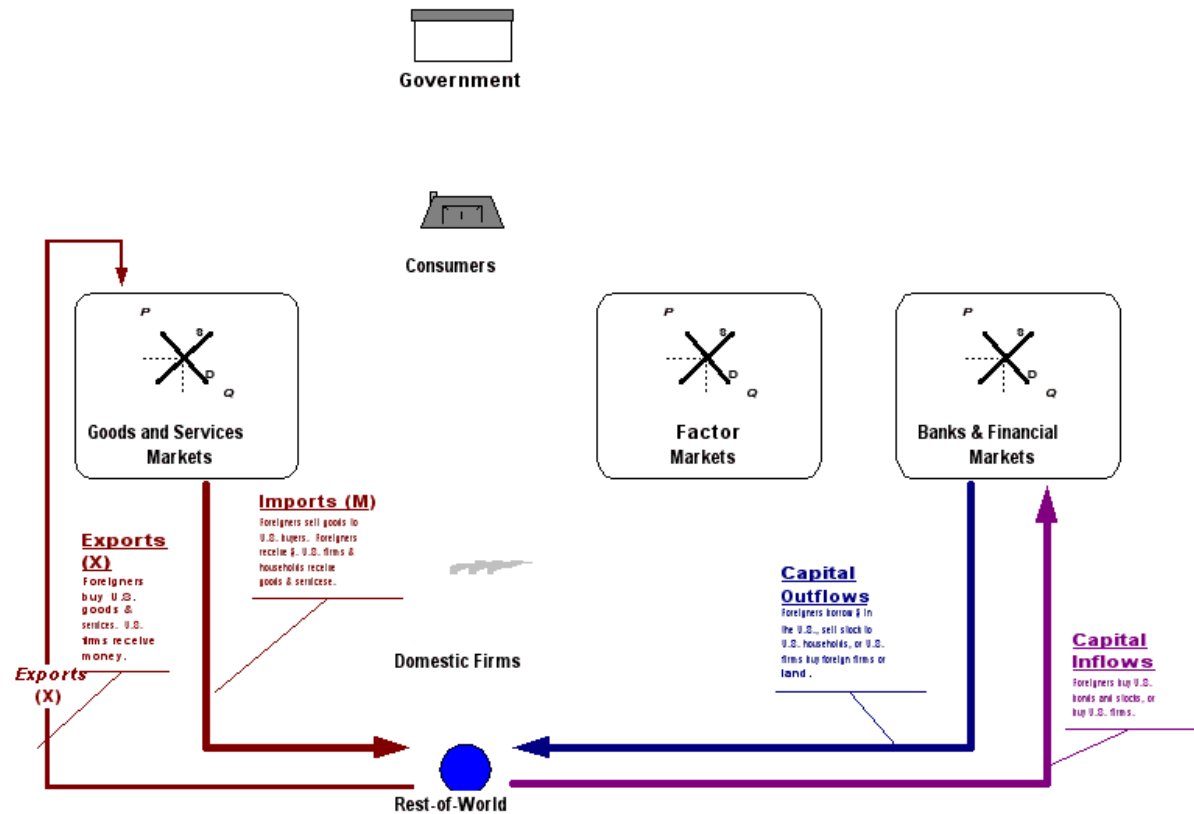


The Last Agent: ROW

Since in macroeconomics we are analyzing a nation's economy, we aggregate all other buyers/sellers from outside the nation into a category called **ROW**, which stands for *rest-of-world*.

Foreigners, or the ROW, can be involved in the economy on either the goods or financial side. In other words, when we buy foreign import products, money flows to ROW. When we sell export products to ROW, the money flows out from ROW and into our markets.

Foreigners may also either borrow in our financial markets by obtaining loans or by selling assets to US buyers. This is a money flow out from the US to ROW. The reverse can happen when foreigners lend money to US borrowers or they buy US bonds or assets.



Another look at each market: Goods markets

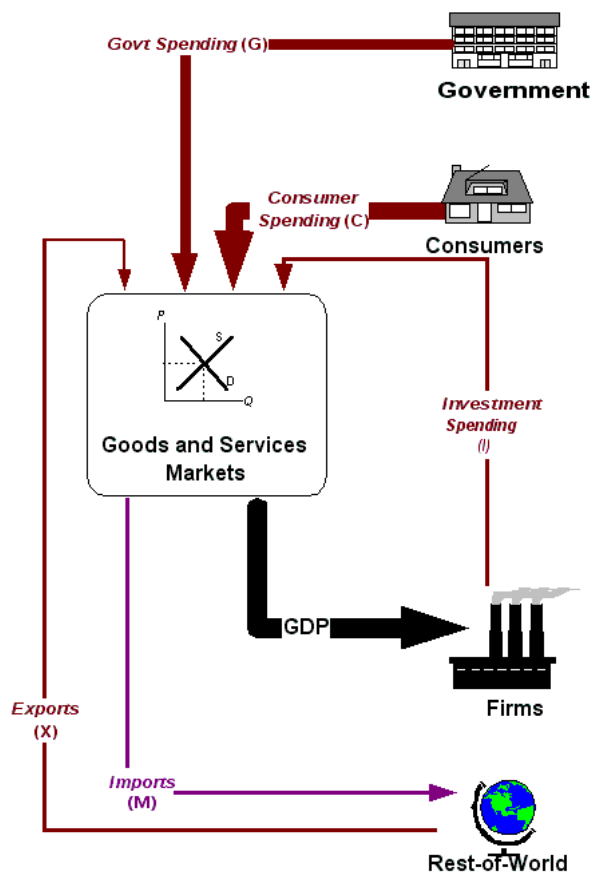
Besides looking at each agent separately, we can take a closer look at each market.

The most interesting market is the Goods and Services Markets, which I usually just call the Goods market.

The total value of all goods produced each year is called GDP.

This GDP can be computed by adding together all of the spending on the goods. This leads to the $GDP = C + I + G + (X - M)$ relationship. This is a critical relationship that you should commit to memory.

At any point in time, this relationship MUST be true. This means that if you are given values for five of these six variables, you can calculate the other.



Total Spending must equal
Total Value of Goods Sold (GDP):
therefore,

$$GDP = C + I + G + (X - M)$$

If you add:

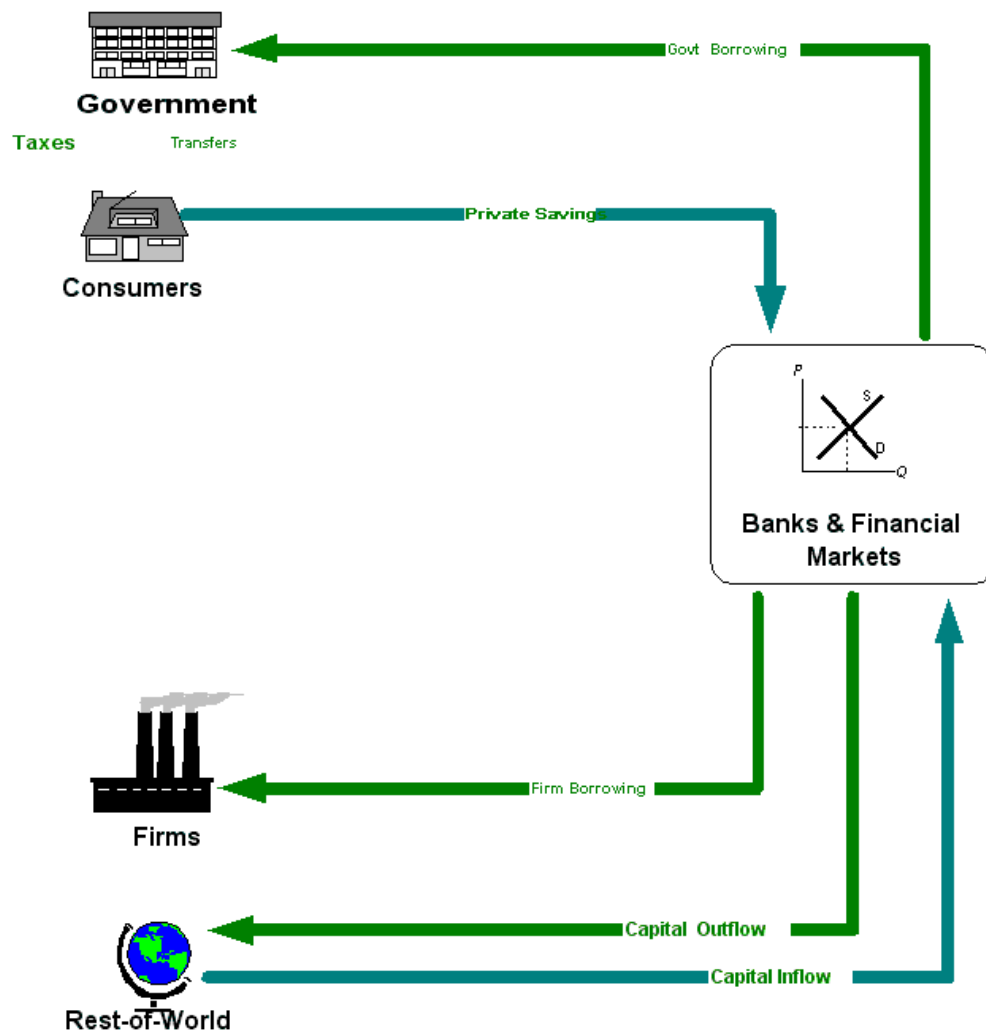
Consumer Spending
+
Investment Spending
+
Government Spending
+
Foreign Spending on Exports
-
Our spending on Imports
= **GDP**

Another Look: Financial Markets

We can also take a closer look at financial markets. *Remember that interest rates are the “price” paid by a borrower for the use of money for a year.*

These markets are competitive and prices (interest rates) adjust to bring the supply of loanable money into equilibrium with the demand for loans.

Strictly speaking, any of the four agents could be either a borrower (buyer) or a lender (seller) in this market. Typically in recent decades, though, firms and the government are net borrowers, meaning they get money from the markets, while consumers are usually net savers. Exceptions have occurred, though. In 2005, consumers in the US were net borrowers (US Savings was negative). Foreigners could be borrowers or lenders at any time.



Putting it altogether.

Now we can return to the full view of the economy as shown here again.

For the economy to continue to function and provide jobs and goods for people, the money has to continue to go around.

Most of the theories we will examine later in the course are actually stories about what happens when this circular flow of money is interrupted, or if money gets diverted, or if it “leaks” out of the system.

For example, let’s think about a recession. A recession is a decline in GDP. If GDP declines, then spending must have declined (C, I, G, X, or M). If GDP declines, then Income will decline. If income declines (people lose jobs), then consumers have less money to spend, which could make the recession worse. But that’s for later Units!

