The Components of Aggregate Demand/ National Income

In the previous handout we said two things.

Macroeconomics Rule 4
The only reason firms produce goods and services is because they believe they can make a profit by selling them. If you wish to increase National Income, you have to increase the amount that people wish to buy. You have to increase demand. In short the economy is "demand driven"

Macroeconomics Rule 5
We say that the economy is in Macroeconomic Equilibrium when National Output (National Income) is equal to Aggregate Demand **AD = Y**

Putting these two rules together, we see that if you increase Aggregate Demand, National Income increases and we all are richer. Therefore, according to the Irish Leaving, just increase spending and we are richer. Don't forget, that in the leaving cert, we are always talking about an economy in equilibrium, so we can use the terms ***Aggregate Demand*** and ***National Income*** interchangeably.

What we are coming onto now are the three different ways of measuring or interpreting or showing Aggregate Demand and as such National Income. Again, if Aggregate Demand increases National Income increases and if Aggregate Demand falls National Income falls.

<u>The Three Ways of Measuring Aggregate Demand are:</u>

1) The Aggregate Demand Curve

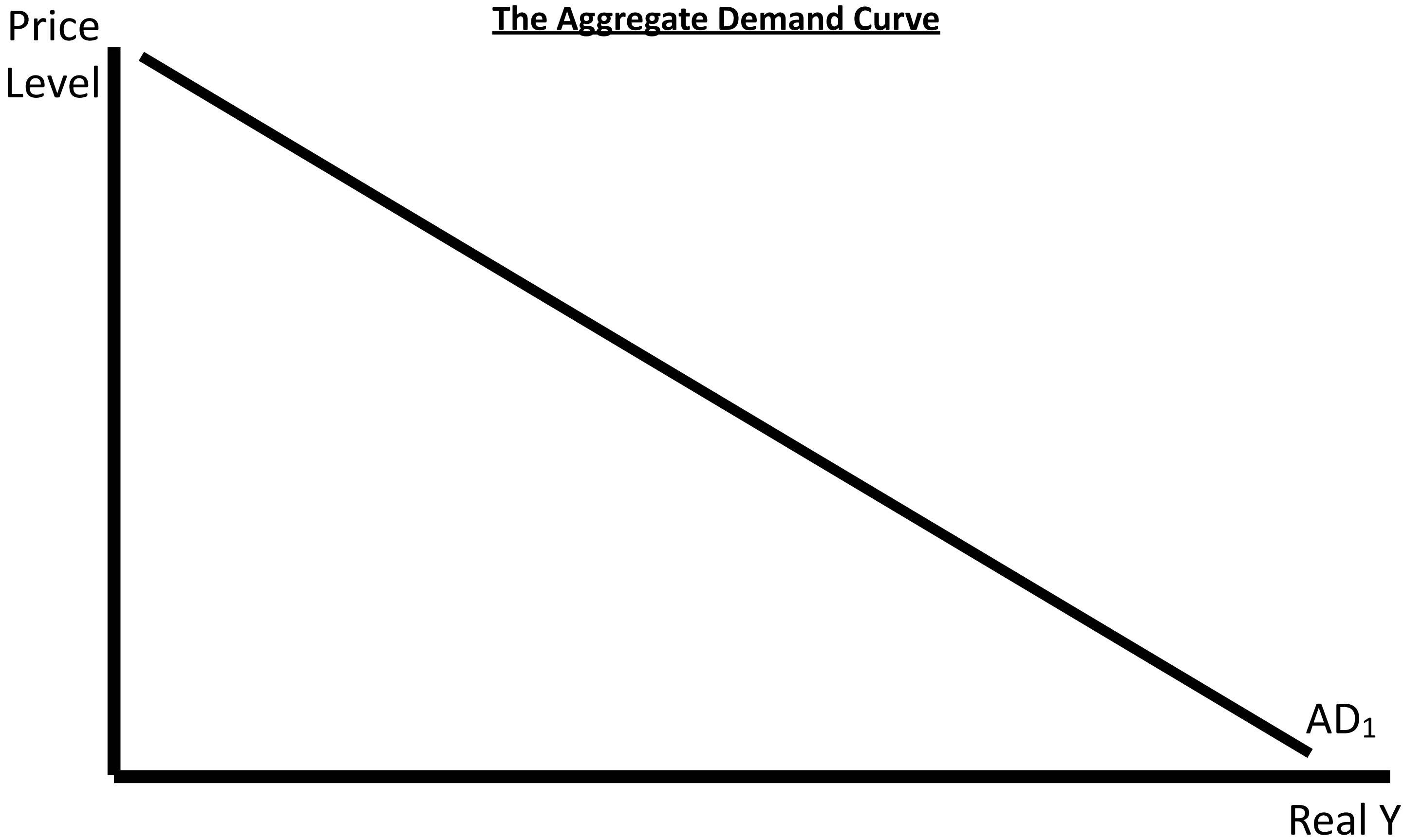
2) AD = C + I + G + (X - M)

3) The Circular Flow of Income Diagram.

These are three different ways of looking at the exact same thing which is the desire and ability of households, firm, the government and foreigners to buy domestically produced goods and services.

If people become more willing and able to buy Irish produced goods and services (if Aggregate Demand increases) then National Income rises. If people become less willing and able to buy Irish produced goods and services (if Aggregate Demand decreases) then National Income falls.

The Aggregate Demand Curve



Again, here we have the Aggregate Demand Curve. The Price level is on the vertical axis (if the price level rises then there has been inflation, or at least a reduction in deflation. If the price level falls, there has been deflation or at least a reduction in inflation). On the horizontal axis is Real National Income (Real Y). The further out to the right on this axis, the more goods and services being produced and as such the richer the country is.

The Aggregate Demand Curve represents the quantity of Irish produced goods and services that households, firms, the government and the rest of the world, wish to buy at each price level.

The reason that the Aggregate Demand curve slopes downward ***is not*** the law of demand. The law of demand only applies to a single good. As the price of a single good rises, consumers stop buying that good and switch to buying other goods.

However, if the price level rises, that means the price of everything is going up and consumers cannot switch to buying other goods if the price of everything is going up. The reason that the Aggregate Demand curve slopes downward is because consumers can't afford to buy as much as they did previously following a rise in inflation. If inflation occurs, then consumers are poorer in real terms as there income (which has not changed) cannot buy the same amount of stuff that it did previously.

The Aggregate Demand Equation

Another way of looking at Aggregate Demand is to put every euro of expenditure into one of five categories. Aggregate Demand is divided into 5 components. These components are

1) The money that is spent on Consumption (C).
2) The money that is spent on Investment (I)
3) The money that is spent by the Government (G)
4) The money that is spent on Exports (X)
5) The money that is spent on Imports (M)

In order to make this relationship between all the components and Aggregate Demand easier to see, economists have put these components into an equation.

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

This equation is an identity. An Identity is an equation that must be true by the way the variables in the equation are defined. In this case, because each euro of expenditure included in Aggregate Demand is placed into one of the five components of Aggregate Demand, the total of the five components must be equal to Aggregate Demand. We will now look at each of the five components in detail.

While it is a good idea to be aware of what is included in each of these components, it is not necessary to learn them off. However, you do need to know, off by heart, what factors influence the size of each of these components.

Consumption (C)

Consumption is spending by households on goods and services. “Goods” include spending by households on durable goods like cars, fridges etc and non durable goods like food and clothing. “Services” include such intangible items like haircuts and solicitors services.

Factors that determine the amount of Money spent on Consumption in an Economy

1) **Levels of Incomes:** as income rises, the level of spending tends to rise.
2) **Marginal Propensity to Consume (MPC):** the higher the MPC, the higher will be the level of spending.
3) **Availability of Credit:** as credit becomes more easily available, borrowing rises and as such, the level of spending will rise.
4) **Rate of Interest:** A rise in interest rates causes borrowing to fall. A decrease in borrowing causes spending to fall.
5) **Rates of Taxation:** if taxes increase, disposable income falls and spending will fall.

Investment (I)

Investment is the purchase of goods that will be used in the future to produce more goods and services.

Investment (Capital Formation): Refers to the production or purchase of Capital goods

It is the total of purchases of capital equipment, inventories and structures. Investment in structure includes the spending on new housing.

The treatment of inventory is something somewhat unusual. When Apple produces a computer and, instead of selling it, Apple adds the computer to it's inventory; Apples is assumed to have "purchased" the computer for itself. This means that national income accounts treat the computer as part of Apple's investment spending. If Apples then sells the computer out of inventory, Apple's inventory investment will be negative, offsetting the positive expenditure of the buyer.

Inventories are treated this way because one aim of National Income is to measure the value of the economy's production and goods added to inventory are part of that production.

Factors that determine the amount of Money spent on Investment in an Economy

1) **Rate of Interest / MEC:** As interest rates rise, borrowing becomes more expensive and investment tends to fall.
2) **Expectations of business people:** Are they optimistic about the future? Does government policy favour risk taking; are the levels of taxation conducive to risk-taking etc. If business people believe that there is a positive economic future then they will take the risk of setting up a business, in order to produce goods and services that people want.

Government Purchases (G)

Government Purchases includes spending on goods and services by local and national government. It includes the salaries of government workers and the spending on public works.

It is important that you are clear on what actually counts as government purchases. When the government pays the salary of a teacher, this salary is part of government purchases. However, when the government pays job seekers allowance to someone who is unemployed, this is not included as part of government purchases.

Such a government spending is known as a transfer payment as it is not a payment made in return for the supply of a factor of production. Transfer payments alter household income but they do not reflect any change in the production by the economy. Because National Income is intended to measure income from, and expenditure on, the production of goods and services, transfer payments are not counted as part of government purchases.

Transfer Payments: Payments received for which no factor of production has been supplied

Factors that determine the amount of Money spent on Government Purchases in an Economy

1) **Decisions of Politicians:** Primarily depends on the political decisions of the government and the type of fiscal policy being pursued by the state.

Exports (X)

Exports are the purchase of domestically produced goods purchased by foreigners. This is where money comes into Ireland and goods (computers, electronics etc) or services (financial or accounting services) leave the country. Exports are generally seen as good things.

However, all along the course, we have said that the wealth of a nation is decided by what is produced. The more that is produced in an economy, the wealthier that economy is as there are more goods and services to share among the residents of that country. But if we export goods and services, there is less available to share among the residents. So, how can imports be seen as a good thing.

The answer is that exports are seen as a form of national saving. Just ignore the idea of money for a second. If you give something to somebody, you expect them to give you something in return. The same is true on a massive scale for countries. When companies in Ireland sells goods and services to companies in other countries, they earn extra money which can then be used to buy goods and services of companies in that country in the future.

When a country exports they are consuming less than they produce now, in order to consume more than they produce in the future.

Factors that determine the amount of Money spent on Exports in an Economy

1) **Income levels in our Export Markets:** if foreign incomes rise then the demand for Irish exports may increase.
2) **Competitiveness of Irish Exports:** levels of domestic inflation v. international rates. If Irish produced goods become more competitive on export markets then foreign demand for Irish output may increase.
3) **Value of the Euro in Relation to Other Currencies:** If the value of the euro rises against the currency of our trading partners e.g. the US dollar / Pound Sterling, our exports become more expensive and fall.

Imports (M)

Imports are the domestic purchases of foreign goods. In National Income Statistics, imports are subtracted from Aggregate Demand/National Income. The reason that this is done is that the imports of goods and services are included in other components of National Income.

E.g. Suppose an Irish consumer buys a €30,000 car from Volvo, the Swedish carmaker. This transaction increases consumption by €30,000, as car purchases are part of consumer spending. But this car was not produced by Irish owned factors of production (and National Income is trying to measure the value of all the goods and services produced by Irish owned factors of production). So we need to subtract this amount from National Income. Therefore, consumption is up €30,000 and imports (a minus figure) is down €30,000, and Aggregate Demand/ National Income remains unchanged.

In other words, imports are goods and services produced abroad, are subtracted from Aggregate Demand because they are included in either Consumption, Investment or Government Purchases as a positive figure.

Therefore, when a domestic household, firm or government purchases a good or service from abroad, this good is added to National Income in either Consumption, Investment or Government Purchases and then is taken away from National Income in Imports, leaving National Income unchanged.

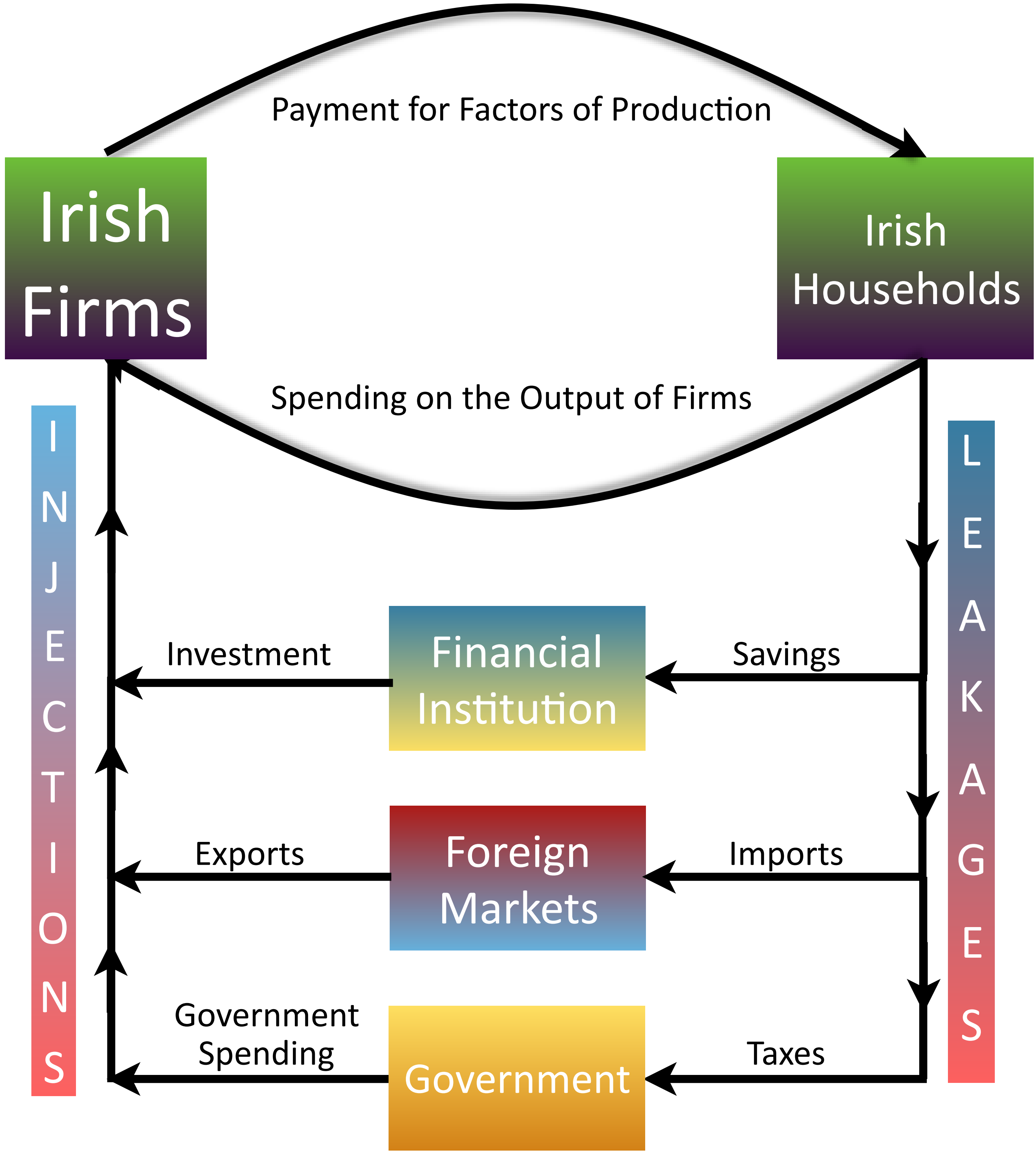
Factors that determine the amount of Money spent on Imports in an Economy

1) **Levels of incomes:** as income rises, the level of spending on imports tends to rise.
2) **MPM:** the higher the MPM the higher will be the demand for imports.
3) **Value of the Euro in Relation to Other Currencies** e.g. the US dollar / Pound Sterling.

The Circular Flow of Income (The Aggregate Demand Diagram)

The Circular Flow of Income is a diagram of Aggregate Demand. It traces the flow of the overall money spent in an economy (Aggregate Demand). See the diagram below.

The Circular Flow of Income Diagram



Explaining the Circular Flow of Income

Looking at the top of the Circular flow of Income diagram (the part just dealing with Irish Firms and Irish households), we can make the following points.

1) Households own the factors of production (e.g. Labour and Enterprise) and as such supply them to firms.
2) Firms pay households for the supply of these Factors of Production.
3) Households, in turn, spend their income on the output of firms. This then become the firms income.
4) This process continues over and over.

Financial Institutions

However, Households do not spend all of their income on the output of firms. Some of it is saved. This is a leakage from the Circular Flow of Income and reduces Aggregate Demand.

A Leakage: is a reduction in the circular flow of income. A leakage causes Aggregate Demand to fall.
Savings: The proportion of income not spent. It reduces spending within the economy and thereby reduces the circular flow of income

However, the incomes that households save can be used to provide the funds for firms to invest. This investment represents an injection in the Circular flow of Income and increases Aggregate Demand.

An Injection: is an increase in the circular flow if income. An injection causes Aggregate Demand to rise.
Investment: Money spent by individuals, financial institutions and businesses on the production or purchase of capital goods. It will increase the circular flow of income.

Foreign Markets

Even if households spend money on consumption, Some of this expenditure is spent on imports. This increases Aggregate Demand abroad, but reduces Aggregate Demand in Ireland. Imports reduce the Circular Flow of Income (Aggregate Demand) and are a leakage.

Imports: Money spent by Irish citizens on goods/services produced outside Ireland. It will reduce the circular flow of income.

Exports are goods that are produced in Ireland but are sold abroad. Exports represent an injection and as such increase the Circular Flow of Income (Aggregate Demand). They make the residents of a country richer. Exports are an injection.

Exports: Money spent by foreign individuals on goods/services produced within Ireland. It will increase the circular flow of income within Ireland.

The Government

Households cannot spend all of their income as some of their income is taxed and goes to the government. This money represents a leakage and reduces the circular flow of income. Government taxes reduce Aggregate Demand.

Taxes: A contribution required of persons, groups, or businesses for the support of a government. It reduces spending within the economy and thus reduces the circular flow of income.

When the government spends some of the money that it got from taxation, this is an injection into the Circular Flow of Income. Government spending increases Aggregate Demand.

Government Spending: All money spent by the government, both current and capital. It will increase the circular flow of income

Leakages and Injections

We have already discussed what a leakage is

A Leakage: is a reduction in the circular flow of income. A leakage causes Aggregate Demand to fall.

We said that there are three leakages

1) Savings
2) Imports
3) Taxes

We know from the definition that leakages reduce the Circular Flow of Income diagram and as such reduce Aggregate Demand.

We have also already discussed what an injection is

An Injection: is an increase in the circular flow if income. An injection causes Aggregate Demand to rise.

We said that there are three injections

1) Investment
2) Exports
3) Government Spending

We know from the definition of injections that they increase the Circular Flow of Income and as such increase Aggregate Demand.

We know that the Circular Flow of Income represents Aggregate Demand and in Equilibrium Aggregate Demand is National Income (AD = Y). Therefore we can say that if Aggregate Demand rises, that causes National Income to rise.

We will now answer a number of questions about Aggregate Demand and hence, National Income, using the Circular Flow of Income Diagram.

Outline the effect on the level of employment in the economy if leakages exceed injections.

If leakages are greater than injections then national income will fall, leading to a drop in demand for goods and services and thus a fall in the demand for labour. The level of employment will fall.

Outline the effect on the level of employment in the economy if injections exceed leakages.

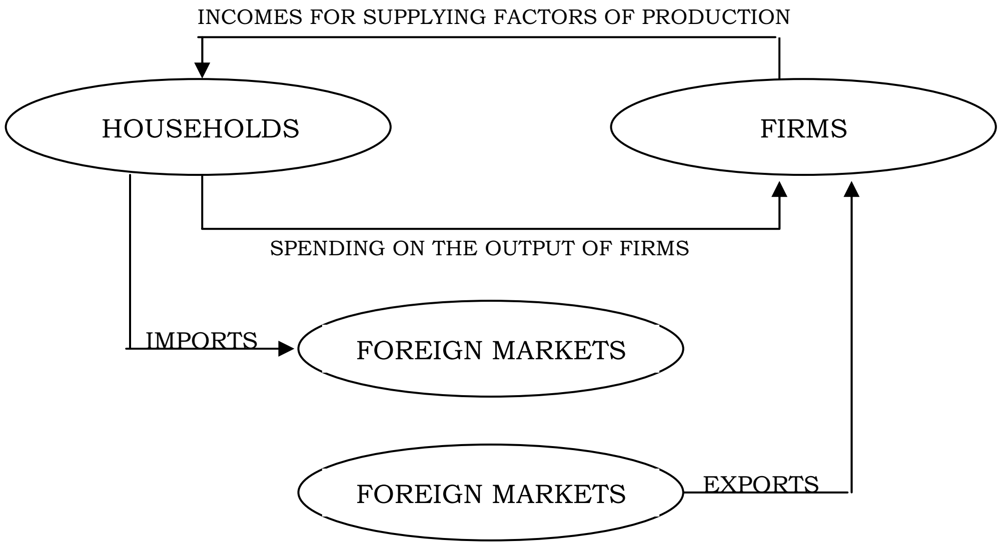
If injections are greater than leakages then national income will rise, leading to an increase in demand for goods and services and thus a rise in the demand for labour. The level of employment will rise.

Are transfer payments an injection into, or a leakage from the Circular Flow of Income? Explain your answer.

Transfer Payments: Payments received for which no factor of production has been supplied

Transfer Payments are an injection into to the circular flow of income. They become incomes for the recipients which they spend, and this increases aggregate demand.

‘Ireland is described as a small open economy and this affects the government’s ability to influence the level of aggregate demand in the country’. Explain this statement, using the Circular Flow of Income diagram to support your answer.



Explanation

1) As an open economy, Ireland is heavily dependent on imports and exports to achieve economic growth.
2) **Imports are a leakage:** If the government injects money (through C, I or G) into the circular flow, some of it will leave the economy due to the MPM and reduce the circular flow of income. Thus aggregate demand will not grow by the anticipated amount / aggregate demand will fall.
3) **Exports are an injection:** The government has little direct control/ influence over exports except through offering tax incentives to exporters. If demand for Irish exports increases then this will increase the circular flow of income. This will lead to extra income in Ireland and an increase in aggregate demand.
4) The ability of the government to influence aggregate demand is hindered by the extent of foreign trade, particularly imports. If imports exceed exports aggregate demand will fall. If exports exceed imports aggregate demand will increase.

Outline the expected effects which an injection of government spending into the economy, could have in each of the following cases:

1) **A closed economy at less than full employment;**
2) **An open economy at full employment.**

ANSWER: A closed economy at less than full employment

An increase of government spending increases people's income. This causes people to buy more goods and services (Aggregate Demand rises and Prices rise). With consumers buying more goods and services, firms hire more people to produce the extra goods now demanded by the consumers (Employment rises and National Income rises). As national income rises, people are richer and as such can afford to save more (Savings rise). They can't important more as the economy is a closed economy.

Only these points are necessary for the answer

1) Increase in level of Aggregate Demand.
2) Increase in the level of Inflation.
3) Increase level of National Income.
4) Increase in the level of Employment
5) Increase in the level of Savings within the economy

ANSWER: An open economy at full employment

An increase of government spending increases people's income. This causes people to buy more goods and services (Aggregate Demand rises and Prices rise). Consumers wish to buy more goods and services, but as the economy is at full employment, firms can't hire more people to produce the extra goods now demanded by the consumers. Domestic consumers turn to buying more imports in order to satisfy their increased Aggregate Demand (Imports Rise). As they are now richer (increased initial injection), the savings rate rises.

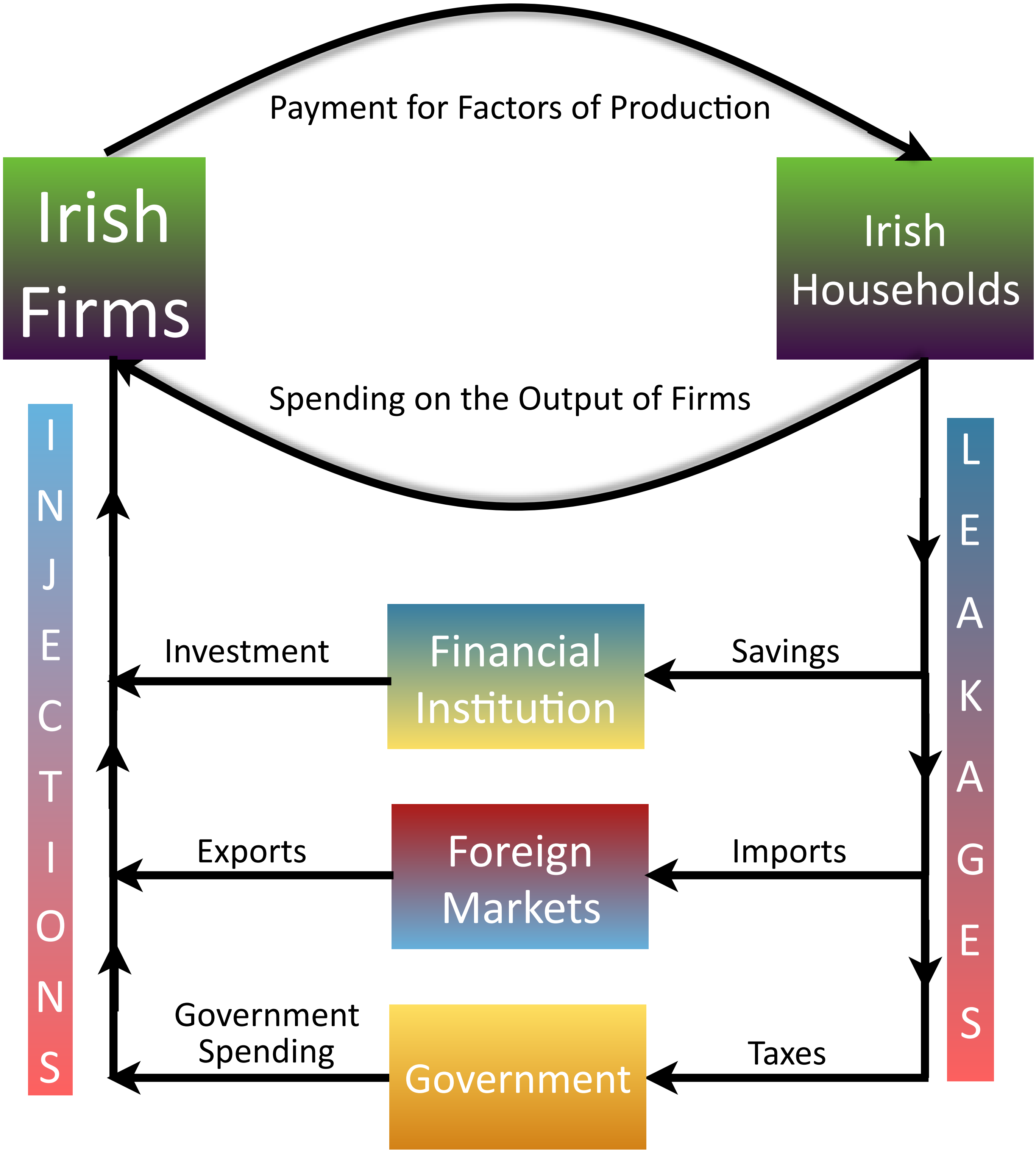
Only these points are necessary for the answer

1) Increase in level of Aggregate Demand
2) An increase in the level of Inflation
3) Increase in the level of Imports.
4) Increase in the level of Savings within the economy

When Answering a Question on The Circular Flow of Income

Looking through the packs, you should notice that some of the diagrams required for the Circular Flow of Income change, and the question can then become what is required for each question? My suggestion to you is, no matter what question comes up, at the very least draw the diagram and write the following.

Circular Flow of Income



Explanation

Injections

1) **Investment:** Money spent on Capital goods. It will increase the Circular Flow of Income.
2) **Exports:** Money spent by foreign individuals on goods and services produced within Ireland. It will increase the Circular Flow of Income within Ireland.
3) **Government Spending:** All money spent by the government, both current and capital. It will increase the Circular Flow of Income within Ireland.

Leakages

1) **Savings:** The proportion of Income not spent. Savings reduces spending within the economy and thereby reduces the Circular Flow of Income.
2) **Imports:** Money spent by Irish citizens on goods and services produced outside of Ireland. Imports reduce the Circular Flow of Income within Ireland.
3) **Taxes:** A contribution required of persons, groups or businesses for the support of the government. It reduces spending within the economy and thus reduces the Circular Flow of Income.

When answering a question on the Circular Flow of Income, draw the diagram on the previous page and make the points listed above and you have definitely received most of the marks irrespective of the question.

There is usually a (b) part to the question which will be one of the questions listed on pages 11 - 13.

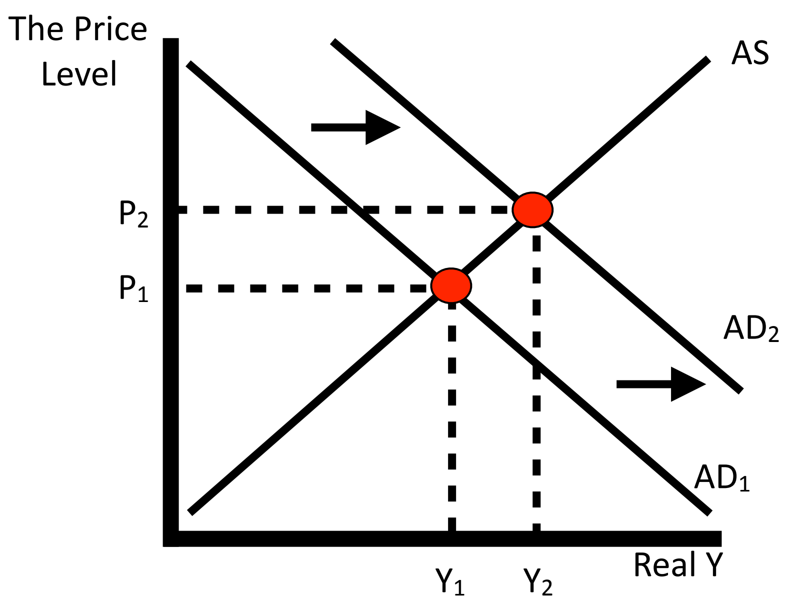
The Aggregate Demand Equation and the Aggregate Demand Curve

We have three different measures of Aggregate Demand and a number of rules about the economy based on Aggregate Demand.

Looking at the Aggregate Demand equation AD = C + I + G + (X - M), we have to look at the different factors that influence each of these components. Then we look at the diagram below.

Aggregate Demand Rises if

Consumption	Investment	Gov. Spending	Exports	Imports
Income ↑	Expectations ↑	Decisions of Politicans ↑	Foreign Incomes ↑	Irish Income ↓
MPC ↑	Rate of Interest ↓		Irish Competitiveness ↑	MPM ↓
Availability of Credit ↑			Value of Euro ↓	Value of Euro ↓
Rate of Interest ↓				
Tax ↓				

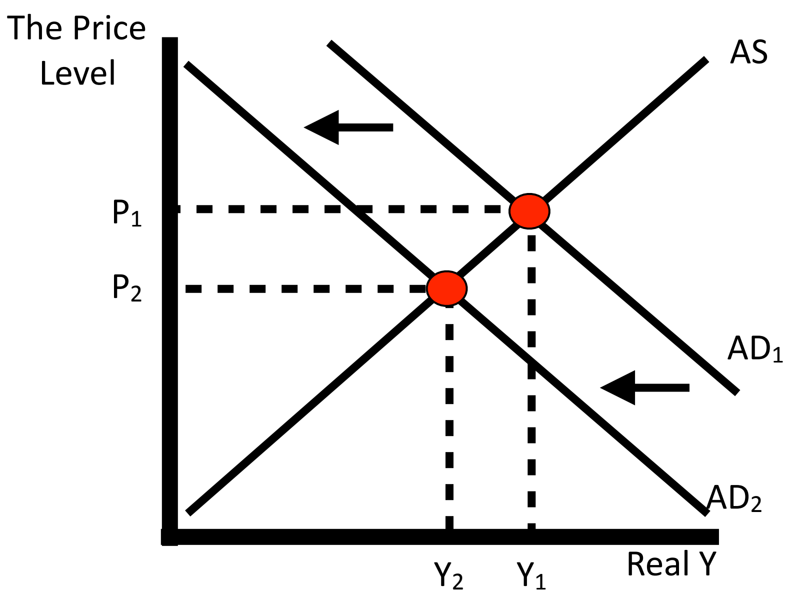


Effect

1) AD ↑
2) P ↑
3) Y ↑
4) Emp ↑
5) Sav ↑
6) Imp ↑

Aggregate Demand Falls if

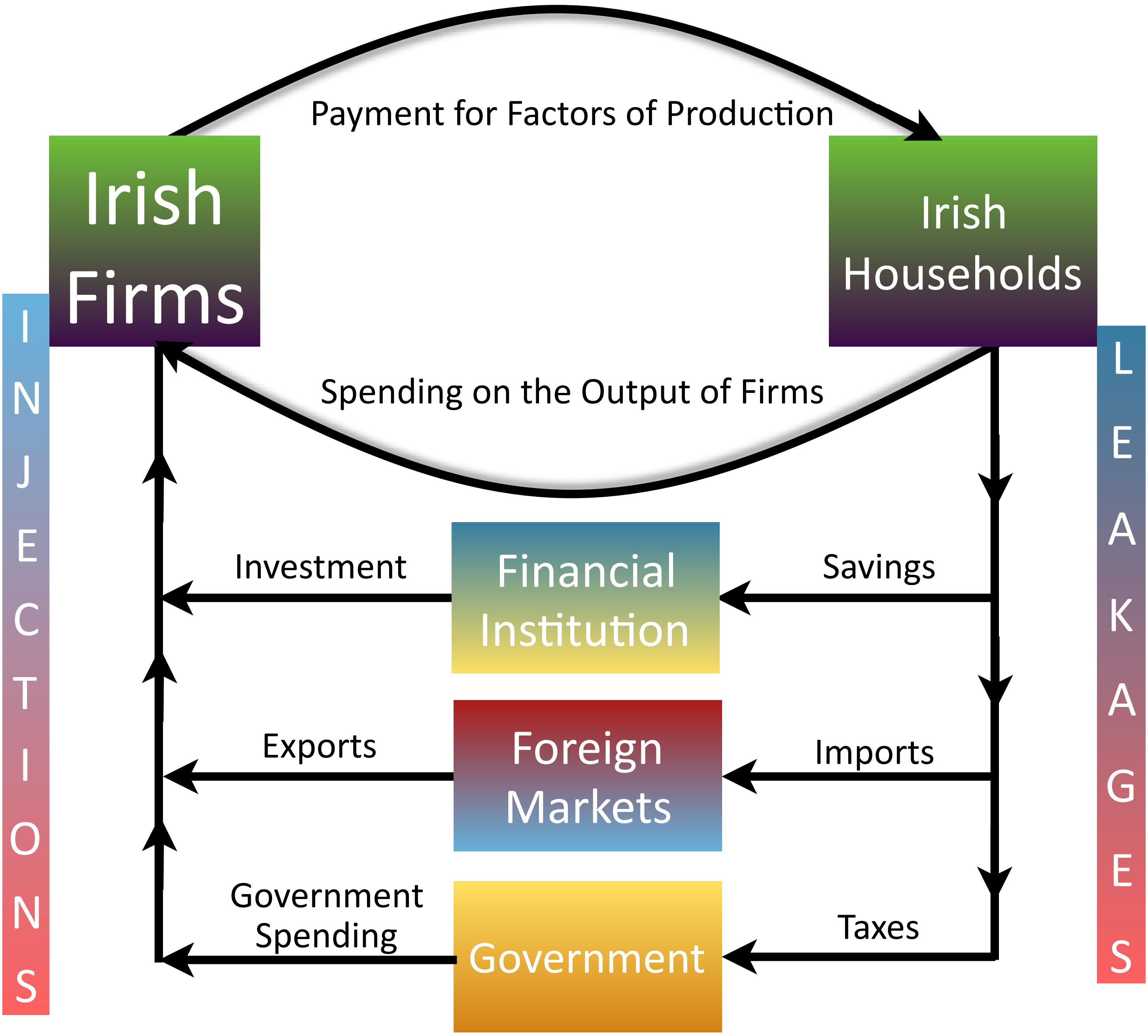
Consumption	Investment	Gov. Spending	Exports	Imports
Income ↓	Expectations ↓	Decisions of Politicans ↓	Foreign Incomes ↓	Irish Income ↑
MPC ↓	Rate of Interest ↑		Irish Competitiveness ↓	MPM ↑
Availability of Credit ↓			Value of Euro ↑	Value of Euro ↑
Rate of Interest ↑				
Tax ↑				

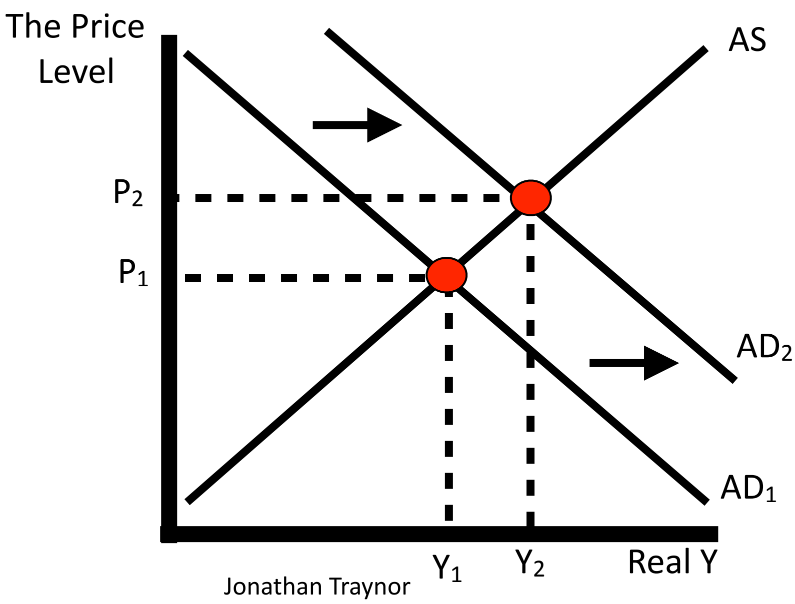


Effect

1) AD ↓
2) P ↓
3) Y ↓
4) Emp ↓
5) Sav ↓
6) Imp ↓

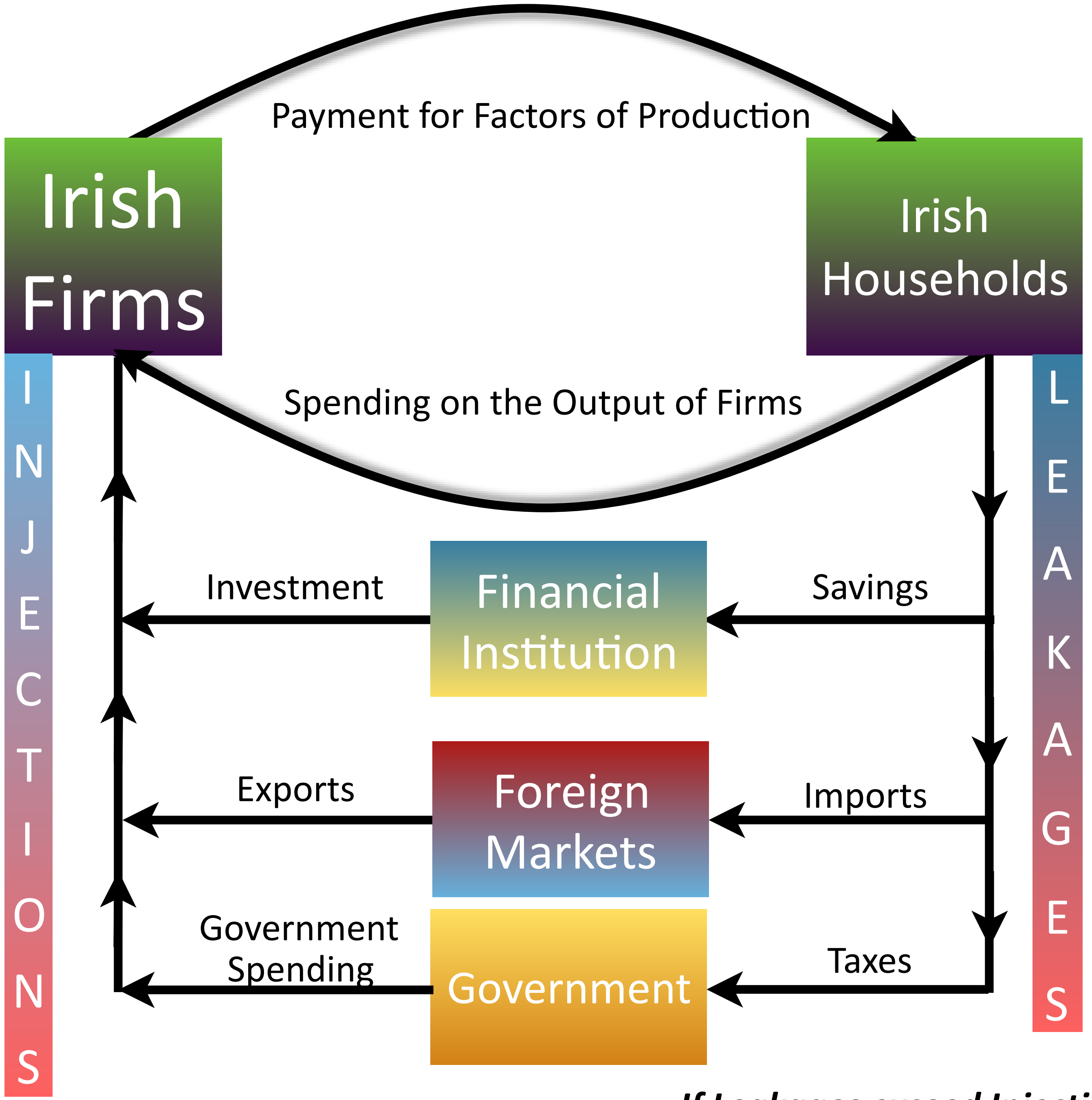
The Circular Flow of Income Diagram and the Aggregate Demand Curve

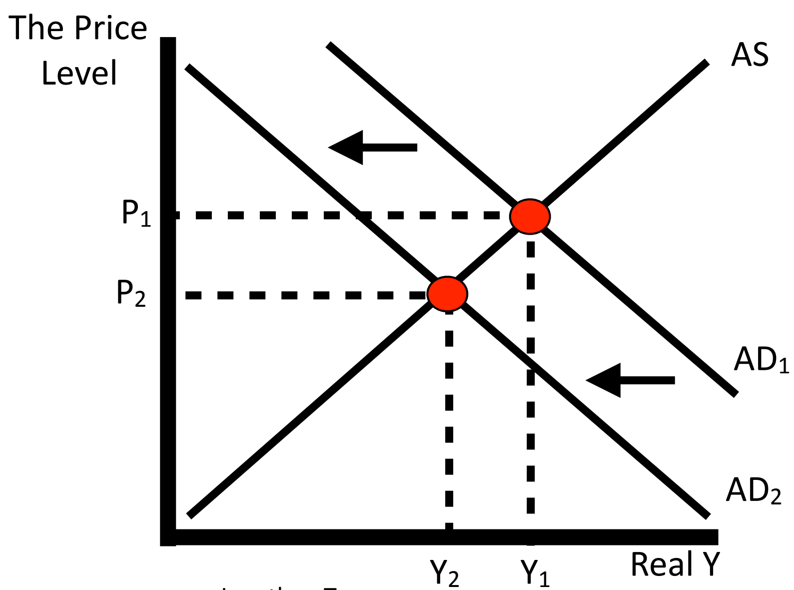




If Injections exceed Leakages

1) AD ↑
2) P ↑
3) Y ↑
4) Emp ↑
5) Sav ↑
6) Imp ↑





If Leakages exceed Injections

1) AD ↓
2) P ↓
3) Y ↓
4) Emp ↓
5) Sav ↓
6) Imp ↓