

OTHER MEASURES OF PRODUCTION, EXPENDITURE AND INCOME:

-**GDP per capita**= average GDP per family

There is some correlation between GDP and quality of life e.g. life expectancy etc...

-**NET DOMESTIC PRODUCT (NDP)**: Calculated by measuring GDP and subtracting the value of depreciation of capital equipment. GNP is similar to GDP, but GDP represents the goods produced in New Zealand REGARDLESS of ownership.

-**GNE**: measures the expenditure on output in NZ.

GNE=C+I+G

-**GROSS NATIONAL INCOME (GNI or NI)**: NZ's GDP + income generated overseas by NZ residents and firms, minus the income generated in NZ by non-residents and foreign firms.

-It accrues to NZers, regardless of where it was produced

GNI=GDP ± Net Int. Investment Income

=consumption/income/Government spending (G)

Components of GDP:

Expenditure method of calculating GDP divides into four major categories and expenditures.

-**Consumption (C)**: Spending by households on goods and services, not including spending on new houses

-**Investment (I)**: Spending by firms on new factories, office buildings, machinery and spending by households on new houses. (New housing does not go into GDP, so it goes under investment

→ everything done by firms+new housing)

For example: current income= commission

2nd dealers only contribution to the economy is the commission from the sale of the car, if they sell a NEW car, full contribution will go to GDP.

-**Government purchases (G)**: Spending by government on goods and services

-**Net exports (NX)**: The value of exports minus expenditure or imports (X-M) =NX

Y=C+I+G+NX

GOVERNMENT SPENDING: is split into two categories

-Capital expenditure

-Current expenditure

-**Transfer payments**: Payments by the government to individuals for which the government does not receive a g/s in return. e.g. pension, social welfare, unemployment benefits.

Transfer payments are included in GDP under (C) as it is paid to people; recipients decide how to spend it.

SHORTCOMINGS OF GDP: Some things are omitted by GDP: Transaction that do not increase GDP (transfers to another country, gifts, inheritances, shares etc.), illegal transactions (black money), contra or "cash" deals (informal economy), household production (DIY), unpaid household care/management.

-The distribution of GDP is not captured in GDP measures

-The value of leisure is not included in GDP

-The level quality of, and access to health care is not measured in GDP

-GDP is not adjusted for pollution or other negative effects of production

-GDP is not adjusted for changes in crime and other social problems.

REAL GDP v.s NOMINAL GDP:

Calculating GDP has two components: Price changes, output (quantity) changes.

It is important to separate a measured rise in GDP that may be due only to price changes from real quantity changes.

NOMINAL GDP: The market value of final goods and services evaluated at current year prices.

=PY (income/expenditure * quantity)

REAL GDP: The market value of final goods and services evaluated at base year prices. It is a measure of changes in output ONLY. It is measured by base year prices.

=Y

e.g. In 2009 country A and B produced 100 goods. Each good=\$10

-Country A produced 100 goods at \$12

-Country B produced 120 goods at \$10

Both countries appear to be better off on the surface.

Country A stagnated-inflation; country B is better off due to more production 20% inc. in production.

A drawback of using base year prices may change relative to each other. Prices in each year are "chained" to prices in the previous year to minimise the distortion from changes in relative prices.

-Importance of goods= weighted by relative importance (found by quantity sold). Bread > Ferrari therefore, chain weight will be greater.

$$\text{Economic Growth} = \frac{\text{Real GDP}_{\text{Current}} - \text{Real GDP}_{\text{Previous}}}{\text{Real GDP}_{\text{Previous}}} \times 100$$

-ECONOMIC GROWTH RATE:

The rate of change in real GDP from one year to the next. remember %change=change/orig

THE GDP DEFLATOR: GDP also allows us to calculate changes in the price level over time.

Price level: A measure of the average prices of g/s in an economy.

GDP DEFLATOR: A measure of the price level, calculated by dividing nominal GDP and x100

GDP deflator= (NominalGDP)/(RealGDP) x100

(if it is 118.17, it has risen by 18.17%)

The GDP deflator for the base year will always=100, as nominal and real GDP are the same; the price change between two years is calculated as follows.

Price change= ((118.17-100)/100) x100=18.17%

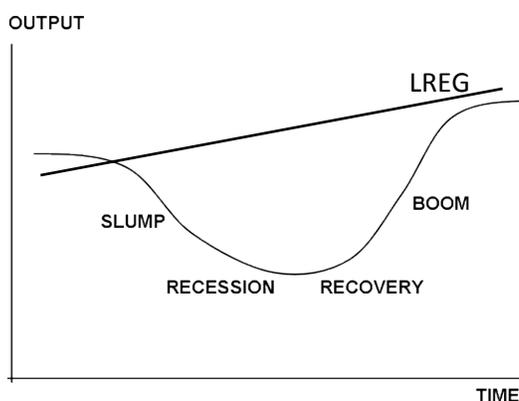
PRODUCTION, PRODUCTIVITY & ECONOMIC GROWTH

-Long-run economic growth: The process by which rising productivity increases the average standard of living.

-Real GDP per capita: is used to measure changing *living standards over time*.

Real GDP per capita= Real GDP/population

-The economy has fluctuations of (boom and bust)



PRODUCTIVITY:

- Productivity refers to the amount of g/s that a worker can produce from each hour of work.
- Productivity plays a key role in determining living standards for all nations in the world.
- To understand the large differences in living standards across countries, we must focus on the production of g/s.

IT IS DETERMINED by the inputs used to produce g/s which are called the factors of production. **(Land, labour, capital)**

e.g. Physical capital: is the stock of equipment and structures that are used to produce g/s (tangible items like tools used to repair)

Human capital: knowledge and skills that workers acquire through education, training and experience. (more you have=more output) Human capital, like physical capital, raises a nation's ability to produce g/s. (intangible)

Natural resources: Input used in production, which are provided by nature, e.g. land, renewable and non-renewable (petrol) sources. Can be important but are not necessary for an economy to be highly productive in producing g/s.

Technological knowledge: a society's understanding of the best ways to produce g/s. e.g. managerial skills

Economists often use a production function to describe the relationship between the quantity of inputs used in production and the quantity of outputs from production.

mixture of 4 inputs

$$Y = AF(L, K, H, N) \quad f = \text{function } \{F()\}$$

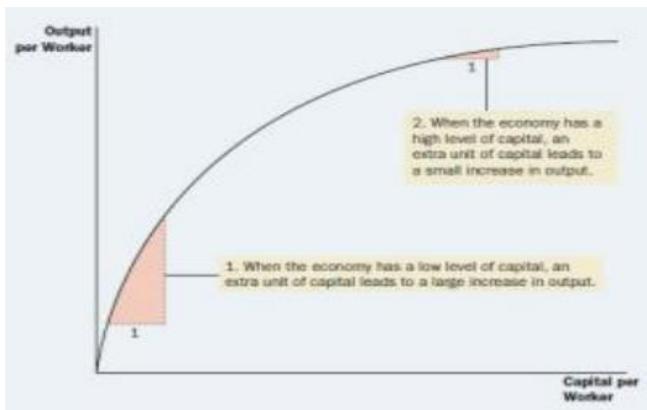
Y= quantity of output: input/output/production etc...

A=available production technology (it is implied "A" is constant {out of bracket}, it is a state of knowledge, available production quality, managerial knowledge etc...)

L= quantity of labour

K=quantity of human capital

N=quantity of natural resources



Curve slopes off: growth is slower
-Low levels of capital/productivity
-Any slight change leads to large growth
-Easy to double \$1 than \$1,000,000
Smaller/less capital intensive countries will have higher levels of growth.
-More capital per worker=More output
-Can produce more due to efficiency.

-Government policies that raise productivity and living standards:

-Consumers "save", firms "invest"

- encourage saving (buying shares) and investment (purchase of plant and machinery)
- encourage investment from abroad (build a coca cola plant in NZ)
- encourage education and training
- establish secure property rights and maintain political stability
- promote free trade and R&D

Raise productivity=more to gaining horizontal increase

One way to raise future productivity is to invest more current resources in the production of capital (plant and machinery)

-The catch-up effect refers to the property whereby countries that start off poor tend to grow more rapidly than countries that start off rich (easy to double small amounts of money.)

-**Governments** can increase capital accumulation and long-term economic growth by encouraging investment from foreign sources.

-**Investment** from abroad takes several forms:

-**Foreign direct investment: (hands on approach) Capital investment owned and operated by a foreign entity.**

-Foreign portfolio investment: Investment financed with foreign money but operated by domestic residents.(financed by overseas money)

EDUCATION: An educated person might generate new ideas about how to best produce g/s, which in turn, might enter society's pool of knowledge and provide an external benefit to others.

Entrepreneurship or management

-One problem facing poor countries is the brain drain: People from poor countries → study in 1st world countries and don't go back home to feed their knowledge back into their country.

HEALTH AND NUTRITION: Human capital usually refers to education. However, it may be used to describe investment leading to a healthier population. Technical class is extremely important to an economy.

Healthy workers tend to be more productive. Policies that attempt to improve the nutrition and health of its workers will lead to increasing economic growth.

-Property rights refer to the ability of people to exercise authority over the resource they own. It is important for investors to feel that their investments are secure.

RESEARCH AND DEVELOPMENT: The advance in technological knowledge has led to higher standards of living. Governments encourage the development of new technologies through research grants (could be a lemon/waste of money), tax breaks, and the patent system.

TAXATION: The effect of taxation on economic growth depends on the way taxes are levied and spent. Tax on incomes will have a negative effect on growth, whereas tax on consumption encourages saving and increased capital per worker. **The idea is money from net income can be consumed or saved, consumption tax make o.c (saving {plant+mach}) higher**

-encouraging people to save allows for more people to invest → more productivity but bias for saving.

PART 8: MONEY ,FINANCE AND INFLATION:

MONEY: Assets that people are generally willing to accept in exchange for g/s or for payment of debts.

ASSETS: Anything of value owned by a person/firm.

Without money we have to barter, thus the functions of money are: medium of exchange, unit of account, store of value, standard of deferred payment.

-Money must be acceptable by most traders, a standardised quantity, durable, valuable and divisible.

Fiat money: authorised by a central bank or govt. body and that does not have to be exchanged by the central bank. Cash is very liquid.

M1 Currency

M2 DEMAND DEPOSITS: deposits in financial institutions that is transferable by cheque, by debit cards at EFTPOS terminals and through electronic transfer between accounts. Available on demand.

M3 includes M1 and M2, plus all other deposits with domestic and foreign owned banks operating in NZ, Includes certificates of deposit, term deposits and deposits with banks from building societies, credit unions and other authorised deposit-taking institutions.

BROAD MONEY: deposits into non-bank deposit taking institutions less holdings of currency and deposits of non-bank depository corporations, such as finance companies, money market corporations and cash management ratios.

CREDIT: not a form of money, but is now used by the RBA as a main measure of monetary movements in NZ. Loans, advances and bills provided to the private non-financial sector (individuals and firms) by all financial intermediaries.

-Unexercised overdrafts are not part of money supply

-Debit cards and cheques are not themselves money. Credit cards accumulate debt paid off by M1.

Banks do not keep money on premises.

Reserves: deposits that a bank keeps as cash in its vault or on deposit with the Reserve Bank of New Zealand.

Reserve ratio: A bank's ratio of reserves to deposits

Excess reserves: Reserves above the normal ratio of reserves to deposits

A loan is an asset to a bank and a deposit is a liability to a bank.

Simple deposit multiplier= 1/RR:

The **credit multiplier** is the ratio of the amount of deposits created by banks to the amount of new reserves.

-If $RR=5\% = 1/0.05=20$

If deposit multiplier=10, initial lending=\$10million, bank will end up with \$10m

\$1 goes out, \$1.90 comes in, 0.9 goes out 90% of that goes out 10% is kept

The financial system channels funds from savers to borrowers and channels returns on borrowed funds back to savers. Financial markets include the share market and the bond market.

Financial intermediaries act as go-betweens for borrowers and lenders, and include bank and non-bank intermediaries (NBFIs) such as credit unions, building societies, managed funds, superannuation funds and insurance companies.

The financial system also provides 3 key services for saver and borrowers: risk sharing, liquidity, info.

The Reserve Bank of New Zealand has two major roles:

1. Maintain the financial integrity and stability of the NZ financial system.
2. To implement monetary policy.

MONETARY POLICY: The actions the RBNZ takes to maintain price stability as agreed to in the Policy targets Agreement. This is primarily managed through the OFFICIAL CASH RATE (OCR)

OFFICIAL CASH RATE: The basis of overnight money market interest rate. Sets bottom line for all interest rates; all other borrowing and lending rates will differ.

It is the most important monetary instrumental tool used to control inflation. Is the rate about which trading banks can borrow or lend to reserve banks. Interest rates effect consumption and investment. If interest rates go up, prices decrease to control inflation. If inflation rises too high, banks will raise OCR up all other interest rates fluctuate up or down.

If interest rates rise, this stops inflation and affects C and I. Opportunity cost element kicks in: if profitable to save than consume → firms decide it is less expensive to invest → **demand curve shifts left. → prices fall → inflation falls.**

Reserve bank prints money-sets interest rates (other rates rely on this), RR set by NZ govt. Reserve bank will lend any amount of money (0.25 above and below 2% cash rate) a trading bank at 2.25 and will borrow any amount at 1.75%

OPEN MARKET OPERATIONS (OMO's): (OMO called open market because govt competes with private individuals and firms for funds) The RBNZ purchasing or selling short dated financial instruments such as private bonds and securities. Are a means by which govt can borrow smooth out fluctuations from large government spending/sales. (Reserve bank is safest to lend to, avoids difficult spikes.)

Government issues debt to fund any revenue shortfall. RBNZ also smoothes daily government flows
-through daily and now intra-day settlement
-through open market operations.

Exchange rate management: The value of the NZ dollar is determined by the interaction of demand and supply of the NZD on international currency markets.

However, the RBNZ can intervene but it is rare and risky

The RBNZ also manages NZ's foreign currency and bonds, and gold reserves.

If interest rates are increased, exchange rate is also increased- loose exports.

If exchange rate is increased, it is made very difficult for a country to export because exports are lost (NZ in past) monetary policy only used to keep inflation steady (in control)

-Income=quantity=employment (synonymous)

Q=quantity, Monetary policy can be used to control employment. Laws of supply and demand determine NZD → clean float, any intervention=dirty float.

MONEY GROWTH & INFLATION:

Price level: A measure of the average prices of g/s in the economy (difficult: how do you average the price of a loaf of bread $200000+3=200003/2=150001.5$ not accurate at all) Thus price level is weighted.

Inflation: A sustained increase in the price level in the economy. Must be sustained, not one time only.

Inflation rate: The percentage increase in the price level from one year to the next.

MEASURING INFLATION: Consumer Price Index: An average of the prices of the g/s purchased by the typical family of four. Used to adjust inflation, but the problem lies in the fact that figures differ, not everyone has a 4 person family. Items get a **WEIGHTING** according to relative importance.

The g/s typically purchased by households is the **market basket**. The prices of g/s are given a weighting according to their fraction of a typical family budget.

The CPI measures the rate of change in the prices of the g/s in the market basket. This is the most common inflation measure, but there are others (PPI-Producer Price Index)

CPI is not always accurate even though it is the most widely used measure of inflation due to biases.

Substitution bias: basket does not change to reflect consumer reaction to changes in relative prices. If butter is more expensive consumers change towards goods that are relatively less expensive e.g. margarine. Basket can't react to a sudden substitution and thus overstated the cost of living.

Increase in quality bias: If the quality of a good rises from one year to the next, the value of a dollar rises, even if the price of goods stays the same. –Computing power

If the quality of a good falls from one year to the next, the value of the dollar falls, even if the price of the good stays the same.

Introduction of New goods: the basket does not reflect the change in purchasing power brought on by the introduction of new products. Took 5 years to put cell phones into CPI market basket, and it doesn't take into account changes in purchasing patterns, and changes in trends.

The purchasing power of the dollar falls over time as prices rise. Price indexes such as the CPI, enable the adjustment to be made for effects on inflation, so the dollar values can be compared over time.
Formula: value in 2010=value in 1980 \times (CPI in 2010/CPI in 1980)

Inflation imposes costs on the economy, but it does not affect everybody, wages sometimes lag inflation. People on fixed incomes are likely to experience reduced purchasing power due to inflation. If income does not rise with inflation, purchasing power erodes.

The extent of redistribution depends, in part on the degree to which inflation was anticipated or unanticipated. Otherwise arbitrary redistribution from one institution to another occurs.

Anticipates inflation is based on expectations (people do something about a situation before making financial decisions e.g. escalation clauses)

Problems associated with anticipated inflation include:

Menu costs: The costs to firms of changing prices (time taken/needed to change price)

Income redistribution, as some people's income will fall behind anticipated inflation.

Those holding wealth in paper money suffer. (e.g. income rises 1.2% and inflation rises by 1.5% because a rate of less than 3% must be maintained by RBNZ) Those holding debt at 0% interest rates (student loans) are gainers.

Unanticipated inflation: There may be winners and losers, depending on whether inflation is higher than of lower than anticipated. Those on fixed incomes, such as pensions, will lose if inflation is higher than anticipated. Borrowers may gain and lenders may lose when inflation is higher than anticipated. People on fixed payment contracts may gain or lose.

DEFLATION: A decline in the general price level in the economy (negative inflation rate). Items get cheaper and are a sign the economy is struggling to keep full employment. **It increases debt burdens,** thus people with debt are worse off: mortgage rates do NOT deflate. It reduces asset values and wealth. Knock on effect of intervening with people's wealth e.g. house prices. Problems with forcing asset prices down as wealth are a determinant of aggregate demand. **Gains to consumers from falling prices may be negated by falling wages,** as a result less people lend money because lend rate=2%, inflation=1.5%, net gain=0.5% after tax=-0.2%loss

Nominal int rate: Rate charged on mortgage

Real int rate: NIR – inflation rate e.g. 7%-2%=5% RIR

The real interest rate rises above the nominal interest rate, discouraging business borrowing and reducing the effectiveness of monetary policy, it muddles with the effect of monetary policy.

HYPERINFLATION: extremely rapid increases in the general price level. Money loses its value so quickly, people do not want it (households avoid holding it).

Hyperinflation is often associated with political instability and usually accompanied by a severe recession and economic and political turmoil.

CAUSES: too much money is printed.

If money is taken out of circulation- inflation will STOP. If money supply is withdrawn people starve to death.

DEMAND-PULL theory: more money=more spending → more pressure on supply → prices are bid (pulled) up in the market. (C) increases= AD shifts right, Price rises=Inflation

Money growth drives inflation, we demand more goods because we have more nominal money pulling AD right. **Rapid growth in supply+inflation**

COST-PUSH inflation: Inflation that arises as a result of a negative supply-shock-that is, anything that causes a decrease in the aggregate supply of g/s (disaster or input costs)

-Increases in input prices, wages due to stronger unions, indirect taxation, monopoly power in product markets, Or natural disasters.

(SRAS) shift upwards left, as a result price increases.

OPEN ECONOMY MACROECONOMICS: economy with a lot of interaction with others.

All economies buy and sell g/s in world product markets. They buy and sell capital assets in world financial markets.

EXPORTS: are g/s that are produced domestically and sold abroad.

IMPORTS: are g/s that are produced abroad and sold domestically.

NET EXPORTS: (NX)/TRADE BALANCE are the value of a nation's exports – value of imports

A trade deficit is a situation in which net exports (NX) are negative. imports>exports

A trade surplus is a situation in which net exports (NX) are positive. exports>imports

Balanced trade refers to when net exports are zero imports=exports

Trade deficit leads to a depreciation of the local \$ as supply of \$NZ to the foreign market will be greater than the demand for \$NZ. The price of the \$NZ must fall, to get the exchange market into balance (depreciation). → Demand will fall (NZ imports will fall). Foreign buyers will be paying less foreign currency for domestic goods. Demand will increase NZ exports. So trade deficit is reduced.

Factors that affect net exports:

-the tastes of consumers for domestic and foreign goods and the prices of goods home and abroad

-the exchange rates at which people can use domestic currency to buy foreign currencies

-the incomes of consumers at home and abroad (income=high → we will import more, how much we export depends on the incomes of overseas customers)

-the costs of transporting goods from country to country

-the policies of the government toward international trade (are they trying to defend their industries → tariffs, quotas)

NET CAPITAL OUTFLOW: refers to the purchase of foreign assets by domestic residents minus the purchase of domestic assets by foreigners. e.g. money is lent to person in Aus, money leaves NZ to go to AUS: **outflow=diff between money in and money out.**

THE PRICES FOR INTERNATIONAL TRANSACTIONS: REAL AND NOMINAL EXCHANGE RATES:

EXCHANGE RATES: The nominal exchange rate is the rate at which a person can trade the currency of a country for the currency of another. Domestically if something is expensive you will not buy it if it is cheap you will.

APPRECIATION: refers to an increase in the value of a currency as measured by the amount of foreign currency it can buy more foreign currency with \$1 domestic.

DEPRECIATION: refers to a decrease in the value of a currency as measured by the amount of foreign currency it can buy.

International transactions are influenced by international prices.

The two most important international prices are the nominal exchange rate and the real exchange rate. **REAL EXCHANGE RATE-** price ratio for 2 countries

$$R_{\text{real}} = e \times \frac{P_d}{P_f}$$

nom-exchange rate

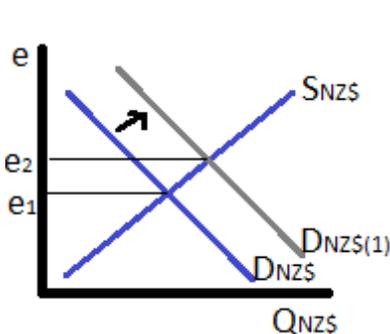
price level in NZ if $\frac{P_d}{P_f}$ = driven by inflation
price level foreign

R increases=less competitive in exports because it is harder to export(NZ depends a lot on exports for GDP reasons). Interest rates effect "e" which effects R (x-m). Net exports fall. (exports and interest rates work in opposite directions).

In theory, long run idea \bar{R} states that is constant and one action on the RHS should offset the other. If the exchange rate increases, nominal exchange rate should fall to balance the equation. (This is a very long run view, in the short-run real exchange rate does jump around due to the volatility of e, compared to prices.

-Nominal rates can change very easily due to interest rate changes, political stability, judicial system, confidence as well as the ease at which money can be sent immediately.

Monetary policy in NZ is designed to control inflation, by changing the OCR which



affects all other interest rates. Higher interest rates attract more foreign lenders. This has the effect of raising the value of the NZD.

So $e \uparrow$, $R \uparrow \rightarrow NX \downarrow$, so monetary policy may well hurt the export sector. So while, in the long run, there may be little change in R nominal exchange rates react much quicker to changes in "r" (interest rates), while monetary policy may not act on prices for up to a year. So immediate rise in

R=time inconsistency.

Monetary policy may have side effects and unintended consequences.

PURCHASING POWER PARITY (PPP): essentially states that R is constant.

Nominal rate “e” will adjust to ensure prices are the same everywhere. P_d/P_f ,
 $2/1=e=1/2$

-If the law of one price were not true, unexploited profit opportunities would exist.

-The process of taking advantage of differences in prices in different markets is called arbitrage.

-smart dealers would buy, say, NZ wine where it is cheapest, and re-export to more expensive markets, undercutting these. If arbitrage occurs, eventually prices that differed in two markets would necessarily converge. According to the theory of purchasing-power parity, a currency must have the same purchasing power in all countries and exchange rates move to ensure that. Many goods are not easily traded or shipped from one country to another.

STICKY WAGES: Wages usually rise annually (W), however if interest/inflation rates fluctuate throughout the year (P). Wages will not adjust → nominal value of wages will not match the real value.

NOM= W/P

Thus wages are sticky, the pay of employed workers tend to respond slowly to the changes in a company's or the broader economy's performance. When employment rises, the wages of those that remain employed tend to stay the same or grow at a slower rate than before rather than falling with the decrease in demand for labour. Specifically, wages are said to be “sticky-down” since they can move up easily but move down only with difficulty.