Business cycle

	Duration	Inflation	Economic policy	Confidence level	Market
1. Initial recovery	Few months	Initially falling	Stimulative by low interest rate + budget deficit	Increase	- Output gap : large - ST interest rate : low / falling - LT interest rate / Bond yields : lowest → bond price peaking - Stock price : increase
2. Early upswing	1 to several years	Low inflation + good economy growth	Less stimulative (rising interest rate)	Increase	- Output gap : narrowing - Inventory : increase - ST interest rate : increase - LT interest rate / Bond yield : flat / increase → bond price decrease - Stock price : increase
3. Late upswing	1 to several years	Increase	Become restrictive (Increase ST interest rate + limit growth of money supply by central banks	Highest High employment	- Output gap = 0 ; ecomomu at risk of overheating - ST interest rate : increase - LT interest rate / Bond yield : increase - Stock price : peak + increase risk and volatility
4. Slowdown	Few months to 1 year	Continue to increase	Less restrictive	Decline	- Inventory : decrease - ST interest rate : peak - LT interest rate / Bond yield : peak, may decrease → bond price start increase - Yield curve may invert - Stock price : decrease
5. Recession	6 months to 1 year	Peak inflation + Decline real economic activity	Easing	Decline; Increase unemployment and bankcruptcy	- Inventory : Decrease - ST interest rate : decrease - LT interest rate / Bond yield : decrease → bond price increase - Stock price : bottom, and start increasing at the end of recession

Inflation / Disinflation / Deflation

Inflation : price increase. Typically inflation accelerate near business peak
Disinflation : inflation rate slow down. Typically decelerates as economy approach and enter recession
Deflation : price decrease. Deflation is threat, due to :
- Encourage default on debt obligation (price decrease > equity → negative equity)
- Limits the ability to decrease interest rate at 0% to stimulate the economy

Inflation and Asset classes return

1. Inflation ≤ expectations
- Cash equivalent / Bonds : stable/declining yield → neutral return
- Equity : predictable economic growth → positive return
- Real estate : Neutral

2. Inflation > expectations
- Cash equivalent : increasing yield → Positive return
- Bonds : Increase rate → decrease price → negative return
- Equity : negative return (some companies might have return > inflation rate and do well)
- Real estate : RE value increase with inflation → positive return

3. Deflation
- Cash equivalent : interest rate near 0% → negative return
- Bonds : Fixed future CF have greater purchasing power → Positive return
- Equity : Economy and business activity decline → Negative return
- Real estates : property value decline → Negative return

Taylor rule in predicting central bank behaviour

Inflation too high → increase ST interest rate
Economic growth too low → decrease ST interest rate

$$r_{target} = r_{neutral} + 0.5 \times (GDP_{expected} - GDP_{trend}) + 0{,}5 \times (i_{expected} - i_{target})$$

r_{target}=target ST interest rate
$r_{neutral}$=neutral ST interest rate
$GDP_{expected}$=expected GDP growth rate
GDP_{trend}=LT trend in GDP growth rate
$i_{expected}$=expected inflation rate
i_{target}=target inflation rate

Negative interest rate

Definition : net fee to invest in ST instruments

Negative interest rate is sustainable for an extended periods, due to the ability to quickly transfer a large amount of money to settle a transaction

Issues with negative interest rate :
- When risk free rate < 0 → should use another sustainable expected risk-free rate (e.g.: Taylor rule), which is not fully risk-free
- Need to forecast when the negative rates will return to LT sustainable risk-free rate. Another approach is to interpret negative risk-free rates as being consistent with contraction / early recovery stages of business cycle
- Few comparable periods exist → hard to find historical data
- Negative risk free rate = significant changes in the economy → less reliable historical data, required more subjective assessments
- Hard to combine the effect of negative interest rate with less tested quantitative easing

Fiscal policy

Fiscal policy to stimulate the economy :
- Increase spending
- Increase budget deficit (only change in deficit made by the government will influence growth)