Economics
Understanding Business Cycles

Study Session 3

Reading No – 11
Version 2022

Learning Outcome Statements

The candidate Should be able to:

- a. describe the business cycle and its phases;
- b. describe credit cycles;
- c. describe how resource use, consumer and business activity, housing sector activity, and external trade sector activity vary as an economy moves through the business cycle;
- d. describe theories of the business cycle;
- e. interpret a set of economic indicators, and describe their uses and limitations;
- f. describe types of unemployment, and compare measures of unemployment;
- g. explain inflation, hyperinflation, disinflation, and deflation;
- h. explain the construction of indexes used to measure inflation;
- i. compare inflation measures, including their uses and limitations;
- j. contrast cost-push and demand-pull inflation.

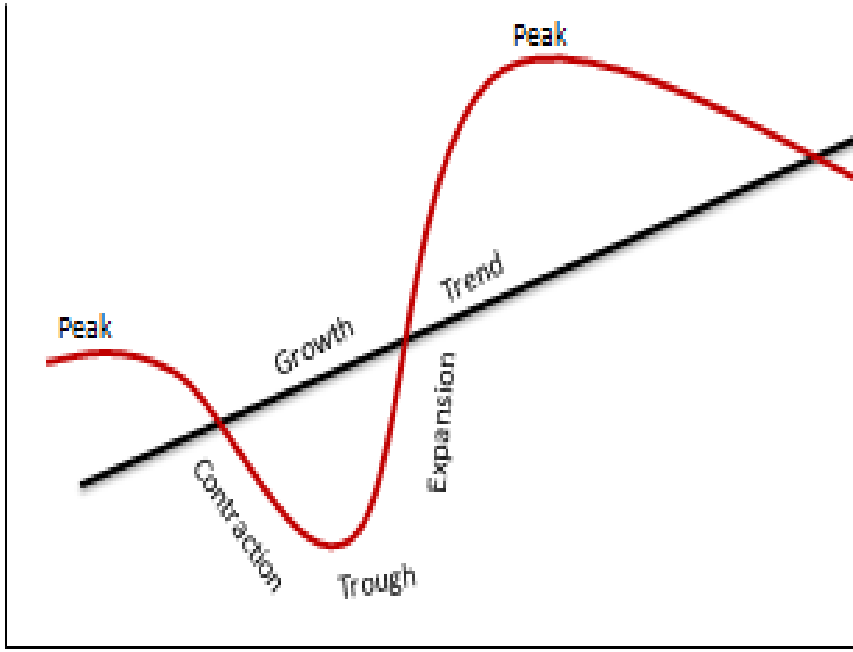
Los a:Business cycle: Characteristics

- Typically **prevalent in economies** that rely on business enterprises
- Has a expected sequence of phases alternating between a recession and an expansion
- Phases occur simultaneously across all sectors at the same time
- Are recurrent i.e. occur again and again
- Not periodic i.e. do not occur with the same duration or intensity
- Normally last between 1 to 12 years

Los a:Phases of the Business Cycle

Four phases namely:

- Expansion: economic activity is increasing
- Peak – Highest point
- Trough – Lowest point
- Contraction a.k.a. Recession or Depression (Extremely severe) – economic activity is declining



Los a:Phases of the Business Cycle

	Early Expansion (Recovery)	Late Expansion	Peak	Contraction (Recession)
Economic Activity	Start to expand	Accelerating pace of growth	Decelerating rate of growth	Outright declines
Employment	Unemployment rate remains high	Rates fall to low levels	Rate continues to fall	Unemployment rate rises
Consumer & Business Spending	Most visible in housing, durable consumer items	Becomes more broad based	Capital spending expands but rate of growth starts to decline	Cutbacks appear mostly in industrial production, housing, consumer durables
Inflation	Moderate and continues to fall	Picks up modestly	Further accelerates	Decelerates with a lag

Los a:Inventory, Labour and Physical Capital Utilization

	Early Expansion (Recovery)	Late Expansion	Peak	Contraction (Recession)
Inventory	Low, production begins to replenish inventory	Growing	Start to accumulate, rise in inventory-sales ratio	Liquidation of unsold inventory
Labor	No immediate hiring	Firms go all out hiring	Idling workers - no more overtime	Terminate all consultants, workers beyond the strict minimum
Physical capital utilization	Start investing in equipment, plants, etc.	Huge investment in physical capital	Equipment is used at less than full capacity	Low

Example

- https://www.youtube.com/watch?v=tZvjh1dxz08

Los d:Macroeconomic Schools of Thought - Neoclassical Macroeconomics

States that aggregate demand and supply are mainly affected by technological changes.

Business cycles (troughs and peaks) are a result of deviations from a long-term equilibrium. These deviations correct themselves, hence the economy does not need any intervention.

Policy prescription: Please do nothing!

Disadvantage: Could not explain the Great Depression (1929 to 1933)

Los d:Macroeconomic Schools of Thought - Keynesian Macroeconomics

States that the shifts in the aggregate demand and supply are mainly due to expectations.

Level of optimism among businesses will lead them to either over-invest or under-invest. This will cause the shift.

Highlights wages as the main problem. Wages are downward sticky, which means they are difficult to decrease. Hence it is difficult to bring the economy back from recession

Policy prescription: increase aggregate demand through monetary and fiscal policy.

New Keynesian School: It adds that besides wages, other input prices (like materials) are also downward sticky. Therefore, there will be additional barriers in restoring full employment levels in an economy.

Los d:Macroeconomic Schools of Thought

MONETARIST MACRO-ECONOMICS

- Main belief is that the variations in aggregate demand are due to variations in the monetary policy (most likely from wrong decisions from policymakers)
- Therefore recessions are probably a result of inappropriate decreases in the money supply or external shocks.
- Policy prescription: increase money supply in a predictable and gradual measure.

AUSTRIAN SCHOOL

- Business cycles are caused by government interventions.
- Government reduces the interest rates to low levels, which leads the corporations to over invest. When these investments turn bad, profits become losses and employees are fired. Unemployment levels jump, leading to recession.

Los d:New Classical School: Real Business Cycle Theory

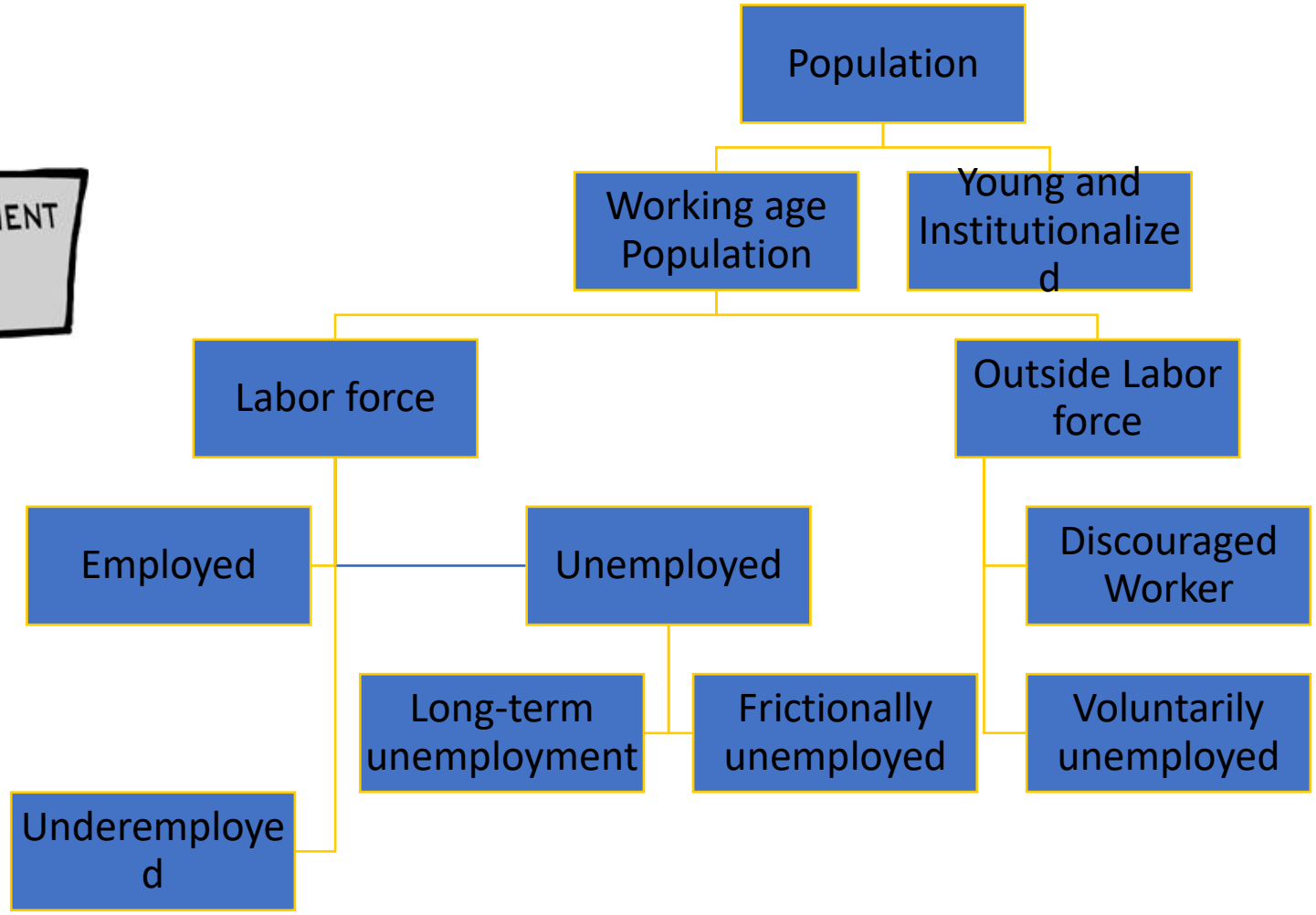
The main focus here is on technology and external shocks in an economy.

Main argument is that the policymakers should not try to counteract business cycles because expansions and contractions are efficient market responses.

Example

- https://www.youtube.com/watch?v=ZckAN1KYB5I

Los e:Unemployment



Los e:Unemployment: Labour Market Indicators

- **Unemployment Rate**
  - Measures the percentage of people within the labor force who are unemployed

Unemployment rate = Number of unemployed people/ Labor force x 100

- **Activity or Participation Rate**
  - Measures the percentage of the working age population who are members of the labor force

Labor force participation rate = Labor force/ Working age pop x100

Los f:Unemployment: Measures

Unemployment Rate

Lagging economic indicator of business cycles

Tends to point to a past economic condition – during a crisis, discouraged workers cease job hunting, reducing number counted as unemployed making market look stronger than it actually is

Businesses are reluctant to lay off people due to constraints written in labour contracts or out of a desire to keep good workers – during a crisis, unemployment rises more slowly than it actually would due to this reluctance

Los f:Unemployment: Measures

- Overall Payroll Employment and Productivity Indicators:
- Measuring size of payrolls helps to sidestep the issue of discouraged workers
- Another indicator used: managers cutting back on hours worked especially overtime is a clear sign of a recession brewing
- Increasing employment of temporary workers is a clear indication of economic recovery/growth
- Productivity measures also help in identifying the cyclical stage of the economy i.e. if output falls and workers are still on the payroll, measured productivity has fallen indicating rough times
- Productivity can also go up in response to technological breakthroughs or improved training techniques, both of which could affect potential GDP

Example

- https://www.youtube.com/watch?v=UMAELCrJxt0

Los g:Inflation

- Inflation: sustained rise in the overall level of prices in the economy
- Inflation rate: percentage change in a price index
- Higher the inflation, lesser the same amount of money can buy
- Deflation: sustained decrease in aggregate price level similar to a negative inflation rate i.e. a rate < 0%
- Value of money increase i.e. can buy more with same amount of money
- In a debt contract, liability of borrower will increase→ revenues fall and companies cut spending sharply to feed debt→ worsening economic condition

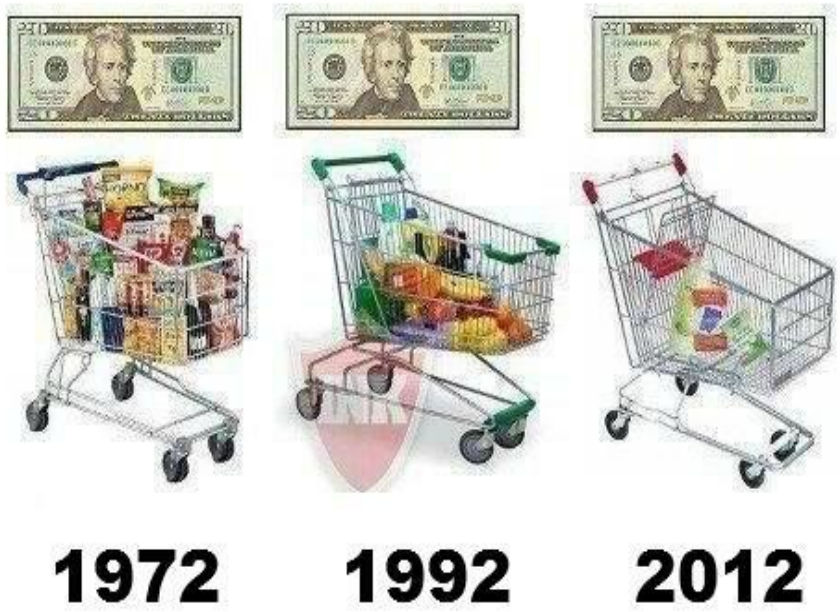
Los g:Inflation

Hyperinflation: extremely fast increase in aggregate price level similar to a very high inflation rate like 500% per year

Usually occurs when large-scale government spending is not backed by real tax revenue and central banks accommodate the government's spending with unlimited money supply

Triggered by supply shortage during a war, economic regime transition or prolonged economic distress due to political instability

Disinflation: decline in inflation rate e.g. from 15-20% to 4-5%. Different from deflation because positive inflation rate persists after initial decline



Los h:Construction of Price Indices

- **Example:** To simplify, assume a basket of two goods– wheat and rice. Reference base period is assumed to be 2xx3 and we have two periods 2xx3 and 2xx4.
- **Step 1:** Find value of basket in 2xx3
- **Step 2:** Find value of basket in 2xx4
- CPI= (Cost of CPI basket at current period prices/ Cost of CPI basket at base period prices) x100
- **Step 3:** Price index in base period is usually set to 100. So assume price index in 2xx3 is 100, calculate price index in 2xx4
- Price index in 2xx4 = 1155 x 100/1050 = 110
- **Step 4:** Calculate Inflation:
- Inflation rate = 110/100-1 = 10%

Good	Quantity	Price (Rz)	Value of Consumption Basket (Rs)
Wheat	15	30	450
Rice	10	60	600
Value of Consumption Basket (Rs)			1050

Good	Quantity	Price (Rz)	Value of Consumption Basket (Rs)
Wheat	15	35	525
Rice	10	63	630
Value of Consumption Basket (Rs)			1155

Los h:Measures of Inflation

Consumer Price Index (CPI)

- Different weights can be assigned to various categories of goods and services
- Scopes also vary i.e. in some countries **like Japan**, both urban and rural areas are surveyed to collect data while in **USA**, only urban areas are surveyed

Producer Price Index (PPI)a.k.a. Wholesale Price Index (WPI)

- Reflects changes in prices experienced by domestic producers in the country

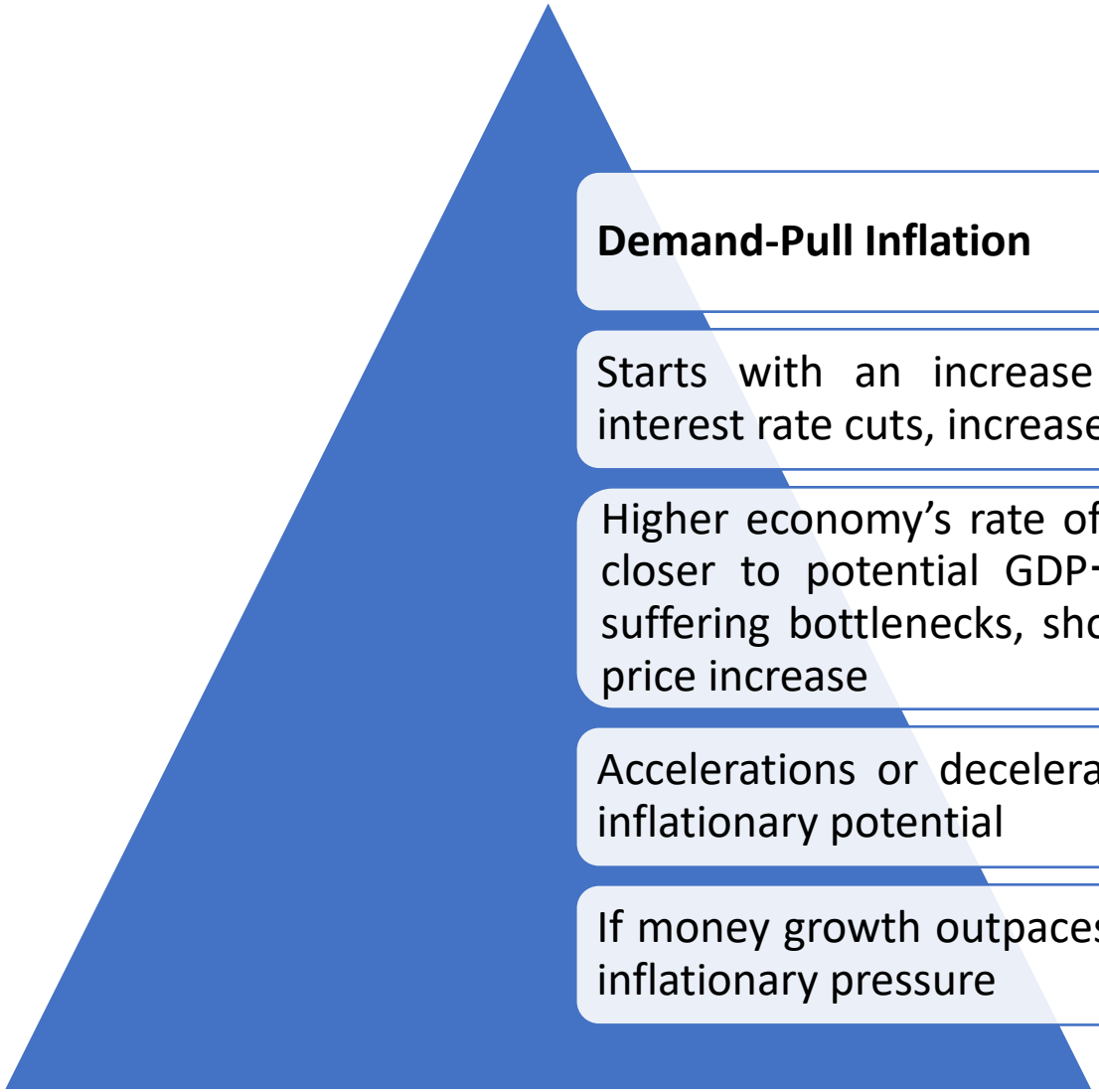
PPI can influence CPI

- Items included are fuels, farm products, metals, paper and pulp, machinery and equipment, chemical products, etc.
- Differences in weights can be more dramatic as different sectors/industries are dominant in different countries

Los i:Factors affecting Inflation

- **Cost-Push Inflation**
- Starts with an increase in costs typically wages or prices of inputs
- Unemployment rate is key – lower the unemployment rate, greater possibility that shortages will drive up wages
- However economy will continue facing labour shortages long before unemployment reaches low figures
- Non- accelerating inflation rate of Unemployment (NAIRU) is the effective unemployment rate beyond which markets gets pressured
- Productivity or output/hour is essential: greater each worker's output/hour, lower prices businesses need to charge to cover hourly labour costs

Los i:Factors affecting Inflation



Demand-Pull Inflation

Starts with an increase in Aggregate demand caused by interest rate cuts, increase in money supply, etc

Higher economy's rate of capacity utilization→ actual GDP is closer to potential GDP→ greater likely hood of economy suffering bottlenecks, shortages, inability to meet demand→ price increase

Accelerations or decelerations in money growth help detect inflationary potential

If money growth outpaces growth of the nominal economy → inflationary pressure

Los i:Factors affecting Inflation

Inflationary Expectations

Inflation becomes embedded, making consumer and businesses to expect it and build their actions around these expectations→ inflationary momentum

Such expectations have a self-sustaining character and may persist for decades

To gauge expectations practitioners rely on:

past inflation trends

surveys of inflation expectations

governments issuing bonds that adjust for inflation such as TIPS

Los e:Economic Indicators

Leading

- Have turning points that usually precede those of the overall economy
- Useful to predict economy's future state, usually near-term

Coincident

- Have turning points that are usually closer to those of the overall economy
- Useful in identifying present state of economy

Lagging

- Have turning points that take place later than those of the overall economy
- Useful in identifying economy's past state

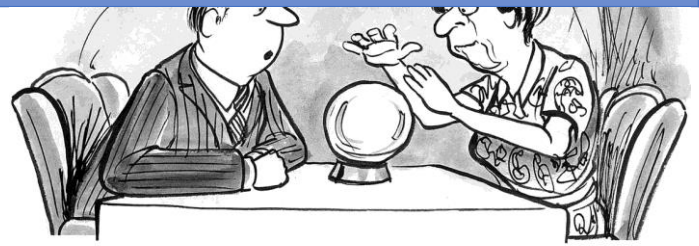
"I'll tell you another economic indicator dad, my weekly allowance has gone and it's only Tuesday."

Los e:Identifying Business Cycle Phase based on Economic Indicator

Type	Description of Indicators	Reason
Leading	Average weekly hours, manufacturing	Businesses cut overtime before laying off workers in a downturn
	Average weekly initial claims for unemployment insurance	Test of initial layoffs and rehiring
	New orders for consumer goods and materials	Tend to lead at upturns and downturns
	Vendor performance, slower deliveries diffusion index	Offers a clear signal of unfolding demands on business
	New orders for non-defense capital goods	Helps capture business expectation
	Building permits for new private housing units	Helps to predict new construction activity

Los e:Identifying Business Cycle Phase based on Economic Indicator

Type	Description of Indicators	Reason
Leading	S&P 500 Stock Index	Provide early signal on economic cycles
	Money supply, real M2	Increase/decrease in money indicate easy/tight monetary conditions
	Interest rate spread between 10yr treasury yields and federal funds rate	Wider/ narrower spreads indicate economic upswing/ downturn
	Index of Consumer Expectations, University of Michigan	Provides insight into future consumer spending
Coincident	Employees on non-agricultural payrolls	Are adjusted once recession or recovery is clear



"What do you see in emerging markets?"

Los e:Identifying Business Cycle Phase based on Economic Indicator

Type	Description of Indicators	Reason
Coincident	Aggregate real personal income	Captures current economy state
	Industrial Production Index	Measures industrial output (most volatile)
	Manufacturing and trade sales	Measure of current business activity
Lagging	Average duration of unemployment	Lags the cycle during up and down turns
	Inventory-sales ratio	Inventories increase/decrease as sales decline/pick up
	Average bank prime lending rate	Tends to lag other rates that move either before cyclical turns or with them

Los e:Identifying Business Cycle Phase based on Economic Indicator

Type	Description of Indicators	Reason
Lagging	Change in unit labor costs	Tend to rise into the early stages of a recession and late in recovery
	Commercial and industrial loans outstanding	Support inventory building
	Ratio of consumer installment debt to income	Consumers borrow only when they are confident indicating an upturn
	Change in consumer price index for services	Inflation usually adjusts to the cycle late especially stable service sector

Practice Problem

1.The characteristic business cycle patterns of trough, expansion, peak, and contraction are:

A. periodic.

B. recurrent.

C. of similar duration.

2.During the contraction phase of a business cycle, it is most likely that:

A. inflation indicators are stable.

B. aggregate economic activity is decreasing.

C. investor preference for government securities declines.

Practice Problem

3.An economic peak is most closely associated with: .

A. accelerating inflation.

B. stable unemployment.

C. declining capital spending.

4.Based on typical labor utilization patterns across the business cycle, productivity (output per hours worked) is most likely to be highest:

A. at the peak of a boom.

B. into a maturing expansion

C. at the bottom of a recession

Practice Problem

5.As the expansion phase of the business cycle advances from early stage to late stage, businesses most likely experience a decrease in:

A. labor costs.

B. capital investment.

C. availability of qualified workers.

6. An analyst writes in an economic report that the current phase of the business cycle is characterized by accelerating inflationary pressures and borrowing by companies. The analyst is most likely referring to the:

A. peak of the business cycle.

B. contraction phase of the business cycle.

C. early expansion phase of the business cycle.

Solution

1. B is correct. The stages of the business cycle occur repeatedly over time.
2. B is correct. The net trend during contraction is negative.
3. A is correct. Inflation is rising at peaks.
4. C is correct. At the end of a recession, firms will run “lean production” to generate maximum output with the fewest number of workers.
5. C is correct. When an economy’s expansion is well established, businesses often have difficulty finding qualified workers.
6. A is correct. Accelerating inflation and rapidly expanding capital expenditures typically characterize the peak of the business cycle. During such times, many businesses finance their capital expenditures with debt to expand their production capacity.