**Macroeconomics ECO202 Dr. Mary Habib**

**Notes on Chapter 22**

**Major Macroeconomic Problems: Unemployment & Inflation**

**Chapter Overview:**

1. Introduction

2. Economic Fluctuations--the Business Cycle

3. Economic Fluctuations and the Labor Market

4. Inflation

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**Introduction**

Output (GDP), inflation, and unemployment are the three main economic variables watched by the media, investors, businesses and politicians to assess the health of the economy.

Some goals of the economy are:

1) economic stability, which mainly means a low and stable inflation rate,

2) real growth in output/income, and

3) low unemployment.

We want to try to understand how economic indicators fluctuate and change over time, as the economy contracts and expands (i.e. as it goes through the business cycle).

**Fluctuations in the Economy – The Business Cycle**

The short-run fluctuations in real GDP growth constitute what we call the **business cycle.**  Here are some terms related to that.

*Expansion/boom* - Low unemployment, strong retail sales, rising stock market, strong and positive growth in real output, strong housing and construction market, etc.

*Contraction/recession* - High unemployment, weak retail sales, declining stock market, low or negative growth in real output, etc.

*Recession -* Usually defined as two or more consecutive quarters of negative real GDP growth.

*Depression -* Prolonged and severe recession. (Note that, unlike recession, the term “depression” has no well-defined timeframe. Many economists would probably refer to a severe recession that lasts over a couple of years a depression.)

Another very important note: The term business **cycle** does NOT mean that there is anything regular about the business cycle. Fluctuations are random and unpredictable. Periods of expansion and contraction vary quite a bit. Both could last anywhere from several months to several years.

**Economic Fluctuations and the Labor Market**

Here are some relevant definitions and concepts. Governments in modern economies around the world use the following terms as defined by convention.

**Employed:** Any person over 16 working for pay for at least one hour per week.

**Unemployed:** Any person over 16 who is available for work *and* actively seeking a job but not working. This also includes those waiting to start a new job, or return (due to temporary layoff) to an old job.

**Labor Force** = Those over 16 who are either employed or unemployed (as defined above).

**Labor Force Participation Rate** = Labor Force / Total population (over 16). The labor force participation for women has been increasing in advanced countries.

**Not in the Labor Force** = Full time housewives, full time students, retirees, disabled people, prison inmates, and anybody else who is not working and not looking for a job.

**Unemployment Rate** = (Number of persons unemployed / Labor force) x 100. In other words, it is the percentage of persons in the labor force who are not employed. In the past few years, the unemployment rate in the United States has usually been between 5% and 6% (but increased to 10% during the 2008-2009 financial crisis, and is now around 8%). In Lebanon, it has been around 8-9% (but several organizations claim that it is closer to 15%).

**Reasons for Unemployment-**

In a dynamic economy, there will be periods of *normal* labor mobility as workers move:
1) from shrinking industries into expanding industries, and
2) in and out of the labor force during a lifetime (for education, child raising, etc.).

Firms and entire industries are constantly changing.  Some are expanding and hiring people and others are contracting and laying people off.

There are new industries that did not exist 20 years ago - computer technology, VCRs, CDs, cellular phones, cable TV, fiber optics, web page design, etc. that have provided millions of new jobs.

Other industries have contracted or gone out of business.

Hundreds of new products are introduced every year; some sell well and others fail. Hundreds of new companies start every year; some succeed and others fail. Modern economies are dynamic systems characterized by constant change.  As the economy changes, new opportunities are constantly emerging and others are disappearing.

Point**:** in a dynamic economy, some unemployment is natural and in some ways even healthy.

Based on the above, we can list several causes for unemployment:

*1. New entry.*Graduates from high school or college and people looking for a job for the first time.

*2. Re-entry.*  People coming back to the labor market after taking some time off to go to school, raise a family, etc.

*3. Voluntary quitting.* This is where people leave jobs to find something better (more interesting, better pay, better hours) or to move to a new city.

*4. Mismatch between workers and needed skills.* With modernization and technological advancement, it is often the case that a segment of the unemployed cannot find jobs due to the lack of appropriate skills. For example, the labor market may be requiring a level of computer competence that many people do not have.

*5. Dismissal or lay-off.*Where people lose their jobsbecause company goes bankrupt, or due to downsizing, work slowdown, budget cuts, outsourcing, or factory moving to another state or country, etc. This cause of unemployment is associated with cyclical unemployment (defined below) and is usually indicative of economic downturns (recessions, etc.).

**Four types of Unemployment** –

Economists classify unemployment in four categories according to its nature, duration, and economic implication:

*1) Seasonal Unemployment –* During major holiday seasons, there is usually a huge demand for retail salespeople at shopping malls. Tourism often increases in the summer, construction often slows down in winter, and agricultural work varies according to crop and season. People who are unemployed due to these fluctuations in the demand for labor are seasonally unemployed.

*2) Frictional Unemployment*- A result of the "frictions" in the economy created by imperfect information. Workers may not be aware of all of the jobs available and employers may not be aware of all of the qualified employees.  Information is costly and imperfect.  Because workers and employers don't have access to perfect information, there is some unemployment due to the lack of complete information.

Examples of frictional unemployment include recent university graduates looking for formal jobs for the first time; people re-entering the labor market after some interruption; and people who work on contracts (freelancers).

Generally, frictional unemployment is considered to be due to the normal working of the labor market, mostly signifying short-run delays in matching workers and jobs.

*3) Structural Unemployment* **–** This is another type of unemployment that may be present in an otherwise healthy economy. It tends to be of longer term than all other types of unemployment. Unlike frictional unemployment, where the workers may be fully qualified but there is a time-consuming search process, in structural unemployment**,** workers are NOT qualified. Here, the unemployment is a result of the dynamic changes in the economy (due to technological change or urbanization, for example) that make someone's skills obsolete. They are faced with possible retraining and a career change if their skills have become obsolete.  Workers are structurally unemployed when they are no longer fully qualified in the new economy.  The "structure" of the economy has changed, leading to temporary unemployment for workers who are now unqualified.

[Examples: Clerical jobs that now require computer skills; manufacturing jobs that now require sophisticated training; people moving from rural into urban areas with only agricultural work experience; etc.]

Note that with technological advances, structural unemployment has been increasing, especially in advanced countries such as the U.S.

What would the appropriate public policy be for structural unemployment? (Think about training programs.)  What about for frictional unemployment? (Think about information provision, such as with job fairs, job placement agencies, etc.)

*4) Cyclical Unemployment* **–** This is temporary unemployment due to recession from reduced demand for labor during an economic downturn. Expansionary fiscal policies could help minimize cyclical unemployment. This unemployment (and the unemployment rate in general) is linked to the business cycle and the real growth rate of the economy. During an expansion, output growth is high and unemployment is low. During a recession, output growth is low or negative, mass dismissals and layoffs are frequent, and therefore unemployment is high.

**Full Employment**-

Full employment does NOT mean zero unemployment. Some unemployment is natural, expected and healthy, especially when it involves people trying to improve their lives by seeking better jobs.

Rather, we define full employment as an efficient use of labor and resources in the economy, allowing only for seasonal, frictional and structural unemployment. In the U.S., for example, full employment is considered to be 94-95%, meaning that 5-6% unemployment rate is natural.

**Natural Rate of Unemployment** *–*

This is essentially the normal unemployment that would exist in an otherwise healthy economy NOT experiencing recessions.

Many economists simplify this concept to think of it as the sum of

Seasonal + Frictional + Structural Unemployment.

On the other hand, cyclical unemployment is not natural.

Natural rate is NOT a fixed number that is calculated like the unemployment rate. It is an estimate that can be influenced by demographics and public policy, and that fluctuates over time.

*Examples:* Unemployment is higher for young people, so in countries where a higher percentage of the labor force is young, a greater deal of unemployment might be expected.

Public policy also affects the natural rate.  When public policy makes it more expensive to employ workers or fire workers the natural rate increases.  When public policy makes it more attractive to remain unemployed, the natural rate also tends to increase.  The more static/less dynamic the labor market due to policy, the higher the natural rate.

*Examples:* Before the recent financial crisis in the U.S., most European countries had a higher unemployment rates (8%-13%) than that of the U.S. (around 4-5%) One reason may be that public policy in Europe made it relatively more difficult to fire workers, so firms thought twice before hiring in the first place. Also, it is relatively more attractive to remain unemployed in Europe. Compared to the U.S., most European countries provide more generous unemployment benefits for longer periods of time for their unemployed workers. For many people, this decreases the incentive to look for work.

**Measurement Problems--**

There are measurement problems involved in quantifying unemployment due to some people not being counted as unemployed when they *are* in fact unemployed, or some people being counted as employed when they are in fact practically unemployed.

We can think of three categories of such measurement challenges.

Factors that *Underestimate* True Unemployment:

*Discouraged workers,* who have given up looking for a job, are NOT counted in the labor force, so they are NOT counted in the unemployment rate. ONLY those people who are actively searching for jobs are counted in the unemployment rate (particularly in the U.S. and other advanced nations). Discouraged workers are considered to be out of the labor force (not working and not looking for work). They are not registered for unemployment compensation because they have been unemployed too long to be eligible (under American law, for example). The unemployment rate in the U.S. prior to the recent financial crisis was 4-5 %. This did not account for discouraged workers.

Keynesians would argue that most discouraged workers should be placed in the “unemployed” category. If this is done, then the rate of unemployment would be higher that the *official* rate quoted by the government.

Side Note: In the real world, governments and international organizations quote the official rate, which does not take into consideration the existence of discouraged workers. This is due to two reasons: a) a political reason: most governments prefer to quote a low unemployment rate (otherwise, they might appear to be doing a poor job on the economic front), and b) it is actually very difficult to measure the numbers of people who should be categorized as “discouraged workers”. This type of information is not easy to obtain from direct surveys. So, instead, governments simply exclude all those who are not working *and* not looking for work from the labor force statistics.

2. *Part-time workers and underemployed workers* are NOT classified as unemployed, even though they may desire full-time employment. Someone working only one hour a week is still considered to be employed, even though they may be looking for a full time job. There could be significant marginal employment of this type that is not calculated in the official rate of unemployment. Economists call this “disguised unemployment”.  Another sort of disguised unemployment is when people are working in jobs beneath their skills or education. An example would be someone with a BA degree who is working in a pizza restaurant due to lack of a better job. Ministries of labor do not usually distinguish between those and other workers. Anybody working *in any form* is counted as employed.

Many economists would argue that part-time and underemployed workers would rather work full-time (but cannot find full-time jobs) or would rather work in their fields (but cannot find jobs). Accordingly, it is often argued that these should not really be considered employed (in the true sense of the word).

A Factor that *Overestimates* True Unemployment:

*Underground economy* - some people who are counted as unemployed may actually be working in the underground economy, or off the books. If those working “off the books” are known and accounted for by the government, they might no longer be classified as unemployed, and the unemployment rate would decrease.

Note that these three biases work in opposite directions:

* Discouraged workers *underestimate* the true unemployment rate; that is, they lead to an official estimate of the unemployment rate that is *lower* than what it truly is. (In other words, if we were to count those discouraged workers as unemployed, the unemployment rate would be higher than the official figure.)
* Likewise, part-time workers *underestimate* the true unemployment rate in the sense that they lead to an official estimate of unemployment that is lower than what it truly is.
* By contrast, those engaged in the underground economy (or any “under-the-table” transactions where paid work is not reported to the government) *overestimate* the true unemployment rate. This means that they lead to official estimates of unemployment that are higher than reality. (In other words, if we were to count those working under the table as employed, the unemployment rate would come out lower than the official figure.)

In advanced countries where under-the-table work is not very common (due to tighter government controls), overestimation is not a very big issue. Rather, in these economies, many people are discouraged (think about the homeless in the U.S. and Europe), so the unemployment rate may be underestimated.

In less developed countries, the situation is usually reversed. In a country like Lebanon, for example, few people are really not working at all. In fact, many people who report to be unemployed may actually be doing *unreported* work. This may lead to an overestimated unemployment rate. At the same time, we cannot forget the possibly large number of people who have simply given up looking for jobs and are seeking to immigrate instead. This is a factor that may underestimate the unemployment rate.

Despite these measurement problems, the unemployment rate (along with GDP) is one of the most closely watched economic indicators, reported monthly for most countries.

**Inflation**

**Inflation Defined**–

This is defined as a sustained increase in the general price level, calculated as the percentage change in a price index (PI). [Make sure you note that a one-time increase in prices would not count as inflation. Rather it must be a continuous, period-after-period increase in the general price level.]

Inflation erodes the purchasing power of the national currency, since a positive rate of inflation indicates that prices are increasing on average.

**Anticipated vs. Unanticipated Inflation (or Expected vs. Surprise Inflation)-**

Unanticipated, or surprise inflation is inflation that was not expected by most people. People are caught off guard. When inflation is high and volatile, people never know what to expect, and this makes business planning difficult. By contrast, anticipated inflation is a change in the price level that is expected by most decision makers.

Anticipated inflation is less of a problem than unanticipated inflation.

*For example*, we could expect inflation next year to be 3%. If it turns out to be 3%, it was expected. If it turns out to be 12%, there would be 9% additional inflation that was NOT expected.

One major reason why anticipated inflation is less of a problem than unanticipated inflation has to do with wage adjustments. In countries with active labor unions, the expected annual inflation rate is usually built into labor contracts from the start. If inflation turns out to be as expected, then no problem. If inflation exceeds expectations (unanticipated), then workers would get a lower real wage than they bargained for.

**Welfare Costs of Inflation-**

In general, high or unpredictable inflation rates are regarded as bad due to the following reasons:

*1) Uncertainty* about future inflation may discourage investment and saving. For instance, how would a bank in a high-inflation country know what nominal interest rate to charge on a 10-year loan/mortgage, given the uncertainty about future inflation?  It would also be very risky to invest in a high-inflation country.  If inflation becomes high in a certain country (like the US), investment would flow to more stable economies which have low inflation like Europe or Japan.

*2) Redistribution Effects:*

Inflation redistributes income from those on fixed incomes, such as employees and retired individuals, and shifts it to those who draw a variable income (for example, from profits which may keep pace with inflation).

In general, if income rises faster than the prices of the things one buys, then no problem. Alternatively, if income rises at a slower rate than prices, then a person is worse off. The poor are usually fixed-income earners (salaried workers), and so those tend to be the most vulnerable group during an inflation.

Additionally, inflation redistributes wealth from those who lend a fixed amount of money to those who borrow. Debtors (borrowers) are helped by inflation due to reduction of the real value of debt burden. For example, where the government is a net debtor, as is usually the case, inflation will reduce the real value of this [debt](http://en.wikipedia.org/wiki/Debt) in favor of the government. On the other hand, creditors (lenders), such as banks who lend to firms or individuals who lend to the government, are usually hurt by inflation as their returns would have lost some of their purchasing power by the time they receive them.

*3) International trade*: Where fixed [exchange rates](http://en.wikipedia.org/wiki/Exchange_rate) are imposed, a domestic inflation that is higher than the other economies with which a country trades will make the country’s exports more expensive and will tend to worsen the [trade](http://en.wikipedia.org/wiki/Balance_of_trade) deficit. [Note, however, that this will not be the case if exchange rates are flexible as they will then adjust in accordance with inflation. We will examine this more closely at the end of the semester when we look at the international economy.]

*4) Menu costs*: Firms must change their prices more frequently, which involves administrative costs, and so may lead to economic inefficiency. (Think, for example, about restaurants having to reprint menus all the time.)

*5) Relative Price Distortions*: Firms do not generally synchronize adjustment in prices (i.e. implement price changes at the same time). If there is higher inflation, firms that do not adjust their prices will have much lower prices relative to firms that do adjust them. This will [distort](http://en.wikipedia.org/wiki/Distortions_%28economics%29) economic decisions, since relative prices will not be reflecting relative scarcity of different goods.

**Creating a Price Index**

In general, prices do not all rise at the same rate -- some rise rapidly, some rise slowly, and some prices even drop. Thus, we express the overall price level by a price index, which is an average of these different prices.

The best known price index is the Consumer Price Index (CPI), which measures the (weighted) average price of goods and services consumed by the typical urban family. That is, the consumer price index is a *weighted* average in which the weights reflect the spending behavior of urban wage-earners. It is the most important price index calculated by national statistical agencies. The [inflation](http://en.wikipedia.org/wiki/Inflation) rate is then defined as the percent change of the CPI from one period to the other.

How do statistical agencies around the world go about calculating their nations’ CPI?

Since the CPI is based on a “basket” of goods and services consumed every month by the typical urban household, we should first get an indication of what this basket costs each month.

First of all, we must define the “typical” basket of goods and services. For countries with decent statistical capabilities, this is done through a survey on household expenditure patterns. Such a survey is done every couple of years in the US and every few years in Lebanon. Just to give you an idea, the last survey performed in the US, for example, involved more the 30,000 households and collected information on more than 2000 different expenditure categories. The list of 2000 items was then narrowed down into a shorter list of major consumption categories (up to 12).

Such surveys tell us what people consume and in which proportions.

From that information, the statisticians can go about computing CPI and inflation rates in the following manner.

Step One: Calculate Basket Price for Current Month

Consumption data is collected (when the survey is performed), and weights are assigned to each category of expenditure based on its relative importance in the average family spending behavior. These weights are then used to compute the weighted average price of the basket.

For example: Suppose families spend their monthly budgets on three items only: rent, transportation, and food. If ¼ of their budget goes to rent, ¼ to transportation, and ½ to food, then the weighted average price of the bundle during the month is ¼ Prent + ¼ Ptransp + ½ Pfood. The weights in this example are: ¼, ¼, and ½ respectively. The weights are then used to compute the weighted average price as in the example above. The same weights remain in effect until a new survey is done.

Now we have a basket (or bundle) price for the current month, where prices of goods are as they happen to be *currently* in the market.

Step Two: Calculate Basket Price for Base (Reference) Month

To calculate the bundle price for “base” month, we use the same weights but multiply by the prices of the goods/services *as they were during base month.* Base month, remember, is designated by the government, and changes every few years or so. The government normally picks a stable month (with no inflation) as a base month.

Step Three: Calculate CPI for *Current* Month

The CPI for the *current* month is then defined as the Current Bundle Price divided by the Base Bundle Price and multiplied by 100. So suppose the current month is May 2010 and the base month is December 2007, the CPI for May 2010 is defined as

(WAP of Bundle May 2010/WAP of Bundle December 2007) x 100

where WAP stands for weighted average price.

Step Four: Calculate CPI for *Base* Month.

This is straightforward. It is simply

(WAP of Bundle December 2007/WAP of Bundle December 2007) x 100

The answer is 100, of course.

Step Five: Calculate Inflation Rate for Current Month

The inflation rate is then defined as the percent change in the CPIs of “base” and “current”: (Current CPI – Base CPI) / Base CPI.

More generally, an inflation rate between the current month and any other month may be calculated in similar fashion. So for example, the inflation rate between month 2 and month 1 (any two months) is simply (CPIm2-CPIm1)/CPIm1

Side Note FYI: Governments could theoretically calculate the “actual” cost of the typical basket consumed by the average urban household, but this would be a much more laborious activity than the weighted average price method described above. How could the “actual” cost be calculated? The statisticians must collect data on prices for each of the goods consumed AND data on consumption on each of these goods. The cost of the basket would then be *Σ qipi*, where *qi*is the quantity consumed of each good and *pi* is the unit price for the good. This will probably turn out to be a large number, which may complicate calculations. Furthermore, the task of collecting data on consumption *each month* is also labor-intensive. The weighted price method described above is easier and more practical.