

**MACROECONOMICS**

**GDP /BUSINESS CYCLE**

**UNEMPLOYMENT**

**Zharova Liubov**

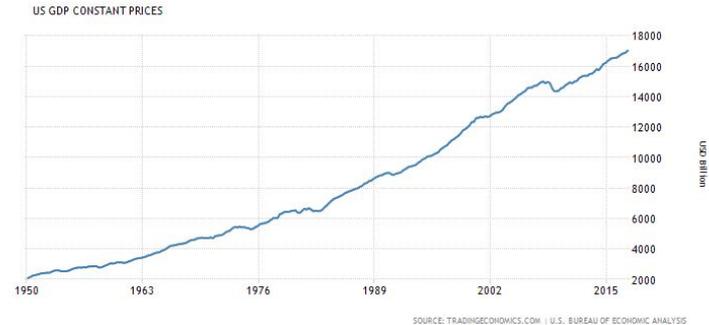
## EXAMPLE

- In 1966, Howard Hughes was forced to sell TWA (trans world airlines) and received a single check for US\$650 million. How much is that in 2004 dollars?
- The GDP deflator in USA in 1966 was 22.855. The deflator in 2004 was 107.958.
- In 2004 dollars this is

$$650 \cdot \frac{P_{2004}}{P_{1966}} = 650 \cdot \frac{107.958}{22.855} = 3044.63294$$



# TRENDS AND CYCLES

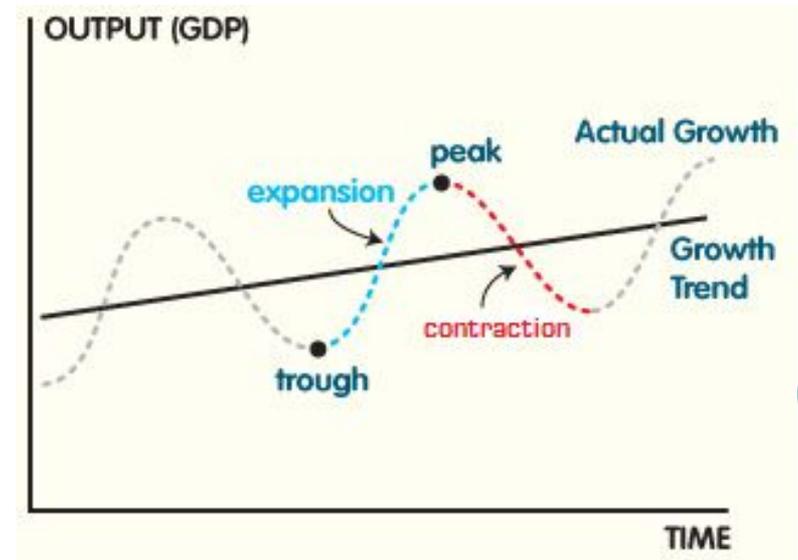


- We observe that real GDP is growing over time but at a non-constant rate.
- We call the growth path, if the economy were always growing at its average rate, the trend path.
- Fluctuations around the trend are called business cycles.

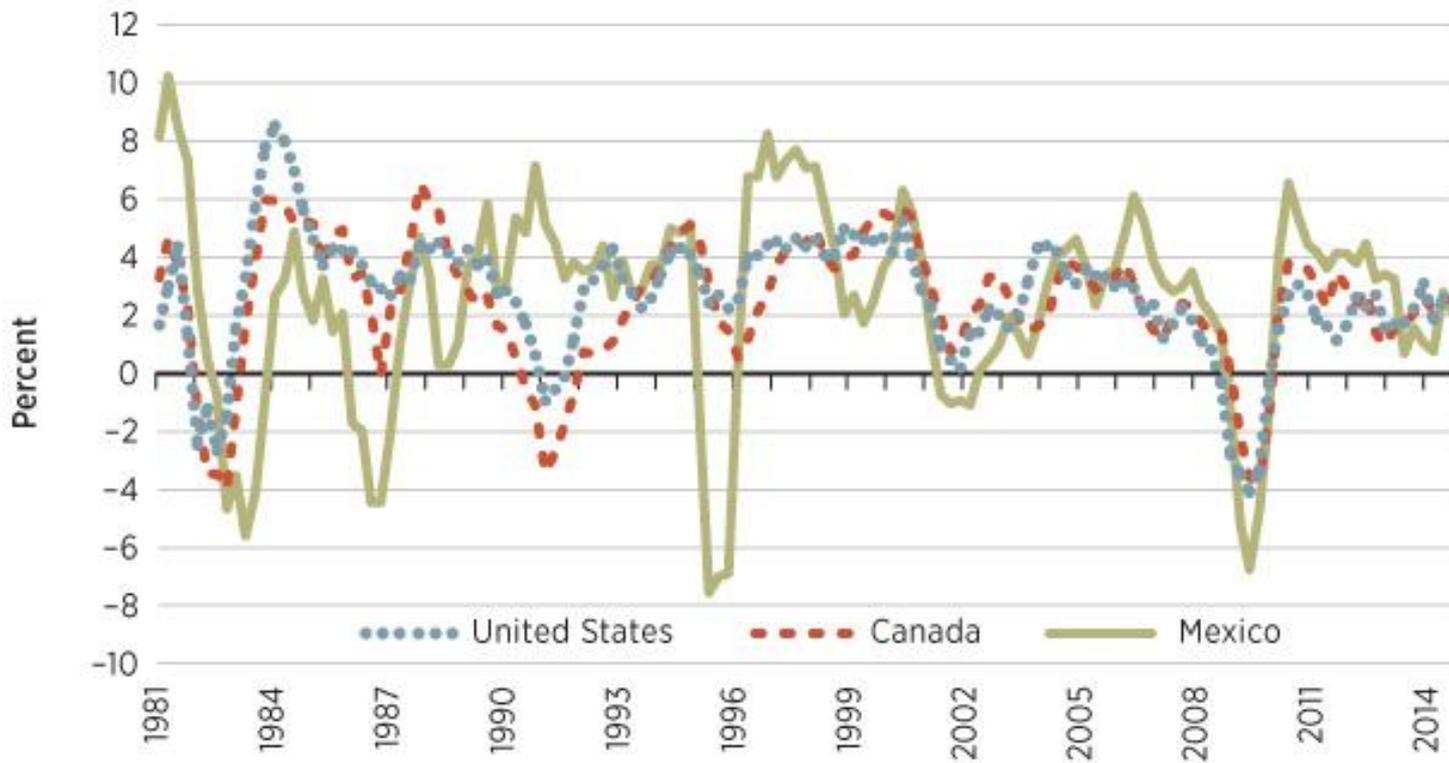


# BUSINESS CYCLE TERM

- As the economy fluctuates around the trend, the economy is experiencing business cycles.
- When economy is moving from a peak level to trough level, the economy is in a *contractionary* phase.
- When economy is moving from trough to peak, the economy is in an *expansionary* phase.
- When economy is moving from peak to trough the economy is in a contractionary phase



## An Example of How Countries' Business Cycles Can Become Correlated



SOURCE: Organization for Economic Cooperation and Development.

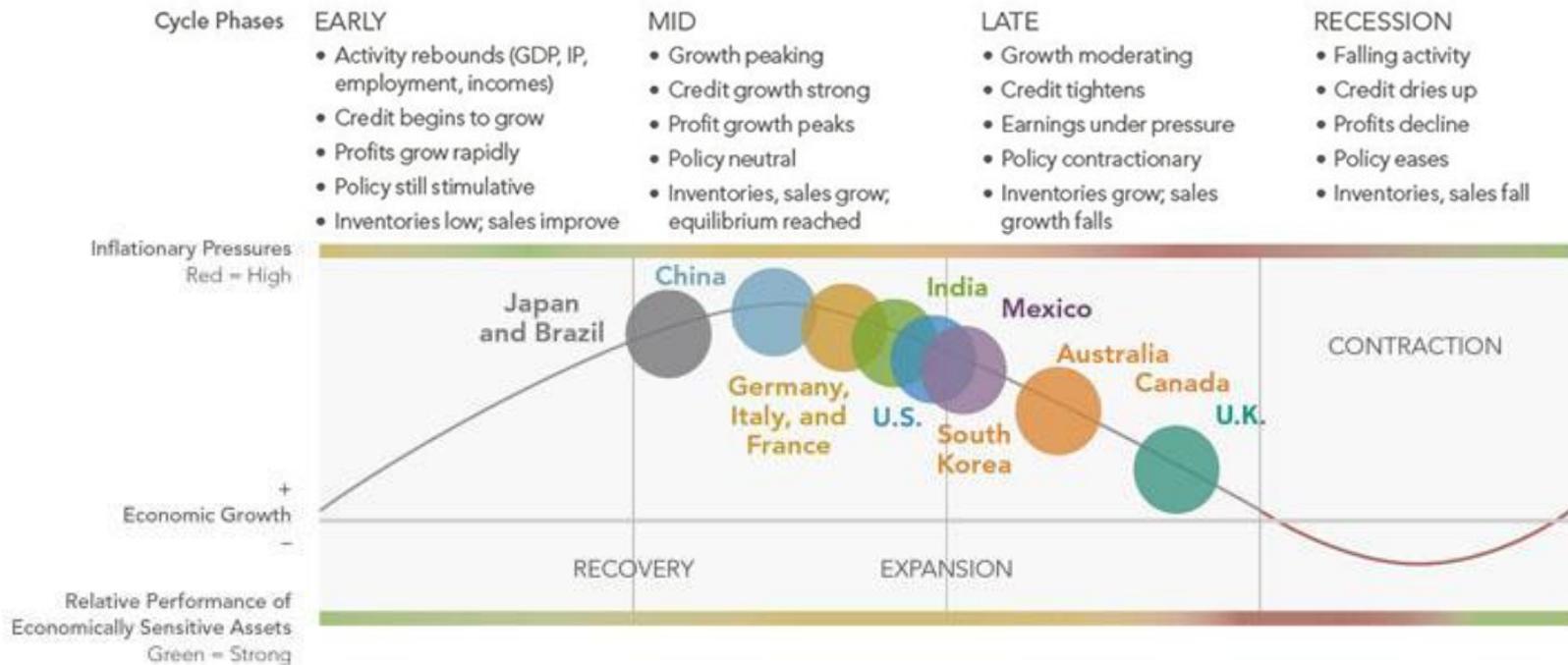
■ FEDERAL RESERVE BANK OF ST. LOUIS

The correlation of business cycles implies that groups of countries are in the same phase for stretches of time. An example of this can be seen in the figure, which shows the annual gross domestic product (GDP) growth rates in the United States, Canada and Mexico from 1981 through 2014. Notice that U.S. and Canadian data moved similarly over the past 30 or so years. In the past decade, the Mexican economy also fell into sync: The correlation between U.S. and Mexico increased by over 100 percent.

# NORTH AMERICAN FREE TRADE AGREEMENT (NAFTA)

- It is a piece of regulation implemented January 1, 1994 simultaneously in Mexico, Canada and the United States that eliminates most tariffs on trade between these nations.
- The essence of a free trade measure, NAFTA's purpose is to encourage economic activity between the three major economic powers of North America.
- NAFTA has two supplements: the North American Agreement on Environmental Cooperation (NAAEC) and the North American Agreement on Labor Cooperation (NAALC).
- About 1/4 of all U.S. imports (especially crude oil, machinery, gold, vehicles, fresh produce, livestock and processed foods) comes from Canada and Mexico, which are the United States' second- and third-largest suppliers of imported goods. In addition, about one-third of U.S. exports, particularly machinery, vehicle parts, mineral fuel/oil and plastics are destined for Canada and Mexico.





Note: The diagram above is a hypothetical illustration of the business cycle. There is not always a chronological, linear progression among the phases of the business cycle, and there have been cycles when the economy has skipped a phase or retraced an earlier one. Source: Fidelity Investments (AART), as of Sep. 15, 2017.

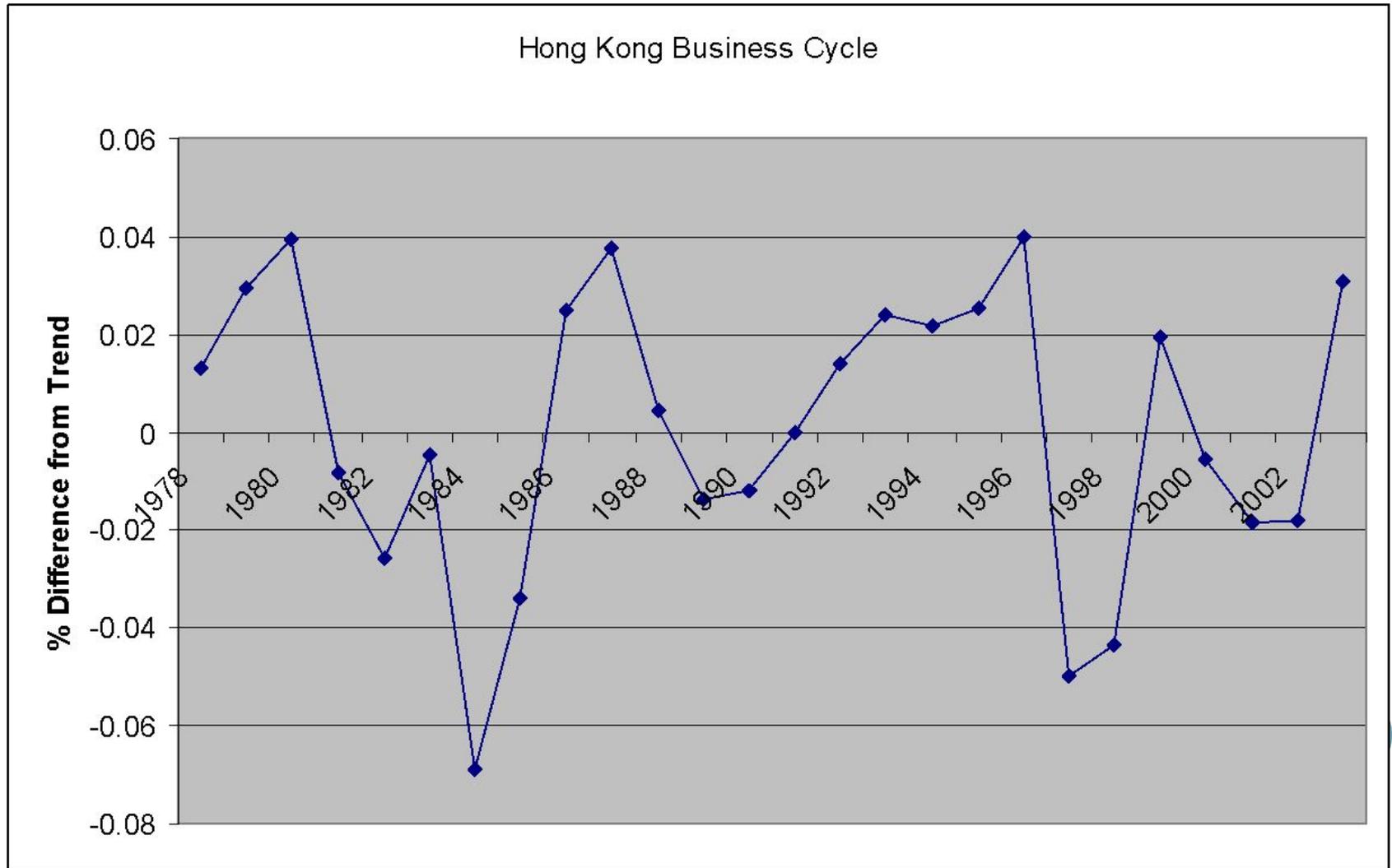
- The global expansion remains relatively steady and synchronized across major economies.
- Broadly speaking, most developed economies have low recession risk and are in more mature (mid-to-late) stages of the business cycle.
- The Eurozone is not as far along as the U.S. in the cycle, and it continues to benefit from improving sentiment and credit conditions.
- China's activity has rebounded to multiyear highs, but policy tightening and slowing momentum in industrial activity and housing suggest that most of the upside has already occurred.
- Overall, the global expansion is on firm ground, but peak activity levels have probably already been reached.

# RECESSION AND BOOMS

- Business cycle positions are sometimes characterized as booms and recessions.
- These names have many definitions
  - a boom occurs roughly when real output is above the trend growth path (detrended output is positive).
- A recession occurs roughly when real output is below trend growth.
  - In the USA, recessions are sometimes defined as 2 consecutive periods of negative growth.



# HONG KONG BUSINESS CYCLE



# BUSINESS CYCLES & CO-MOVEMENT

- Business cycles are fluctuations in the economy as a whole.
- Different sub-categories of GDP tend to co-move with business cycles though to different degree.
- Business cycles tend to co-move across countries though not as strongly as within countries.

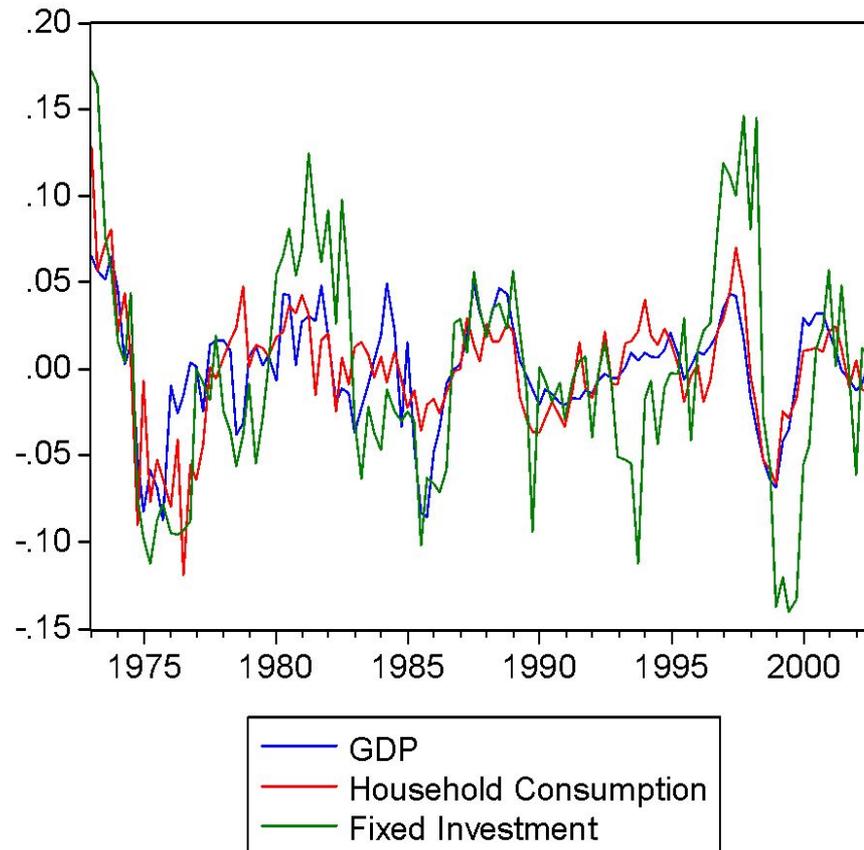


# BUSINESS CYCLES & SUB-CATEGORIES

- **Expenditure.** Consumption and Investment co-move with output. Investment is more volatile than consumption. Consumer durables are most volatile part of consumption.
- **Production** – Production sectors co-move with business cycles. Manufacturing & Construction most volatile. Services least volatile.
- **Income** – Worker Compensation & Capital Income are both pro-cyclical. Capital Income tends to be more volatile.

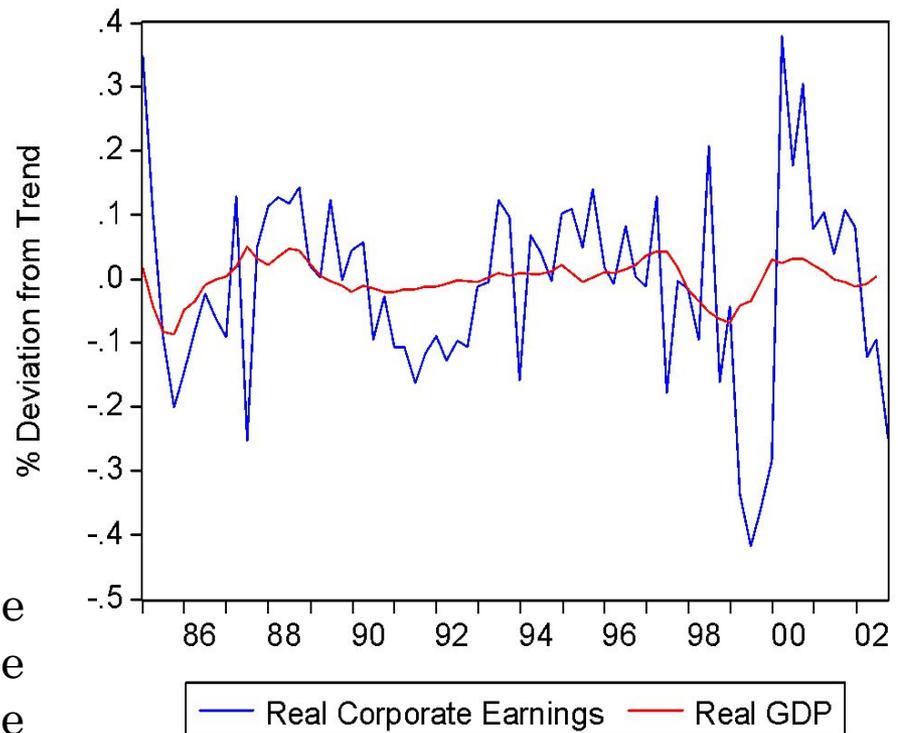


# HONG KONG EXPENDITURE CYCLE



# CORPORATE PROFITS

- Corporate profits are strongly pro-cyclical and volatile.
- When the economy is doing well, corporations tend to earn high real profits.
- Corporate profits fluctuate far more than the economy as a whole

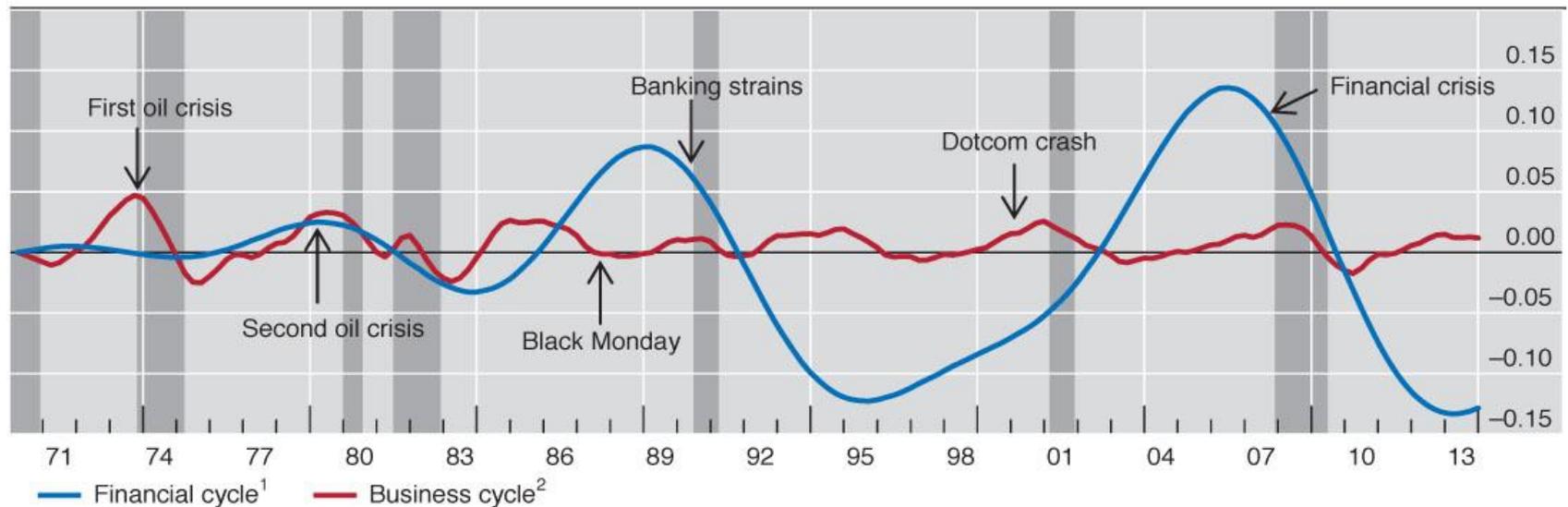


HK Corporate Earnings & the Business Cycle

# USING FINANCIAL MARKET DATA TO PREDICT BUSINESS CYCLES

- It has been joked that stock markets have predicted 7 out of the last 5 recession.  
(In fact there does seem to be a moderately strong, positive correlation between cyclical variation in stock prices and business cycles)
- In the USA, some financial market indicators have been shown to predict business cycles.
  - Default Spread : Interest rates on lower rated bonds vs. Interest rates on better rated bonds.
  - Term Spread: Interest rates on long-term bonds vs. short-term bonds (when this is inverted, recession is likely)





<sup>1</sup> The financial cycle as measured by frequency-based (bandpass) filters capturing medium-term cycles in real credit, the credit-to-GDP ratio and real house prices. <sup>2</sup> The business cycle as measured by a frequency-based (bandpass) filter capturing fluctuations in real GDP over a period from one to eight years.

Source: M Drehmann, C Borio and K Tsatsaronis, "Characterising the financial cycle: don't lose sight of the medium term!", *BIS Working Papers*, no 380, June 2012.

- The traditional business cycle frequency is around one to eight years. By contrast, the financial cycles that matter most for banking crises and major macroeconomic dislocations last 10-20 years. Focusing on medium-term frequencies is appropriate for two reasons. First, credit and property prices move much more closely together at these frequencies than at higher ones. Second, these medium-term cycles are an important driver of overall fluctuations in these two series, much more so than medium cyclical fluctuations are for real GDP. Financial cycles identified in this way are closely associated with systemic banking crises and serious economic damage. This holds irrespective of whether they are identified with a turning point approach or a statistical filter

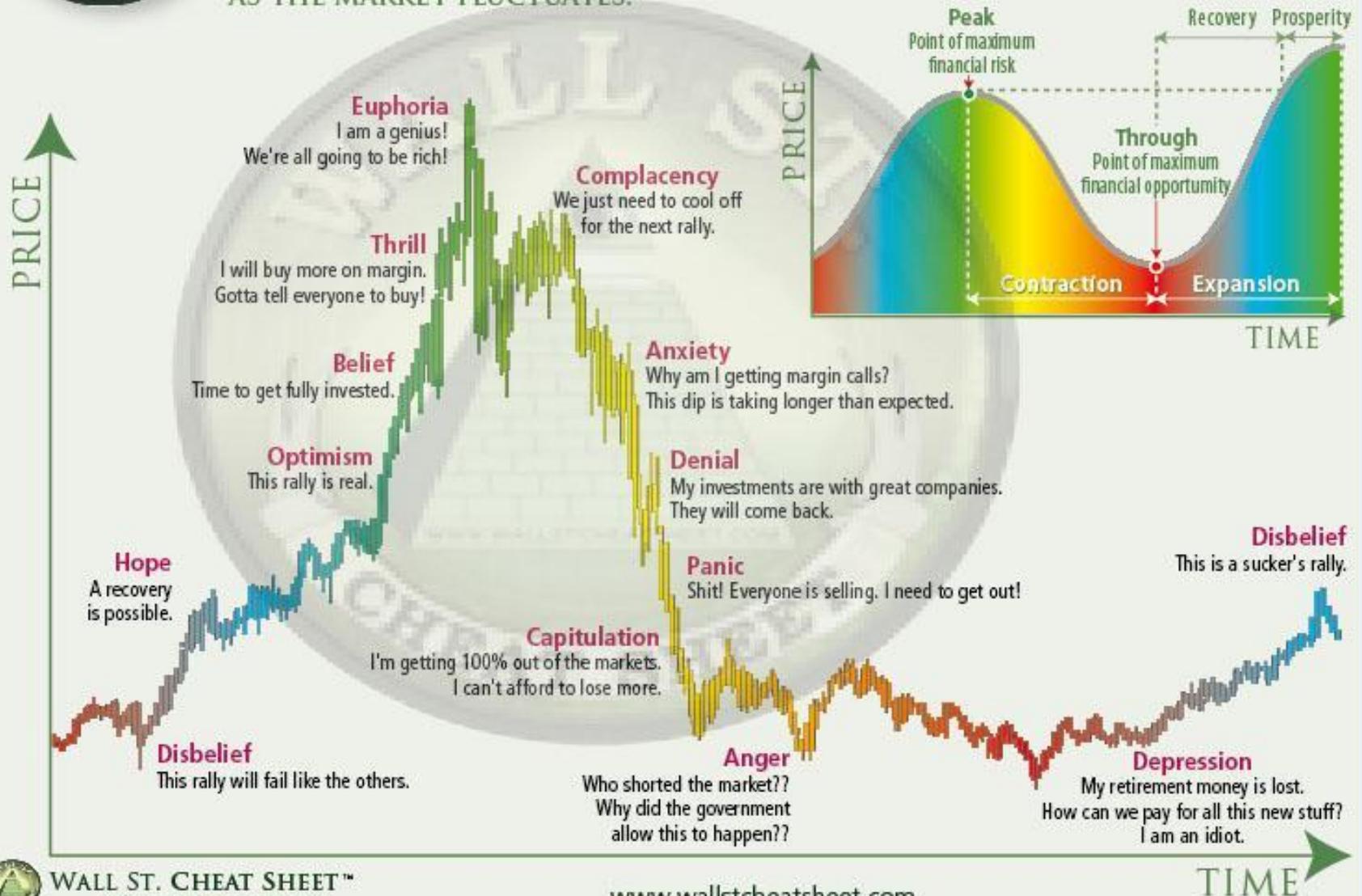


# WALL ST. CHEAT SHEET™ WE'VE GOT THE WORD ON THE STREET

## PSYCHOLOGY OF A MARKET CYCLE

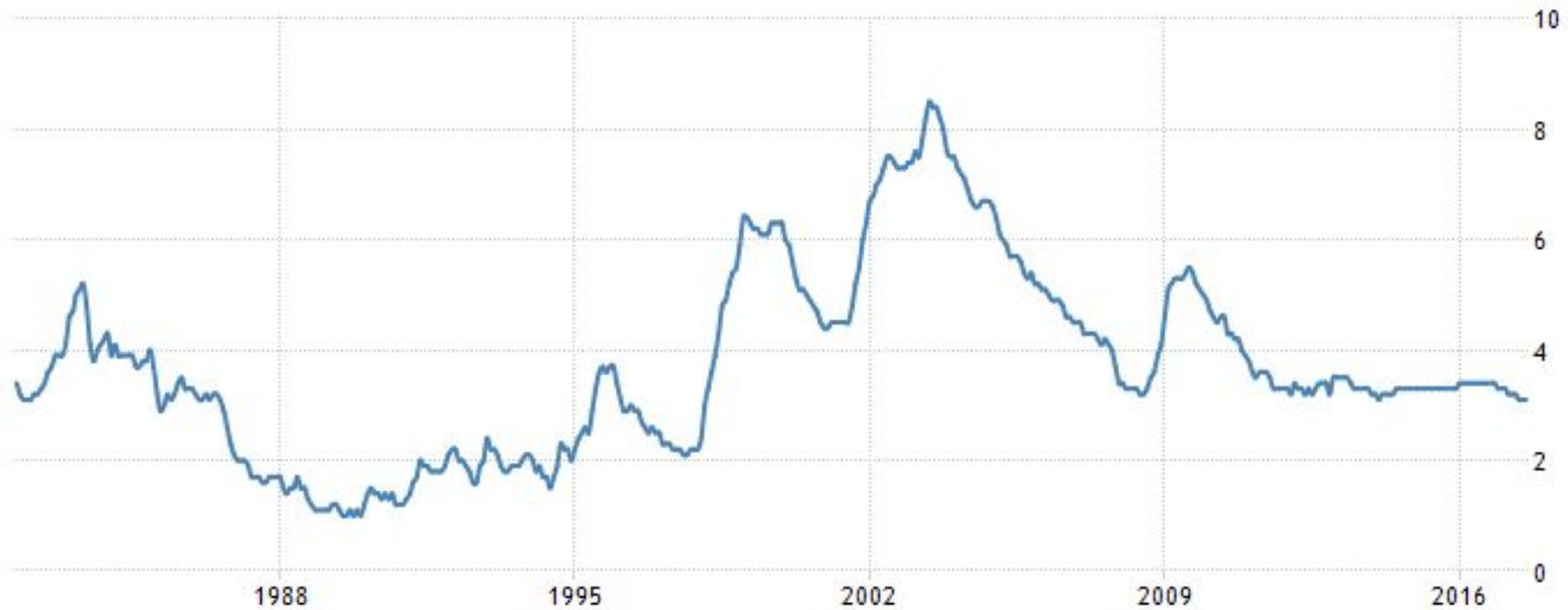
THE FEELINGS APPEARING AS THE MARKET FLUCTUATES.

### SIMPLIFIED MARKET CYCLE



# LEVEL OF UNEMPLOYMENT (HK)

HONG KONG UNEMPLOYMENT RATE

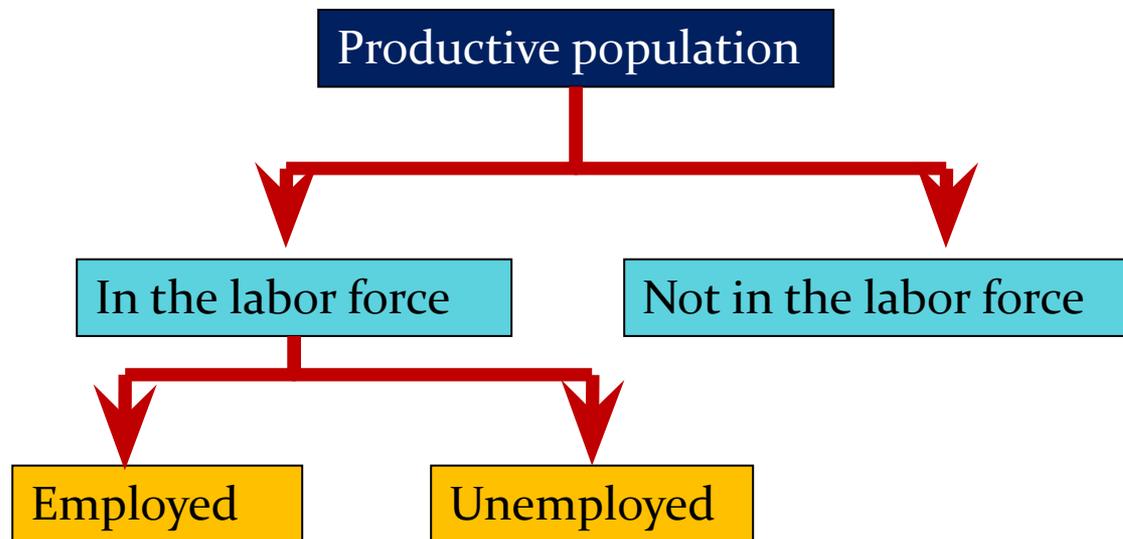


SOURCE: [TRADINGECONOMICS.COM](http://TRADINGECONOMICS.COM) | CENSUS AND STATISTICS DEPARTMENT, HONG KONG



# UNEMPLOYMENT

- Is defined by the International Labor Organization (ILO) as a situation in which people are without jobs and they have actively looked for a job for the past four weeks.
- According to this definition, people who do not look for a job will not be considered unemployed.



# UNEMPLOYMENT

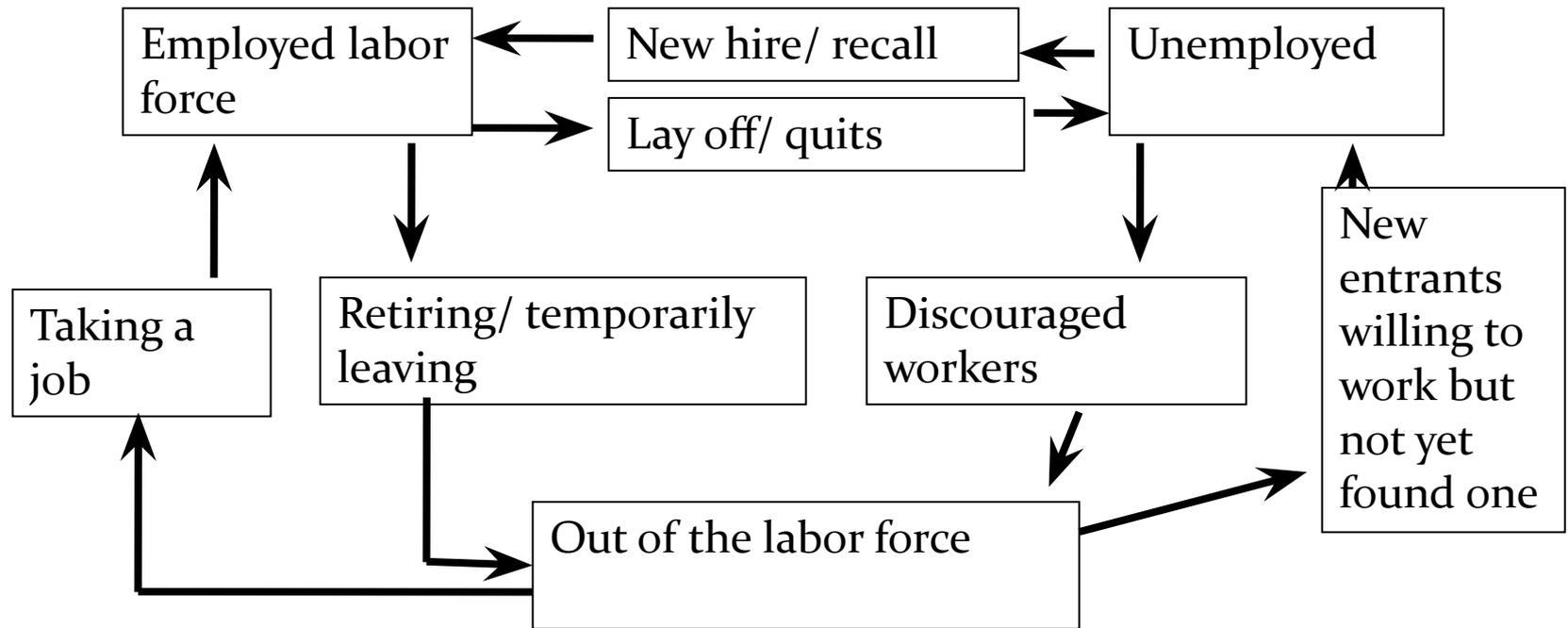
- ❏ The population resides in 1 of 3 categories
  1. **Employed**: Currently working
  2. **Not in the Labor Force**: Not working and not actively seeking work
  3. **Unemployed**: Not working but seeking work

Unemployment Rate (*U-3 rate*)

$$UR = \frac{\text{Unemployment}}{\underbrace{\text{Employment} + \text{Unemployment}}_{\text{Labor force}}} \times 100\%$$

*Many people who would like to work but cannot (due to a disability, for example), or have become discouraged after looking for work without success, are not considered unemployed under this system; since they are not employed either, they are categorized as outside the labor force. Critics see this approach as painting an unjustifiably rosy picture of the labor force. U3 is also criticized for making no distinction between those in temporary, part-time and full-time jobs, even in cases where part-time or temporary workers would rather work full-time but cannot due to labor market conditions.*

# EMPLOYMENT DYNAMICS



*A discouraged worker is a person who is eligible for employment and is able to work, but is currently unemployed and has not attempted to find employment in the last four weeks.*



# EXAMPLE

## □ Who is counted as employed?

- On vacation
- Ill
- Experiencing child care problems
- On maternity or paternity leave
- Taking care of some other family or personal obligation
- Involved in a labor dispute
- Prevented from working by bad weather

## Fictional scenarios:

- Elena reported to the interviewer that last week she worked 40 hours as a sales manager for a beverage company. Elena is **employed**.
- Steve lost his job when the local plant of an aircraft manufacturing company closed down. Since then, he has been contacting other businesses in town trying to find a job. Steve is **unemployed**.
- Linda is a stay-at-home mother. Last week, she was occupied with her normal household activities. She neither held a job nor looked for a job. Her 80-year-old father who lives with her has not worked or looked for work because of a disability. Linda and her father are **not in the labor force**.

## EXAMPLE

- Garrett is 16 years old, and he has no job from which he receives any pay or profit. However, Garrett does help with the regular chores around his parents' farm and spends about 20 hours each week doing so.
- Lisa spends most of her time taking care of her home and children, but she helps in her husband's computer software business all day Friday and Saturday.
- Both Garrett and Lisa are considered employed. They fall into a group called unpaid family workers, which includes any person who worked without pay for 15 hours or more per week in a business or farm operated by a family member with whom they live. Unpaid family workers comprise a small proportion of total employment. Most of the employed are either wage and salary workers (paid employees) or self-employed (working in their own business, profession, or farm).
- In addition to estimating the number of employed people, the survey collects information about the job characteristics of the employed. For example, the survey gathers and provides data about workers' industry and occupation, hours worked, usual earnings, and union membership.



# TYPES OF UNEMPLOYMENT

<b>Cyclical Unemployment</b>	<b>Structural Unemployment</b>	<b>Frictional Unemployment</b>
<p>Unemployment associated with business cycles.</p> <ul style="list-style-type: none"> <li>• When demand falls, demand for labor falls. Workers may not be at first willing to work at new market wage rate and may sit idle</li> </ul>	<ul style="list-style-type: none"> <li>• When specific demands for workers (location or skills) does not match the characteristics of the workforce.</li> <li>• Restrictions on job conditions may make it difficult for firms to find workers that match their needs under given conditions</li> <li>• Minimum wage means only high skill workers may be hired.</li> <li>• Firing costs may mean that jobs for young or difficult to evaluate workers may not appear</li> </ul>	<p>Unemployment that occurs as a part of the movement in and out of the workforce.</p> <ul style="list-style-type: none"> <li>• Very frequently when a worker changes their employment situation there is some period of unemployment</li> </ul>

# UNDEREMPLOYMENT

- Underemployment is a measure of employment and labor utilization in the economy that looks at how well the labor force is being utilized in terms of skills, experience and availability to work.
- Labor that falls under the underemployment classification includes those workers who are highly skilled but working in low paying jobs, workers who are highly skilled but working in low skill jobs and part-time workers who would prefer to be full time. This is different from unemployment in that the individual is working but is not working at his full capability.



# DISGUISED (HIDDEN) UNEMPLOYMENT

- Disguised unemployment exists where part of the labor force is either left without work or is working in a redundant manner where worker productivity is essentially zero. It is unemployment that does not affect aggregate output. An economy demonstrates disguised unemployment when productivity is low and too many workers are filling too few jobs.
  - exists frequently in developing countries whose large populations create a surplus in the labor force. It can be characterized by low productivity and frequently accompanies informal labor markets and agricultural labor markets, which can absorb substantial quantities of labor.
  - can refer to any segment of the population not employed at full capacity, but it is often not counted in official unemployment statistics within the national economy. This can include those working well below their capabilities, those whose positions provide little overall value in terms of productivity, or any group that is not currently looking for work but is able to perform work of value



# ALTERNATIVE MEASURES

- **U-1** People who have been unemployed for 15 weeks or longer, expressed as a percentage of the labor force.

$$\frac{\text{Unemployed 15-plus weeks}}{\text{Labor force}} * 100\% = U1$$

- **U-2** People who lost their jobs, or whose temporary jobs ended, as a percentage of the labor force.

$$\frac{\text{Job losers}}{\text{Labor force}} * 100\% = U2$$

- **U-4** Unemployed people, plus discouraged workers, as a percentage of the labor force (plus discouraged workers).

$$\frac{\text{Unemployed + discouraged workers}}{\text{Labor force + discouraged workers}} * 100\% = U4$$

***Discouraged workers*** are those who are available to work and would like a job, but have given up actively looking for one.\*\*



# ALTERNATIVE MEASURES

- ▣ **U-5** Unemployed people, plus those who are marginally attached to the labor force, as a percentage of the labor force (plus the marginally attached).

$$\frac{\text{Unemployed + marginally attached}}{\text{Labor force + marginally attached}} * 100\% = U5$$

People who are marginally attached to the labor force include discouraged workers and anyone else who would like a job and has looked for one in the past 12 months, but have given up actively searching. As with U4, the denominator is expanded to include the marginally attached, who are not technically part of the labor force.



## ALTERNATIVE MEASURES

- **U-6** Unemployed people, plus people who are marginally attached to the labor force, plus those who are employed part-time for economic reasons, as a percentage of the labor force (plus marginally attached).

$$\frac{\text{Unemployed} + \text{marginally attached} + \text{part-time for economic reasons}}{\text{Labor force} + \text{marginally attached}} * 100\% = \text{U6}$$

This metric is the Bureau of Labor Statistics (BLS) most comprehensive. In addition to the categories included in U5, it accounts for people who have been forced to settle for part-time work even though they want to work full-time. This category is often referred to as "underemployed," although that label arguably includes full-time workers who are overqualified for their jobs. The denominator for this ratio is the same as in U5.





Rank	Country	1991	2016
1	Qatar	0,8	0,2
2	Cambodia	0,5	0,3
3	Belarus	0,6	0,5
4	Thailand	2,7	0,6
5	Maynmar	0,9	0,8
26	Japan	2,1	3,1
47	China	4,9	4,6
51	USA	6,8	4,9
55	Nigeria	5,9	5,0
81	Poland	12,0	6,2
117	Ukraine	7,6	8,9
...	Solomon Islands	32,0	31,4

- Tightly regulated labor markets increase structural unemployment.
- High social welfare benefits increase frictional costs as workers have little incentive to search diligently until the benefits work out.



# HOW TO SOLVE THE PROBLEM

- There are two ways the government can help the unemployed.
  1. There are **passive programs**, such as unemployment insurance, that help the unemployed make ends meet and stabilize the economy by providing funds that are generally spent immediately. Then there are active programs, such as might help the unemployed meet the skills requirements of available jobs.
  2. **Active labor market policies** (ALMP). They can be divided into six categories:
    - Training programs to help workers move from one industry and occupation to another.
    - Job-search assistance to help match the unemployed with employers.
    - Employment incentives for employers.
    - Supported employment to subsidize cost of new hires.
    - Direct job creation of government spending programs.
    - Other policies, which can be diverse, including entrepreneurship incentives

