

Medium-term adjustment and the Inflation dynamic

Keynesian, Monetarism, New Classical, New Keynesian

PART II : New Classical and New Keynesian

EE312 Topic 5, 6 (for Section 046402)

Read: Froyen Ch.11-12

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1 Introduction :

Competing Theories : Compare / Contrast on

Question 1: What do they view about inflation dynamic? Essential features?

Question 2: How we reach medium-term adjustment?

Question 3: Policy implications

Historical evolution of Competing theories

Keynesian : CH4

Q1: Permanent trade-off in inflation / unemployment / output

Q2: No discussion about medium-term adjustment.

Q3: Supporting activism policy (fiscal policy)

Monetarist : CH4

Q1: No permanent trade-off; Natural level exists

Q2: Inflation expectation acceleration

Q3: Constant money supply rule.

New Classical : CH5

Q1: No permanent trade-off / price misinterpretation.

Q2: Inflation expectation; quick response.

Q3: Rule-based policy; avoid being a source of shock

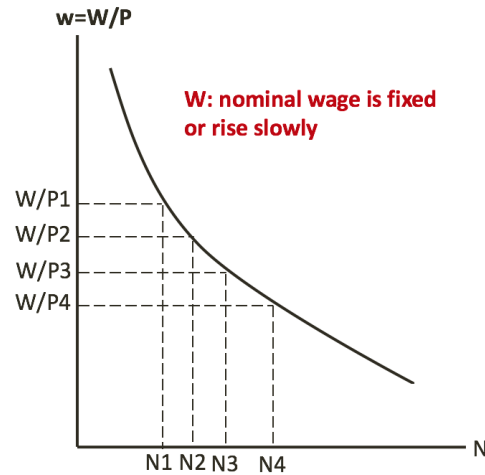
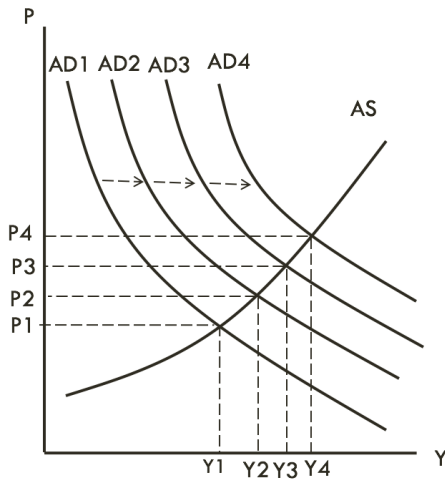
New Keynesian: CH6

Q1: No permanent trade-off / price/wage rigidity

Q2: Inflation expectation; but slowly adjust because of frictions.

Q3: Systematic Feed-back policy

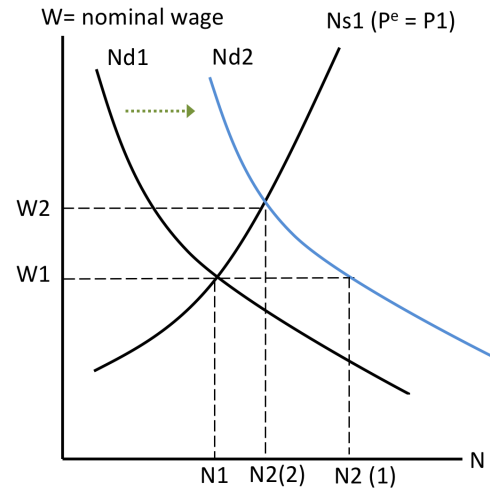
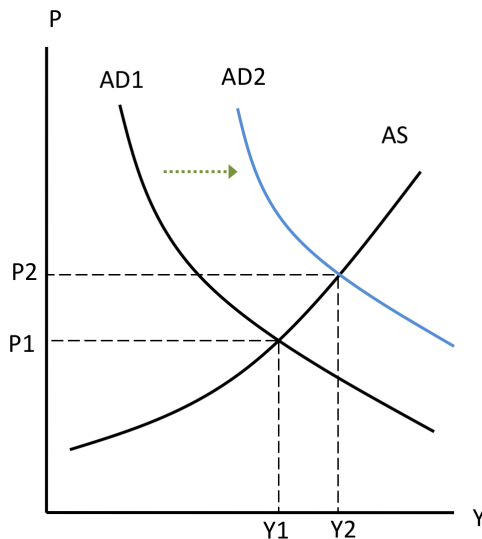
2 A Review on Keynesian Position



- Crucial to these results is the fact that
 - the positions of both the aggregate supply schedule
 - labor supply schedule are fixed in the short run.
- The position of both of these schedules depends on the value of **the expected price level** (P^e).
 - **the expected price level** (P^e) is assumed to depend primarily on past prices and not to change with current policy actions.
- Consider the characterization of equilibrium output and employment.
 - Labor Supply : utility maximization condition , $\frac{MU_\ell}{MU_C} = \frac{W}{P} \Rightarrow N^S\left(\frac{W}{P}\right) = N^S(W, P)$
 - * As real wage $\left(\frac{W}{P}\right)$ increases, labor supply (N^S) increases
 - * Given other things being equal, nominal wage (W) increases, labor supply (N^S) increases
 - * Given other things being equal, price level (P) increases, labor supply (N^S) decreases
 - * Labor supply makes their decision based on $P = P^e$.
 - * $N^S(P = P^e) \Rightarrow N^S\left(\frac{W}{P^e}\right)$
 - Labor Demand : profit maximization condition , $MPN = \frac{W}{P} \Rightarrow P.MPN = W$
 - * As real wage $\left(\frac{W}{P}\right)$ increases, labor demand (N^d) decreases
 - * Given other things being equal, nominal wage (W) increases, labor supply (N^d) decreases
 - * Given other things being equal, price level (P) increases, labor supply (N^d) increases

- **Keynesian Analysis of adjustments process in labor market and inflation dynamic :**

- $N^S(P^e) \Rightarrow AS(P^e)$
- P^e is assumed to depend primarily on **past prices** and **not to change with current policy** actions.



3 New Classical

- The new classical economics, however, is a more fundamental attack on the Keynesian theoretical system than is monetarism.
- New classical economists have been motivated by a belief that the **Keynesian structure is fundamentally flawed**.
- They have attacked **not just the usefulness** of Keynesian analysis for understanding economic events and designing useful policies **but also its internal consistency**.

3.1 Rational Expectations : Meaning

- **Rational expectations** expectations formed on the basis of **all available relevant information concerning the variable being predicted**. Moreover, economic agents are assumed to use available information intelligently; that is, they understand the relationships between the variables they observe and the variables they are trying to predict.
- A useful contrast can be made between the **backward-looking nature of expectations in the Keynesian model** and the **forward-looking nature of rational expectations**.
- In the Keynesian model, expectations are backward looking.
 - The expectation of a variable such as the price level adjusts (slowly) to the past behavior of the variable
- According to the rational expectations hypothesis,
 - Economic agents instead use all available relevant information and intelligently assess the implication of that information for the future behavior of a variable.

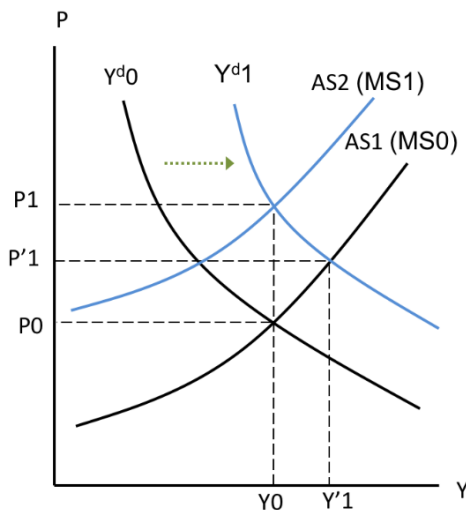
3.2 Rational Expectation : Output and Labor Market

- The expected price level depends on the expected levels of the variables in the model that actually determine the price level.
- These include the expected levels of the money supply (M^e), government spending (G^e) and tax collections (T^e), autonomous investment (I^e) and possibly other variables.
- $P^e(M^e, G^e, T^e, I^e, \dots) \Rightarrow N^S(W, P^e) = N^S(W, M^e, G^e, T^e, I^e, \dots)$
- Hence, aggregate supply function (AS) is $AS(P, W, M^e, G^e, T^e, I^e, \dots)$

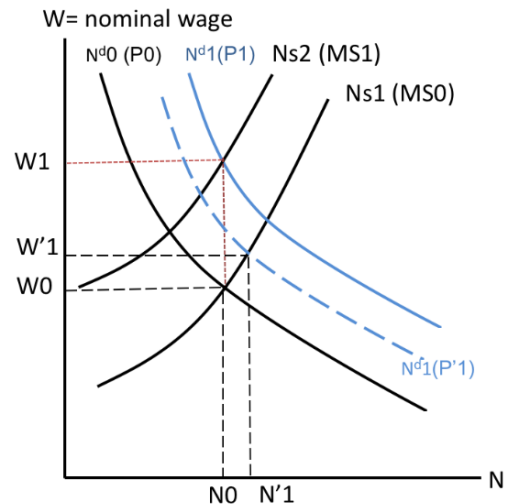
3.3 Analysis of adjustments process in labor market and inflation dynamic : Anticipated Policy

- Consider the effect of a fully anticipated increase in the money supply from M_0 to M_1 .

Output



Employment



- The new classical analysis differs from either a Keynesian or a monetarist analysis in that
 - **labor suppliers are assumed to perceive correctly the price increase** that will result from the increase in the money supply.
 - They will **demand proportionately higher money wages**.
 - The labor market will **return to equilibrium only after the money wage and price level have increased in the same proportion, the real wage is unchanged**, and consequently employment and output are back at their initial levels.
- Put differently, in the Keynesian or monetarist analysis,
 - the increase in the money supply leads to an increase in employment and output in the short run—that is, until labor suppliers correctly perceive the increase in the price level that results from the expansionary monetary policy action.

- In the Keynesian or monetarist view, because expectations about prices are backward looking, this short-run period in which the increase in the money supply affects output and employment can be of considerable length.
- If expectations are rational, forward-looking labor suppliers cannot be systematically fooled by anticipated changes in aggregate demand policy
- If expectations are formed rationally, **anticipated aggregate demand policy actions will not affect real output or employment, even in the short run.**
- **Any such set of systematic policy actions will be anticipated and will not affect the behavior of output or employment.**
- Thus far, we have been assuming that the increase in the money supply was anticipated either because it was announced or because it was a systematic policy response that could be predicted.
- Now consider the effects of an unanticipated increase in aggregate demand.

3.4 Analysis of adjustments process in labor market and inflation dynamic : Unanticipated Policy

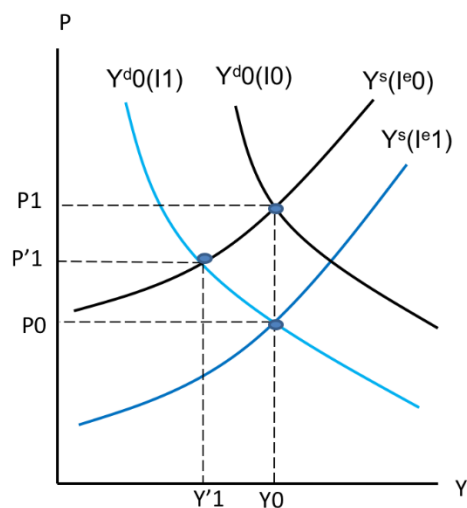
- We again consider the effects of an increase in the money supply from M_0 to M_1 , but the analysis would be similar for an unanticipated increase in aggregate demand from another source.
- The short-run effects of this unanticipated increase in the money supply—what can be termed “**a monetary surprise**”.
- As the price level rises to P^1 , the labor demand schedule also shifts to the right, to $N^d(P^1)$.
- **If the increase in the money supply is unanticipated, these are the only schedules that shift** in the short run.
- **The additional shift** to the left in the labor supply schedule and consequently the shift to the left in the aggregate supply schedule shown, where the increase in the money supply was anticipated, **do not occur for an unanticipated increase in the money supply.**
- When the increase in **the money supply is not anticipated, it does not affect the labor suppliers’ expectation** of the value the aggregate price level will take on over the current period, so the labor supply schedule does not shift.
- When the increase in the money supply is unanticipated, the new classical model indicates that **output and employment will be affected.**
- Output will rise from Y_0 to Y^1 and employment will increase from N_0 to N_1 , results **identical to those of the Keynesian or monetarist analysis** of such an increase in aggregate demand.
- The assumption in both the Keynesian and monetarist views for any change in aggregate demand.
 - For the short run, even assuming rational expectations, labor suppliers do not perceive the inflationary effect of the increase in aggregate demand.

New classical economists deny that anticipated changes in aggregate demand can affect output and employment, but their view of the effects of unanticipated changes in aggregate demand does not differ from that of Keynesians and monetarists.

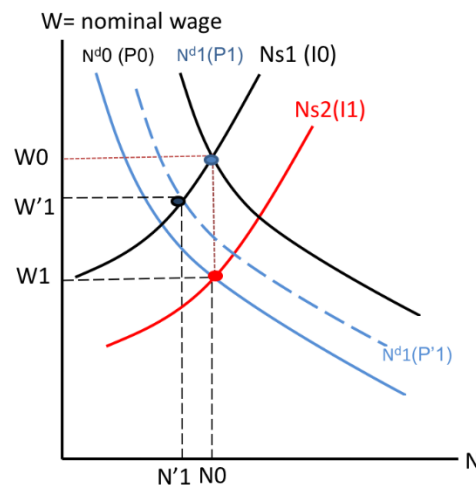
3.5 New Classical Policy Conclusion

- The new classical view that unanticipated aggregate demand changes affect output and employment still does not provide a meaningful role for macroeconomic stabilization policy.
- What is the proper policy response to a decline in private-sector demand—for example, an autonomous decline in investment?
 - We have already analyzed the Keynesian view of the proper policy response to shocks of this type. Keynesians argue that a decline in private-sector demand should be offset by an expansionary monetary or fiscal policy action to stabilize aggregate demand, output, and employment
- Suppose investment declines.
 - Investment schedule declines from $\bar{I}_0$ to $\bar{I}_1$.
 - An autonomous decline in investment shifts the aggregate demand schedule. Aggregate demand declines from $Y^d(\bar{I}_0)$ to $Y^d(\bar{I}_1)$
 - This shift causes output to decline from Y_0 to Y_1 .
 - The price level will fall from P_0 to P_1 , and
 - The fall in the price level shifts the labor demand schedule. The labor demand schedule will shift downward from $N^d(P_0)$ to $N^d(P'_1)$.
 - As a result, employment falls from N_0 to N_1 . **These are the only effects if the decline in investment was not anticipated.**
 - If the decline in investment was anticipated,
 - * the expected level of autonomous investment will also fall from I_0^e to I_1^e .
 - * The aggregate supply schedule will shift from $Y^S(I_0^e)$ to $Y^S(I_1^e)$, and labor supply schedule will shift from $N^S(I_0^e)$ to $N^S(I_1^e)$.
 - * Those shifts cause output and employment to return to their initial levels.
 - Whether there are additional effects from the decline in investment depends, in the new classical view, on whether the decline was or was not anticipated.

Output



Employment



- In the new classical system, output and employment are not affected by anticipated changes in aggregate demand, even in the short run.
 - Consequently, there is **no need for a stabilization policy response to an anticipated demand** change such as a decline in investment.
- What if the decline in investment had not been anticipated?
 - The decline in investment would have caused output and employment to decline to the levels given by $Y'1$ and $N'1$.
 - Would not an offsetting policy action to raise aggregate demand back to its initial level be called for?
 - The answer is that such a policy response would be **desirable but not feasible**.
 - The decline in investment was by definition unanticipated. That is, assuming rational expectations, the decline could not have been predicted on the basis of any available information. Policymakers, like any other economic agents, would have been unable to foresee the investment decline in advance. They could not have acted to raise aggregate demand to offset the decline.
 - If low investment was expected to continue, however, there would be no need for a policy response because private agents would also hold this expectation.

Anticipated shocks $\Rightarrow$ **no need for a stabilization policy**. Output and employments are not affected even in the short run.

Unanticipated shocks $\Rightarrow$ **desirable but not feasible**. Policy makers lack the knowledge needed to offset the shock. Once the shock is anticipated by policy makers, it is also anticipated by other economic agents, including labor suppliers, and there is no need to offset the shock.

- No useful role for aggregate demand policies aimed at stabilizing output and employment.
- In this respect, new classical economists agree with the monetarists. Concerning monetary policy, many new classical economists favor a policy rule. A policy rule targeting money growth or inflation would reduce unanticipated policy changes, which have no stabilization value and cause economic agents to make price forecast errors.

4 New Keynesian Economics

- The Keynesian models can explain unemployment and a role for aggregate demand in determining output and employment.
- A key element in these models is money wage rigidity.
- A fall in aggregate commodity demand, for example, leads to a fall in labor demand. As a result of fixed-wage labor contracts and workers' backward-looking price expectations, the money wage will not fall sufficiently in the short run to maintain the initial employment level. Employment and output will fall. Unemployment will rise.
- Over the past three decades, economists working within the Keynesian tradition have pursued **additional explanations** of involuntary unemployment. The models that have resulted from this research effort are called new Keynesian models.

4.1 Sticky Price (Menu Cost) Models

- The firm must not be a perfect competitor.
- With perfect competition, prices are set by the forces of supply and demand. $\Rightarrow$ There is no room for sticky prices in this market.
- In the case of a monopolistic competitor or oligopolistic firm, the situation is different.
 - Monopolistic competitors and oligopolies have some control over the price of their products. In fact, the incentive to lower prices may be fairly weak for these types of firms.
 - Still, in the face of a fall in demand, the profit-maximizing price will decline even for a firm in a setting of imperfect competition.
 - Why, then, might firms still not lower prices?
 - Firms would hold product prices constant even as demand fell if there was a perceived cost to changing prices that outweighed the benefit of the price cut.
 - Such costs of price changes are called **menu costs**. [The name stems from the fact that if restaurants change prices, they must print new menus.]
 - When firms change prices, they incur direct and indirect costs of several types.
 - * **Managerial costs** : the information cost, the cost of communicating to customers and negotiating with customers who resist the change
 - * **Loss of consumer goodwill** : Consumer goodwill would be lost only through price increases, but firms that cut prices in recessions must raise them in recoveries.
 - * **Set off competitive rounds of price cuts** : This potential cost is relevant for oligopolistic markets, where firms are cognizant of other firms' reactions to their pricing decisions.
 - If these perceived costs of price changes are high enough, price stickiness will exist.
 - Declines in aggregate demand will result in falls in output and employment, not price reductions.
 - Of course, not all prices need to be sticky. As long as the number of industries in which prices are rigid constitutes a significant segment of the economy

4.2 Efficiency Wage Models

- Efficiency Wage Models are models in which labor productivity depends on the real wage that workers are paid.
- In fact, the rationales that underlie efficiency wage models imply that firms will set the real wage above the market-clearing level. Persistent, involuntary unemployment will result.
 1. **The shirking model.** By setting the real wage above going market levels (i.e., a worker's next best opportunity), a firm gives a worker an incentive not to shirk or loaf on the job.
 2. **Turnover cost models.** By paying an above-market wage, firms can reduce quit rates and, thus, recruiting and training costs.
 3. **Gift exchange models.** The firm pays the workers a gift of the above-market wage, and the workers reciprocate with higher efficiency
- None of these rationales is intended to apply to all parts of the labor market.
- If efficiency wage considerations are important and therefore real wage rates are set above market-clearing levels in many sectors, substantial involuntary unemployment may result.

4.3 Insider-Outsider Models and Hysteresis

- A variable exhibits **hysteresis** if, when shocked away from an initial value, it shows no tendency to return even when the shock is over.
- Insiders (e.g., union members) are the only group that affects the real wage bargain.
- Outsiders (e.g., those who want jobs) do not.
- Insiders are assumed to have bargaining power with employers because it is costly to replace them with outsiders (nonunion members)
 - The cost of replacing them is a recruiting and training cost for new workers. Insiders may also impose costs on outsiders who attempt to underbid them for jobs.
- The insiders are assumed to use their bargaining power to push the real wage above the market-clearing level, resulting in an unemployed group of outsiders
- Insiders will push the real wage only up to a certain point, however, because the higher the real wage, the fewer insiders will be employed.
- If the economywide aggregate demand slackens unexpectedly, a percentage of the insiders will be laid off.
- Recessions cause insiders to become outsiders.
- After the recession, with fewer insiders, wage bargain continues. The real wage rises and unemployment persists.
- Past unemployment, then, causes current unemployment by turning insiders into outsiders; this is the hysteresis phenomenon.
- Once insiders have become outsiders, a sort of unemployment trap occurs. The outsiders do not exert downward pressure on real wages because they are irrelevant to the wage-bargaining process.