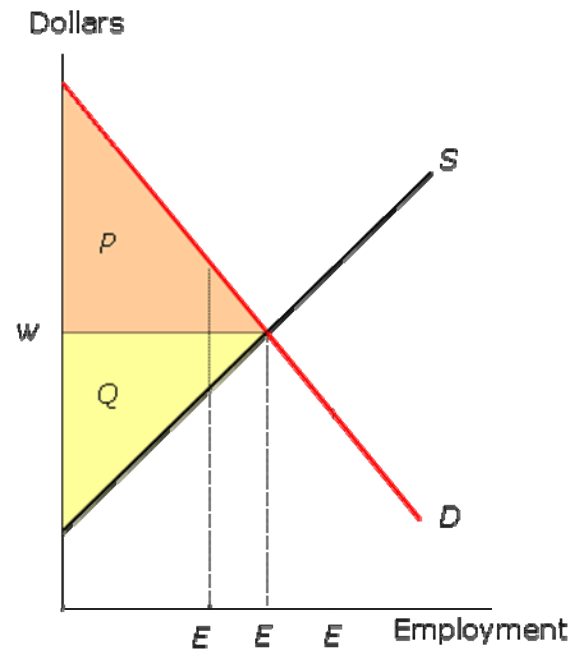


Labor Market Equilibrium

- Labor market equilibrium coordinates the desires of firms and workers, determining the wage and employment observed in the labor market.
- Competitive vs. Non-Competitive labor market equilibrium
- Competitive equilibrium occurs when supply equals demand, generating a competitive wage and employment level.
- The model suggests that the market is always moving toward equilibrium.

[Figure 1] Equilibrium in a Single Competitive Labor Market



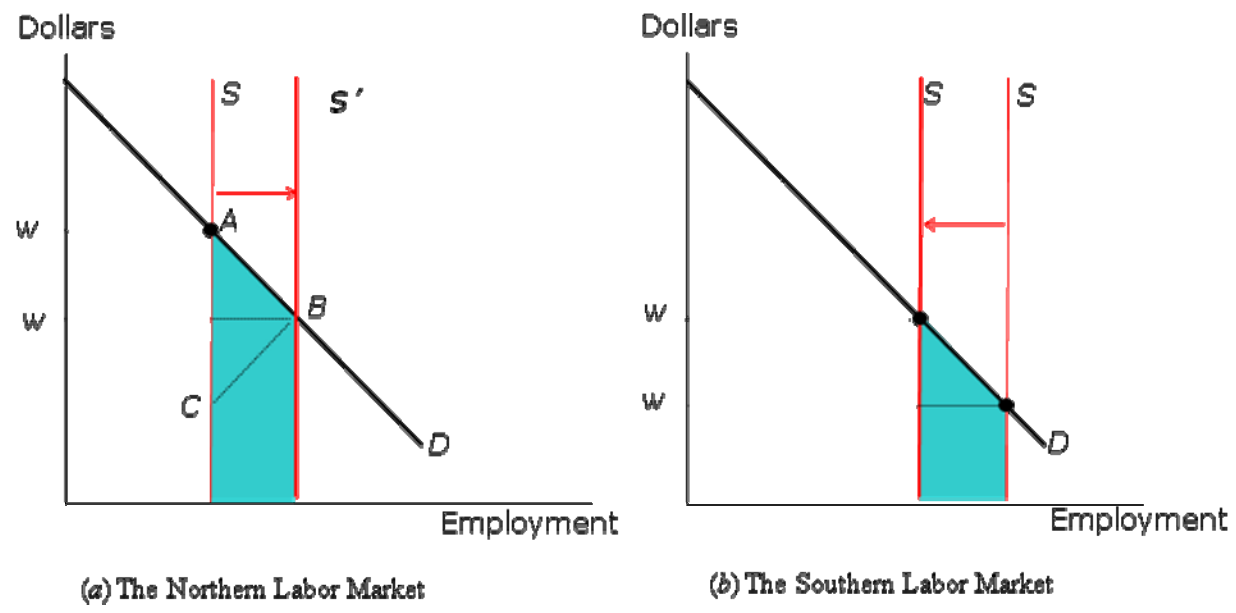
- In labor market equilibrium, labor supply equals to labor demand.
- Equilibrium wage is W^* and the amount of employment is E^*
- The triangle P measures the producer surplus and triangle Q represents the worker surplus.
- A competitive market maximizes the total gain from trade in the labor market.
- If workers were mobile and entry and exit of workers to the labor market was free, then there would be a single wage paid to all workers.

- The allocation of workers to firms equating the wage to the value of marginal product is also the allocation that maximizes national income (known as efficient allocation).
- The “single wage” property of a competitive equilibrium has important implications for economic efficiency.
- The allocation of workers to firms that equates the value of marginal product across markets is also the sorting that leads to an efficient allocation of labor resources.

Competitive Equilibrium across Labor Markets

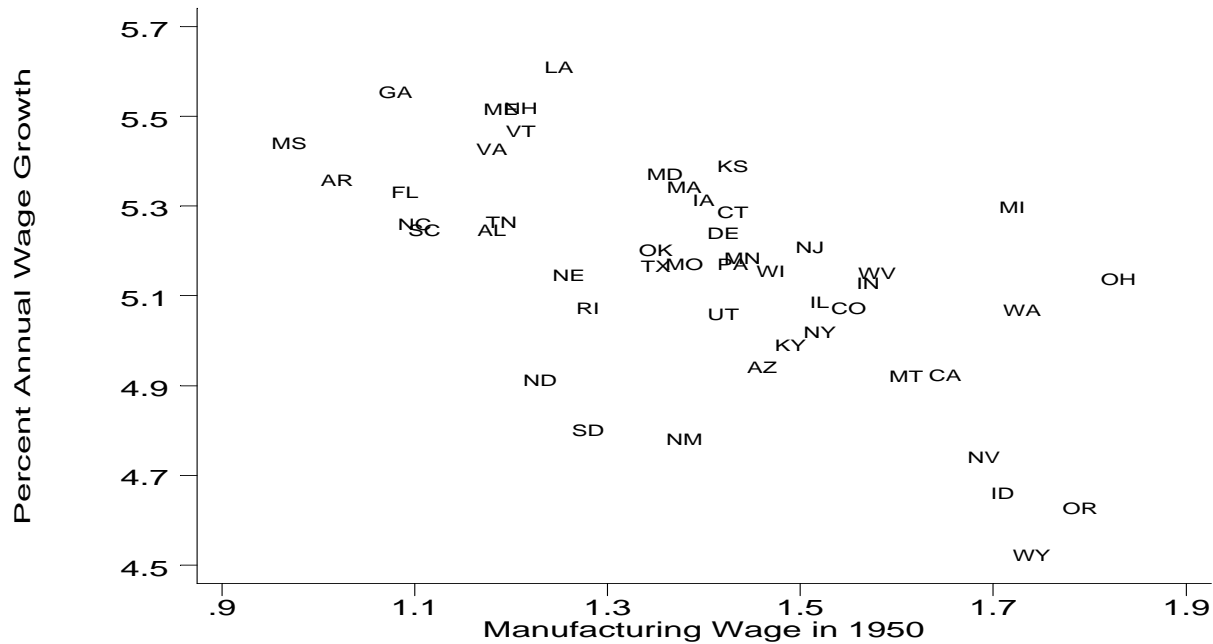
- The economy consists of many labor markets, even for workers who have similar skills → differentiated by region, or by industry.
- Suppose there are two regional labor markets in the economy, the North and south.
- Assume that persons working in the North are perfect substitutes for persons working in the South → worker having similar skills.
- Question: Can wage differential between the two regions persist and represent a true competitive equilibrium? → Ans: No.

[Figure 2] Competitive Equilibrium in Two Labor Market Linked by Migration



- Suppose the wage in the northern region (w_N) exceeds the wage in the southern region (w_S).
- Southern workers want to move to the North, shifting the southern supply curve to the left and the northern supply curve to the right.
- In the end, wages are equated across regions at w^* .
- As long as either workers or firms are free to enter and exit labor markets, a competitive economy will be characterized by a single wage rate.

[Figure 3] Wage Convergence across States in the U.S.

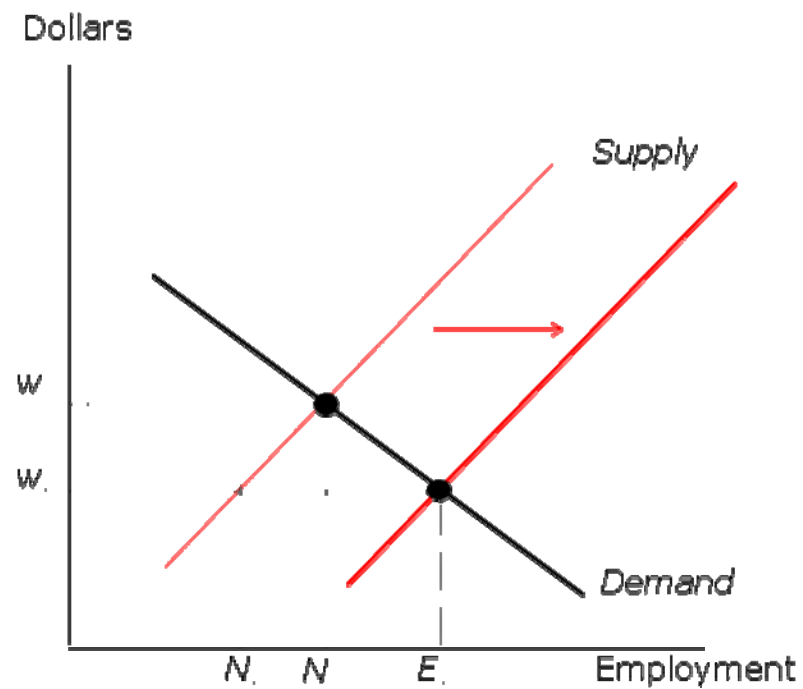


Source: Olivier Jean Blanchard and Lawrence F. Katz, "Regional Evolutions," *Brookings Papers on Economic Activity* 1 (1992): 1-61.

Policy Application: Immigration

- Consider how government policies that restrict or favor large-scale immigration shift the supply curve and later labor market outcomes.
- Because of major policy changes, the U.S. witnessed a major resurgence in immigration since 1965 → only 250,000 immigrants entered the country annually but by the late 1990s, over 1 million legal and illegal immigrants were entering the country annually.
- The key issue in immigration debate concerns the impact of immigration on the labor market opportunities of native workers → depending on the time span (short-run vs. long-run) and relationship between groups.

[Figure 4] The Impact of Immigration when Immigrants and Natives are Perfect Substitutes (Short-Run)



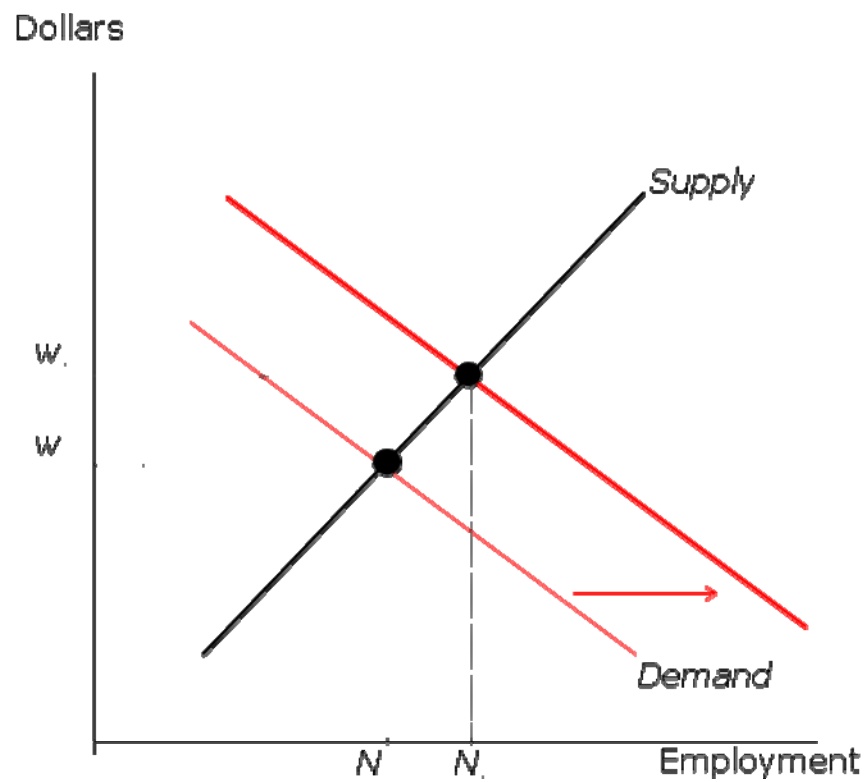
- In the case of immigrants and natives being perfect substitutes, the two groups are competing in the same labor market.
- As the immigrants enter into the domestic labor market, the total amount of labor supply (similar skill groups) increases → labor supply curve shifts out.
- As a result, the wage falls from W_0 to W_1 .
- While total employment (sum of natives and immigrants) increases from N_0 to E_1 but there is a decline in the number of natives who work from N_0 to N_1 at the lower wage rate.

[Figure 5] The Impact of Immigration when Immigrants and Natives are Perfect Substitutes (Long-Run)



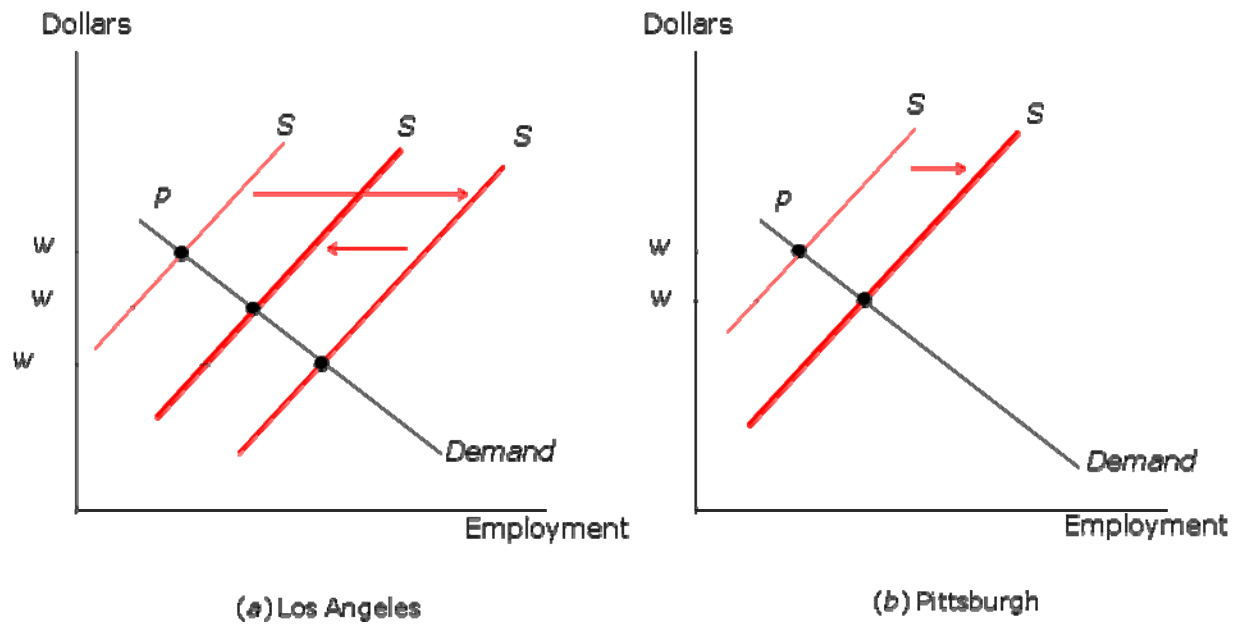
- Immigration initially shifts out the labor supply curve so the wage falls from w_0 to w_1 .
- Over time, capital expands as firms take advantage of the cheaper workforce → as capitals are more used for given amount of labor force, the marginal product of labor increases.
- Shifting out the labor demand curve and restoring the original wage and level of native employment.

[Figure 6] The Impact of Immigration when Immigrants and Natives are Perfect Complements



- If immigrants and natives are complements, they are not competing in the same labor market.
- An increase in the number of immigrants raises the marginal product of natives, shifting up the demand curve for native-born workers.
- The increase in native productivity raises the native wage from W_0 to W_1 .
- Moreover, some natives who previously did not find it profitable to work, now see the higher wage rate as an additional incentive to enter the labor market, and native employment also rises from N_0 to N_1 .

[Figure 7] The Native Labor Market's Response to Immigration



- Suppose that immigrants and natives are perfect substitutes and consider long-term behaviors of natives who can freely choose local labor markets between two regions.
- Initially, the two local labor markets are in equilibrium W_0 .
- The entry of immigrants into Los Angeles shifts the supply curve from S_0 to S_1 and lowers the wage to W_{1a} .
- The lower wage induces some LA natives to move to Pittsburgh, shifting the supply curve back from S_1 to S_2 and shifting the supply curve in Pittsburgh to S_3 .
- The market equilibrium wage settle downs to W^*

Natural Experiment: Hurricanes and Labor Market

- Hurricanes generate exogenous economic shocks that affect labor market conditions.
- Can use data to estimate difference-in-differences models that examine the economic impact on affected Florida counties relative to unaffected counties.
- 19 hurricanes that hit Florida between 1988 and 2005.

[Table 1] Changes in Employment and Wages in Florida Counties Hit by
Hurricanes

	Percent change in employment	Percent change in earnings
1. Effect of category 1-3 hurricane on county directly hit	-1.5	+1.3
2. Effect of category 4-5 hurricane on county directly hit	-4.5	+4.4
3. Effect of category 1-3 hurricane on neighboring county	+0.2	-4.5
4. Effect of Category 4-5 hurricane in neighboring county	+0.8	-3.3
Source: Ariel R. Belasen and Solomon W. Polachek, "How Disasters Affect Local Labor Markets: The Effects of Hurricanes in Florida," <i>Journal of Human Resources</i> , 2009		

- How does the theory of labor market equilibrium gain support from this data?
- Labor supply decreases in counties directly hit, and more so in the more-affected counties. This increases wages and lowers employment.
- Labor supply increases in neighboring counties. This decreases wages and increases employment.