ECO 352 – Spring 2010
No. 18 – Apr. 8

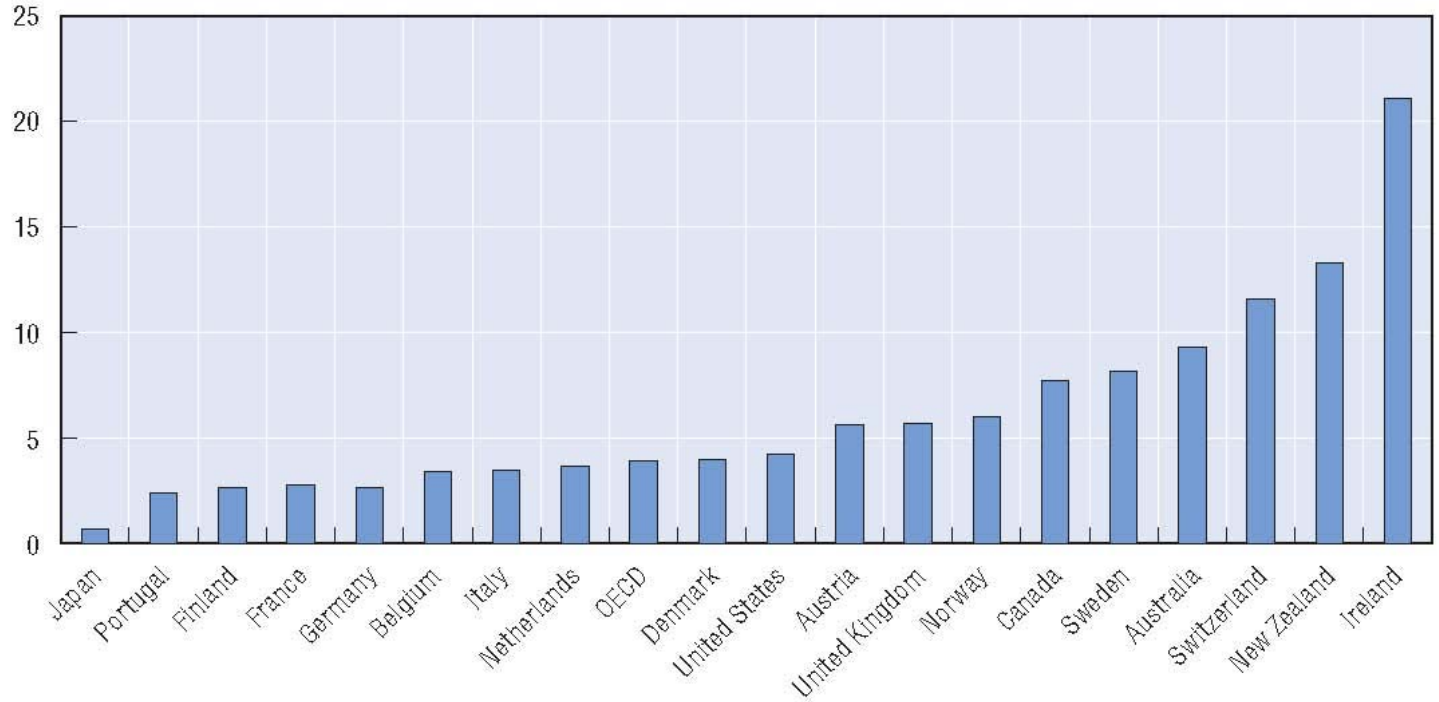
LABOR MIGRATION, TRADE, AND WAGES

SOME RECENT DATA ON MIGRATION

Flows:

Chart I.1. **Permanent-type inflows, standardised statistics, 2006**

Number per thousand persons in the population

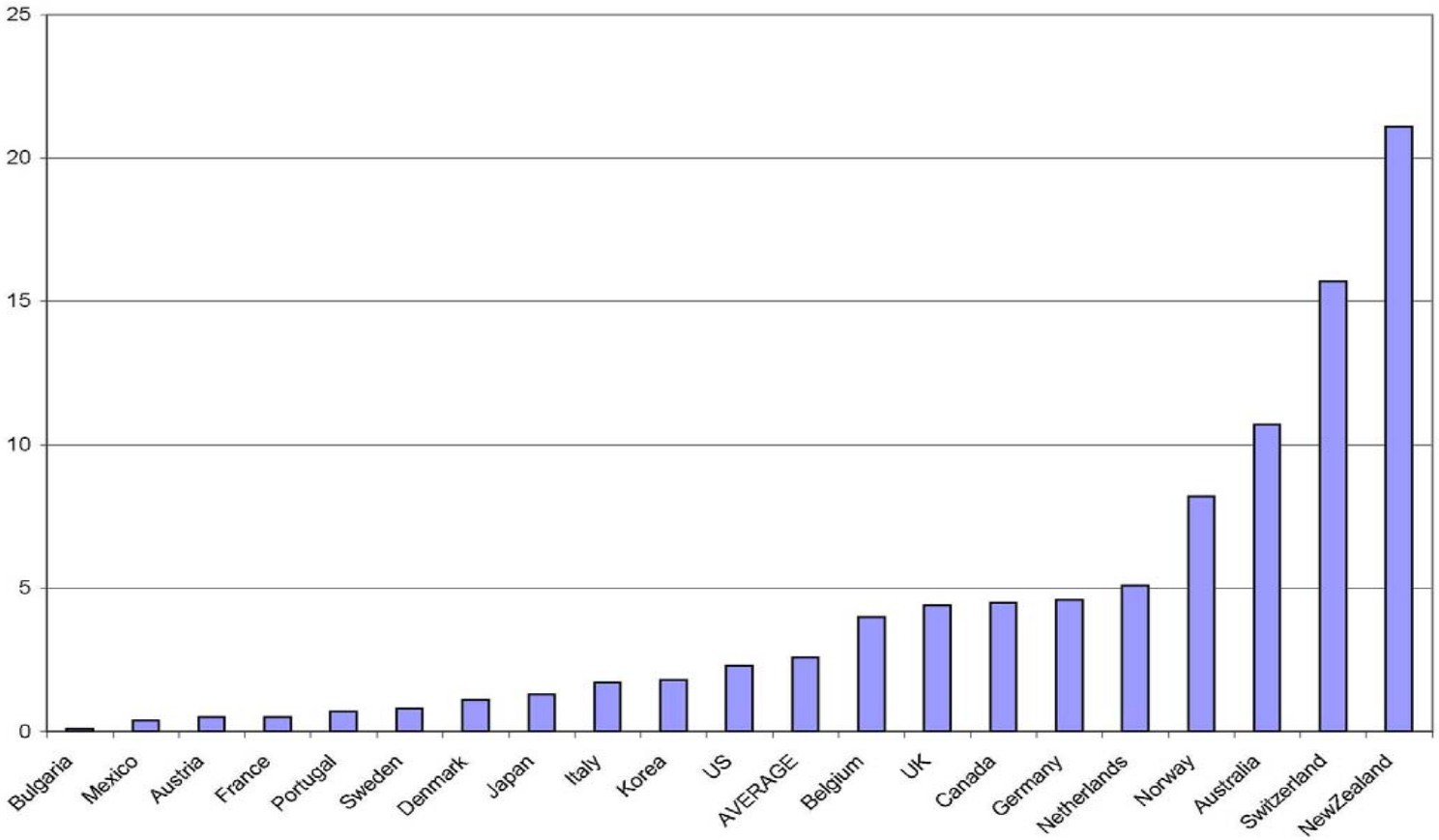


StatLink http://dx.doi.org/10.1787/427133481271

Note: For information on the compilation of the standardised statistics, see www.oecd.org/els/migration/imo2008.

Temporary-type inflows:

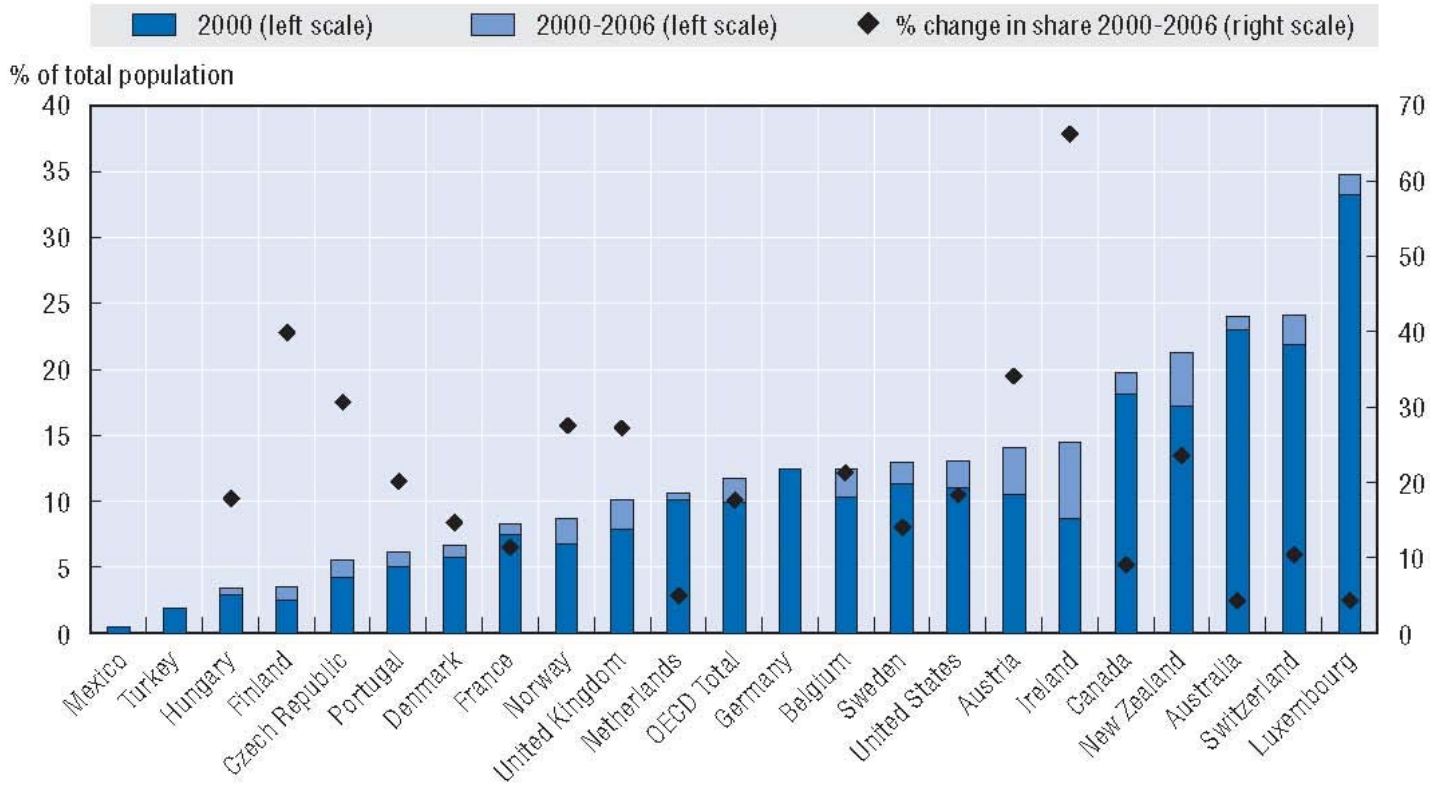
Data are incomplete; splits between permanent and temporary types are unclear and inconsistent across countries; no records within EU, etc. But OECD estimates:



Some countries rely on regular temporary workers.

Stocks:

Chart I.5. **The foreign-born population in OECD countries, 2000-2006**



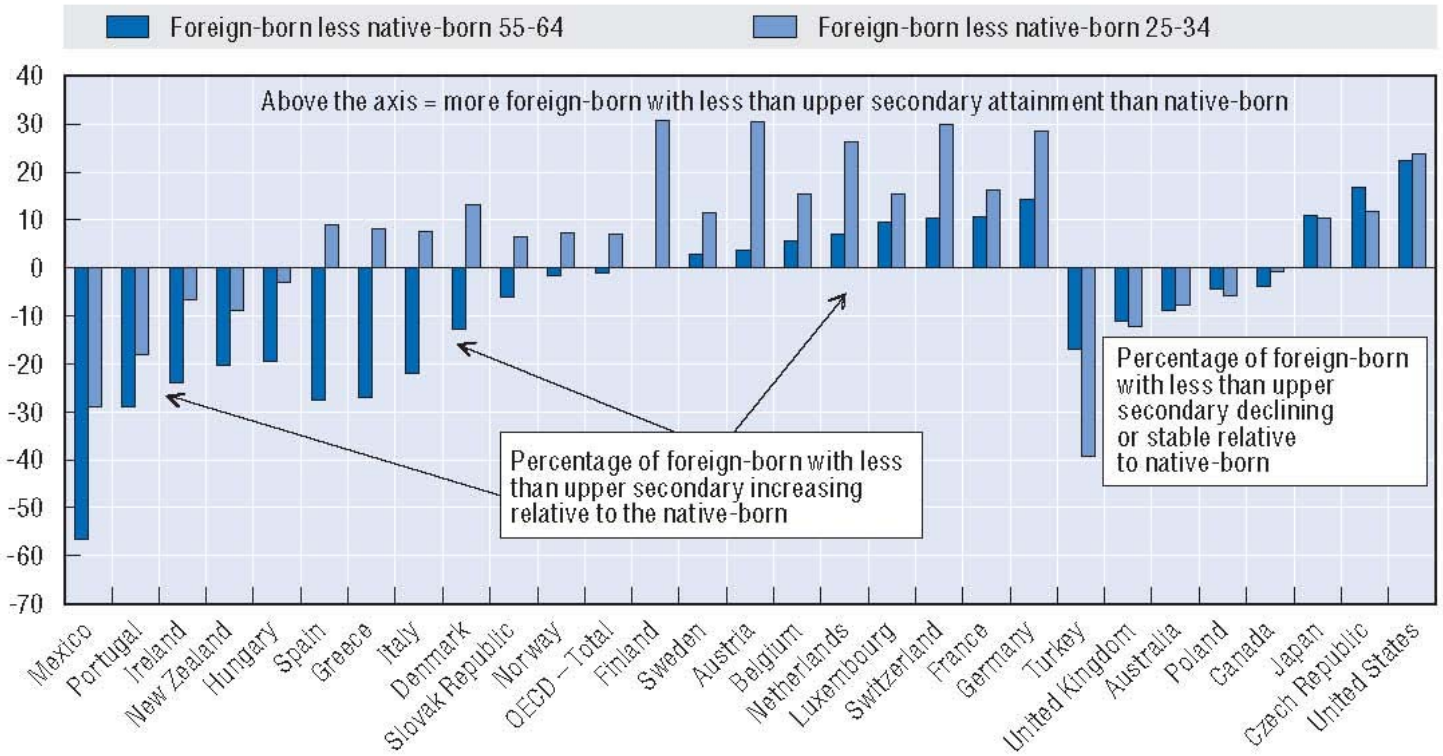
StatLink http://dx.doi.org/10.1787/427243430285

Note: For details on definitions and sources, refer to the metadata for Tables B.1.4 of the Statistical Annex.

Large differences across countries. US is quite high relative to the larger countries.

Unskilled:

Chart I.8a. **Difference between the percentage of foreign-born and of native-born persons with less than upper secondary education, 25-34 years old compared to 55-64 years old**

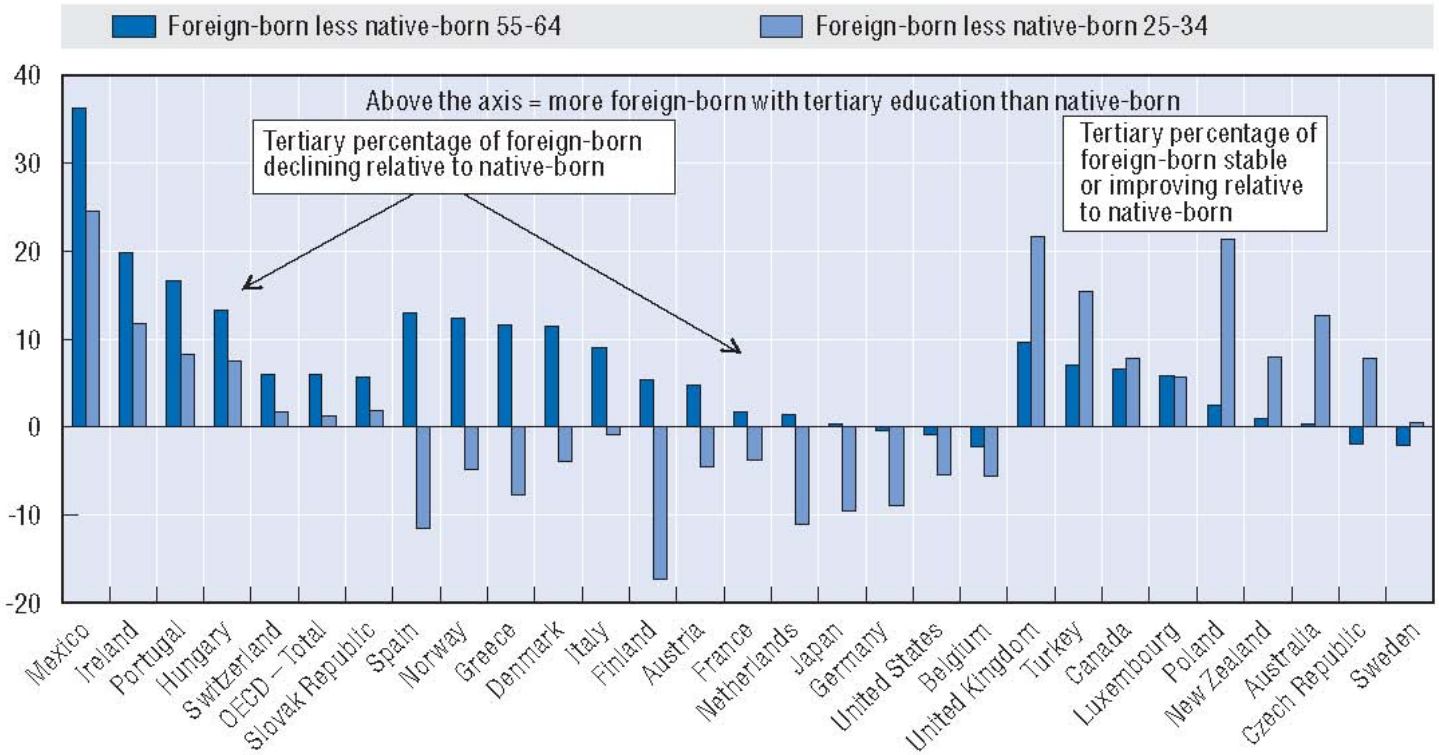


StatLink http://dx.doi.org/10.1787/427288174571

Note substantial low-skill immigration to many Western European countries and US

Skilled:

Chart I.8b. **Difference between the percentage of foreign-born and of native-born persons with tertiary education, 25-34 years old compared to 55-64 years old**



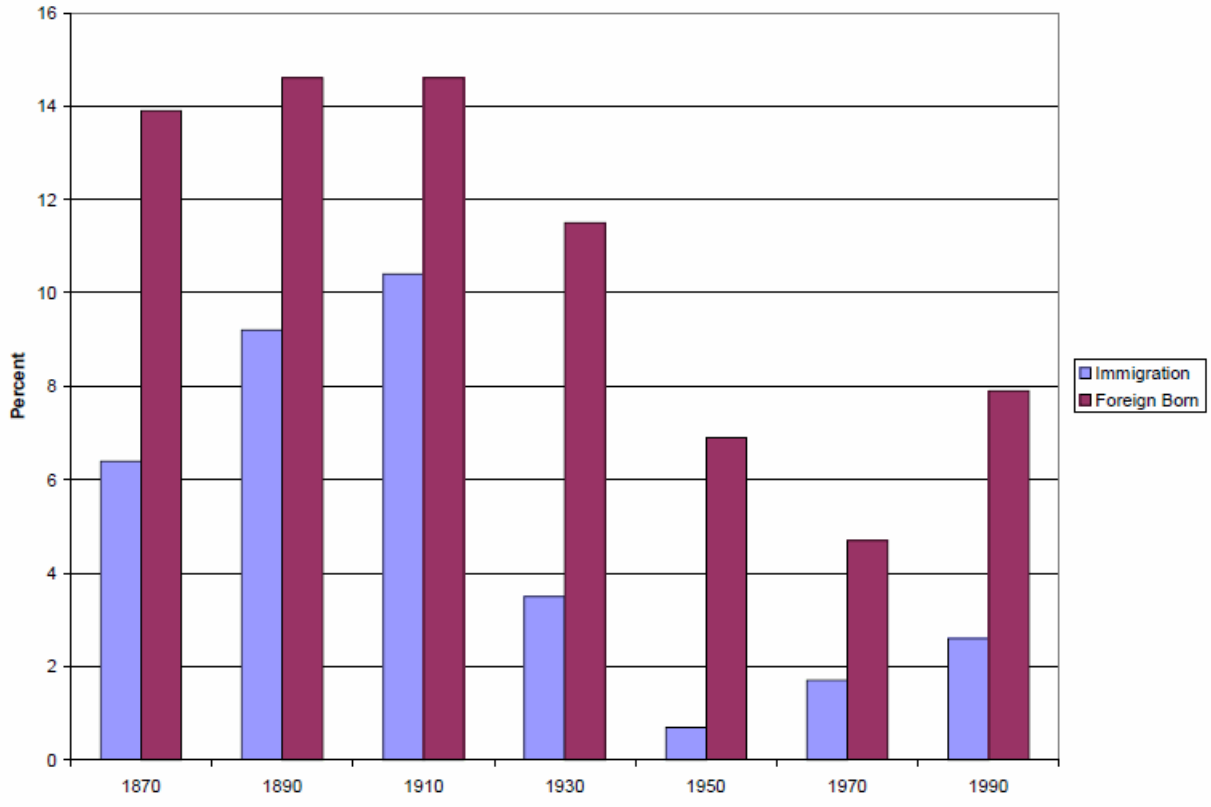
StatLink http://dx.doi.org/10.1787/427307454318

Source: Database on Immigrants in OECD countries (DIOC).

Some countries have explicit policy of immigration based on skill and need "points"

More detailed data for US: flows and stocks over time

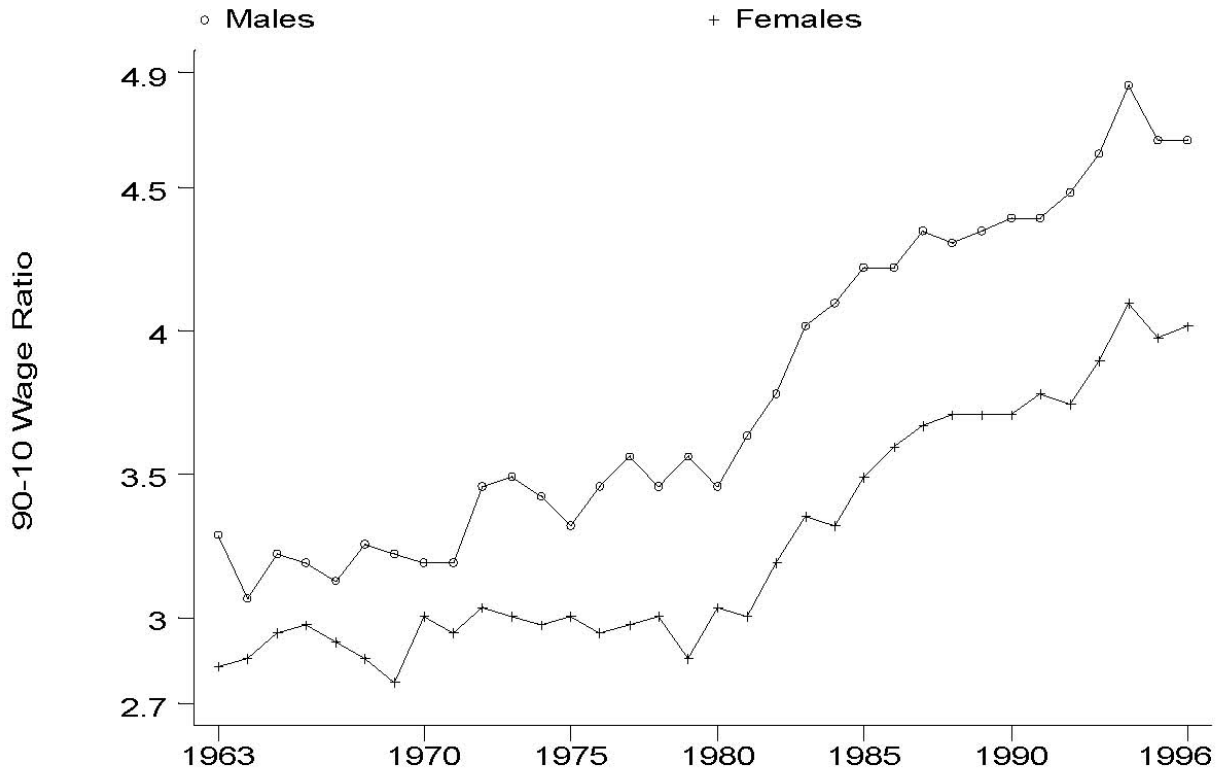
United States: Immigration Rate
and Percentage of Foreign Born Population
Selected Years 1870-1990



Immigration: Rate / 1000 population
Foreign Born: as Percentage of Population

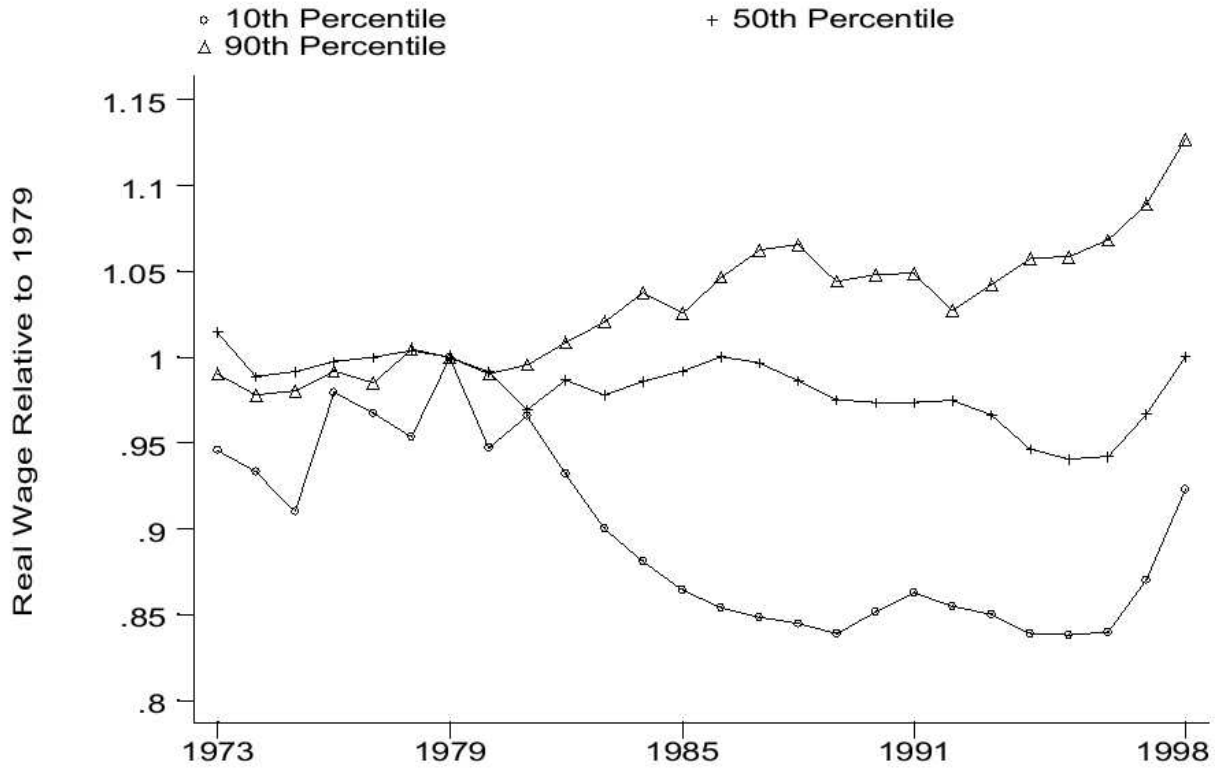
Wages and Inequality:

Figure 2: Overall U.S. Wage Inequality, 1963-96



Real wage stagnation:

Figure 3: Indexed Real Hourly Wage by Percentile, 1973-98 (1979=1)



Trends 1970-90:

[1] Immigration increased; significantly at unskilled end of distribution

[2] Wage inequality increased

[3] Real wage at low end declined

Question arises of connection, cause and effect

Trade explanation:

Immigration shifts US unskilled labor supply to the right;
wage decreases by movement along downward-sloping labor demand curve.
Magnitude of effect depends on slope of labor demand curve
Wage decrease small if labor demand curve highly elastic (flat)

Immigration irrelevant if trade in goods yields full factor price equalization

Non-trade explanations:

[1] Skill-biased technical progress shifts unskilled labor demand curve to left

[2] Technical progress stagnated in the 1970s

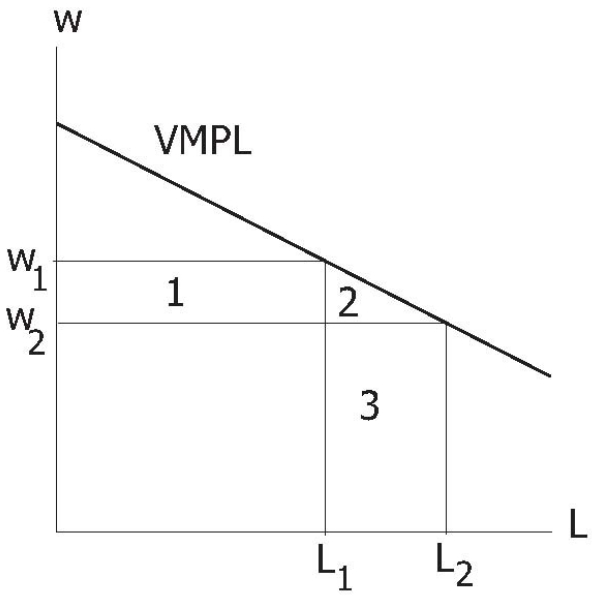
[3] Taxation became less progressive from 1980s on

THEORETICAL FRAMEWORK

Value of Marginal Product of Labor gives the labor demand curve

Immigration increases labor supply from L_1 to L_2

lowers wage from w_1 to w_2



Gain ("surplus") = areas 1 + 2
accrues to other factors of production
Loss of wages to domestic labor = area 1
Net gain to domestic economy = area 2

Value of output contributed by immigrants
= areas 2 + 3
Wages paid to immigrants = area 3
Net gain to domestic economy = area 2

Quantitative calculations:

Immigration $\Delta L = L_2 - L_1$, lowers wage $\Delta w = w_2 - w_1 < 0$

Write $L_m = (L_2+L_1)/2$, $w_m = (w_2+w_1)/2$

$\Delta L / L_m = -e \; \Delta w / w_m$, where e = (arc) elasticity of demand for labor

Net gain to economy (area 2)
expressed relative to the "midpoint" wage bill = $\frac{1}{2}\frac{\Delta w \, \Delta L}{w_m L_m} = \frac{1}{2e}\left(\frac{\Delta L}{L_m}\right)^2$

Wage loss to domestic labor
expressed relative to "midpoint" wage = $\frac{\Delta w}{w_m} = -\frac{1}{e}\left(\frac{\Delta L}{L_m}\right)$

For given $\Delta L/L_m$, both are large when e is small, both are small when e is large.

This is bad news for both sides in the debate, who like to believe:
Anti-immigration – small net gain to economy, large wage loss
Pro-immigration – large net gain to economy, small wage loss

Selective bad news for pro-immigration side:

Unless $\Delta L/L_m$ is large, net gain to economy will be "second-order small".
If trade in goods equalizes factor prices, VMPL is flat and $e = \infty$

Cross-effects when there are different types of labor, a and b:

If GDP = $G(L_a, L_b, \ldots)$, then $w_\alpha = \partial G/\partial L_a$ etc.

If L_b increases by ΔL_b because of immigration, then $\Delta w_a = \frac{\partial}{\partial L_b}\left(\frac{\partial G}{\partial L_a}\right)\Delta L_b = \frac{\partial^2 G}{\partial L_a \partial L_b}\Delta L_b$

The pairwise elasticity of substitution between a and b is $\sigma_{ab} = -\frac{\partial G}{\partial L_a}\frac{\partial G}{\partial L_b}\Big/\left(G\frac{\partial^2 G}{\partial L_a \partial L_b}\right)$

Using this and rearranging terms

$$\frac{\Delta w_a}{w_a} = -\frac{S_b}{\sigma_{ab}}\frac{\Delta L_b}{L_b}$$

where $S_b = w_b L_b / G$ is the share of type-b income in GDP

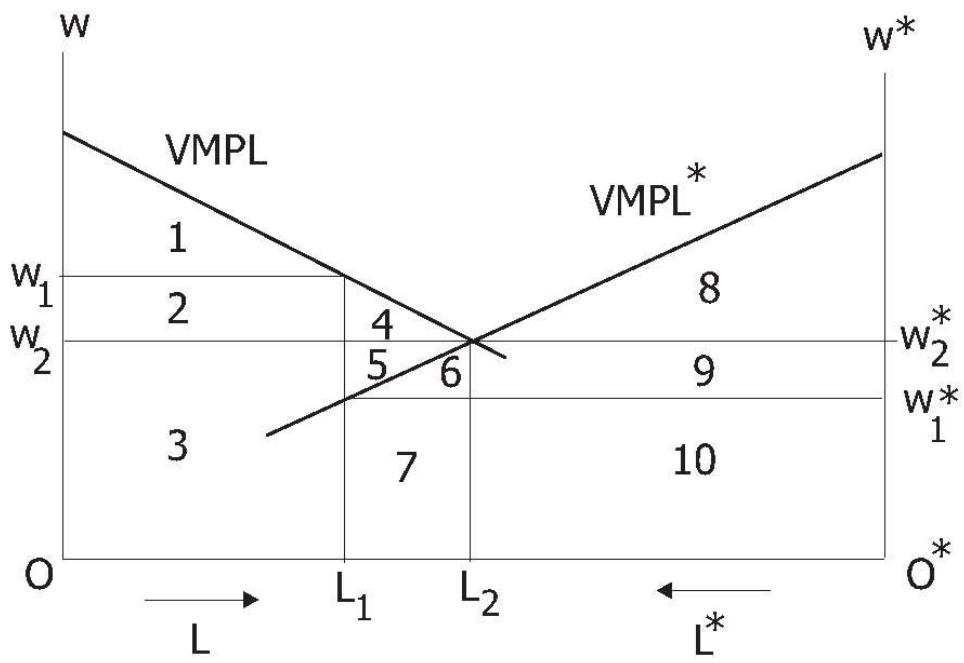
Examples:

[1] Card (AER May 2009): between high-school graduates and dropouts, $\sigma_{ab} \approx \infty$, so lowest-ed. immigrants have little effect on wages of US high-school grads.

[2] Some pairs, e.g. unskilled and skilled labor, or (reinterpreting the factors) labor and capital, can be complements, $\sigma_{ab} < 0$.
Then immigrants of that type will raise the earnings of the paired factor.

WELFARE IN ORIGIN AND DESTINATION COUNTRIES CONSIDERED JOINTLY

Migration from Foreign to Home.
Count migrants' welfare in country of origin (Foreign).
Measure of each country's welfare is GNP, not GDP



Home:
- GDP increase 4+5+6+7
- Immigrants' wages 5+6+7
- GNP increase 4
- Citizens' wages decrease 2
- Other factors' surplus rises 2+4

Foreign:
- GDP decrease 6+7. Emigrants' wages 5+6+7. GNP increase 5
- Citizens' (those who stay, and emigrant) wages increase 5+6+9
- Other factors' surplus decrease 6+9

Political economy: think who will support and who will oppose the immigration