# Economics 8150:
# The Roy Model and Immigration

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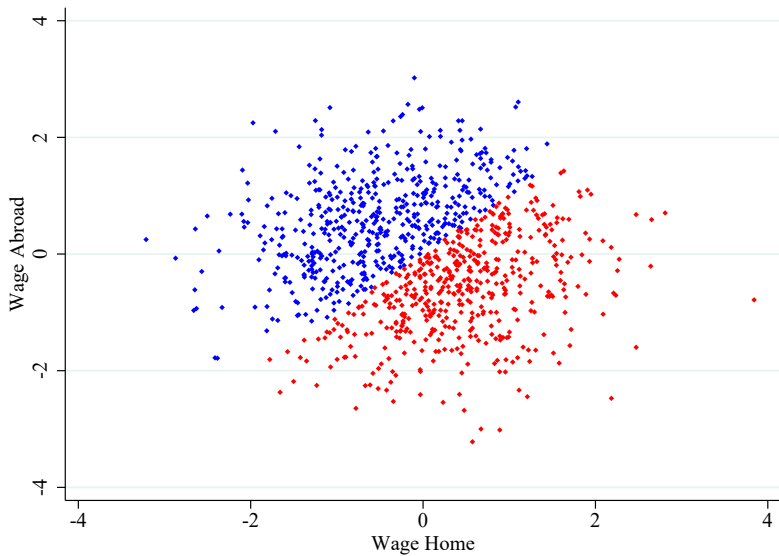
# The Roy Model and Immigration

- ► A core topic in labor economics is **self-selection**
- ► Canonical selection model is due to Roy (1951)
  - ► Rational actors make optimizing decisions
  - ► Observed outcomes are endogenous
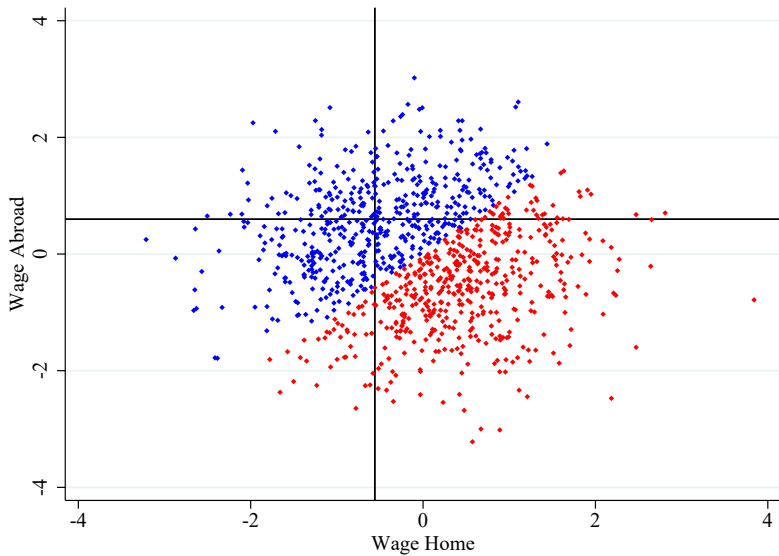- ► Today we'll review the Roy model and its application to studying who chooses to immigrate
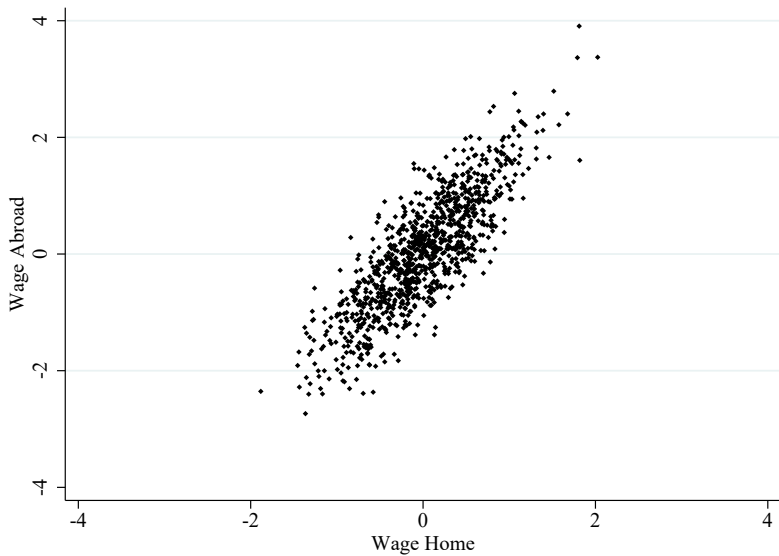
# Immigration Outcomes, Simulated
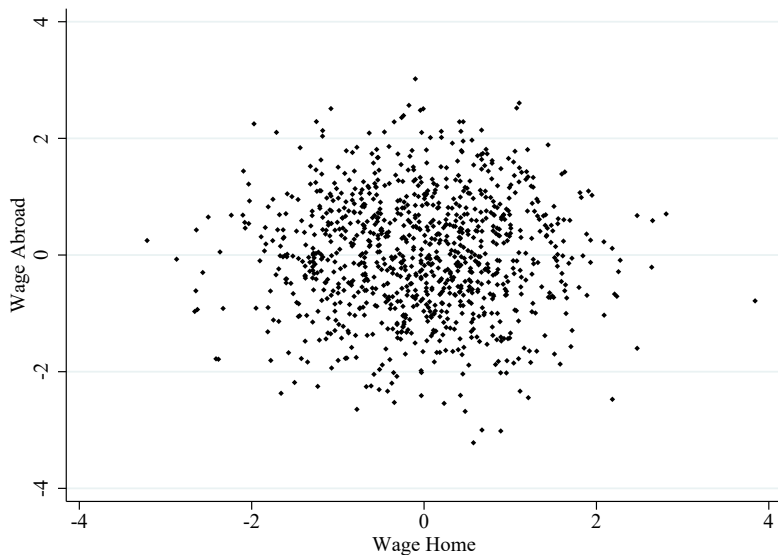
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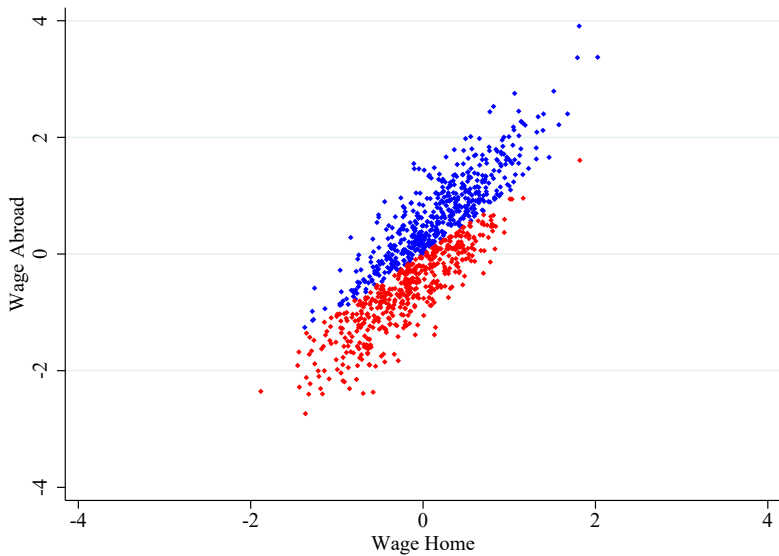
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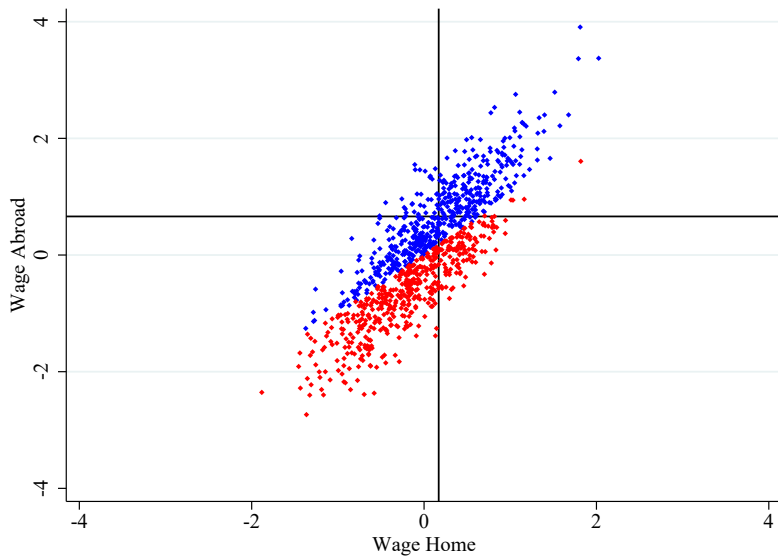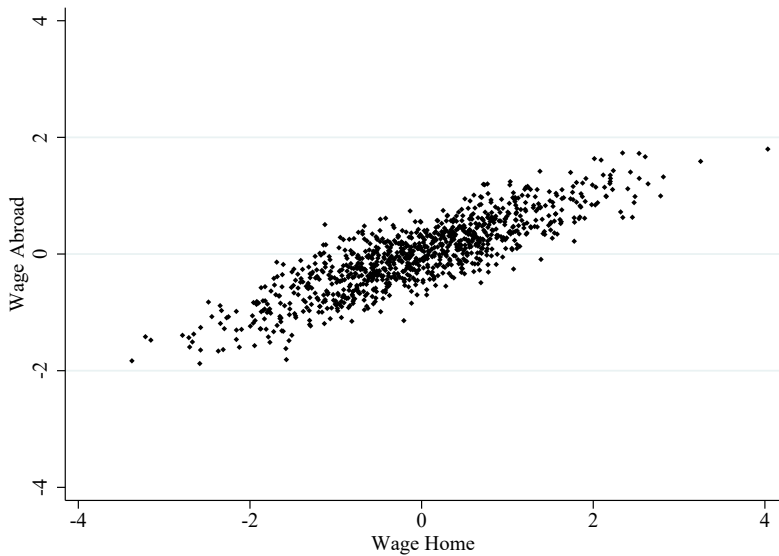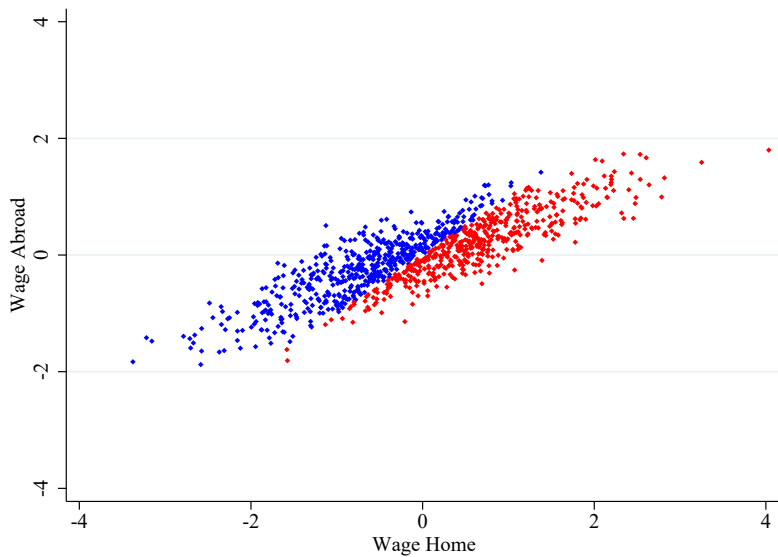# Immigration Outcomes, Simulated

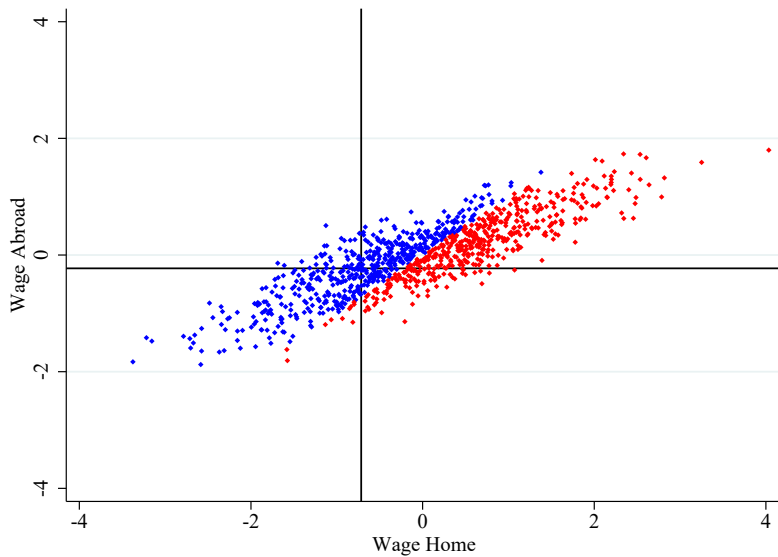# Immigration Outcomes, Simulated

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# Abramitzky et al., 2012

| | Dependent variable = ln(earnings); Coefficient on = 1 if migrant | | |
| --- | --- | --- | --- |
| | Full sample, 1865 | Rural, 1865 | Urban, 1865 |
| *Panel A. Unweighted* | | | |
| OLS | 0.545 | 0.607 | 0.384 |
| | (0.027) | (0.034) | (0.044) |
| Within household | 0.511 | 0.508 | 0.508 |
| | (0.035) | (0.045) | (0.057) |
| Chi-squared | 1.49 | 7.47 | 8.31 |
| *p*-value | 0.2218 | 0.0063 | 0.0039 |
| *N* | 2,655 | 1,823 | 832 |
| Number of migrant-stayer pairs | 326 | 167 | 159 |
| *Panel B. Weighted* | | | |
| OLS | 0.586 | 0.609 | 0.443 |
| | (0.029) | (0.033) | (0.067) |
| Within household | 0.542 | 0.529 | 0.561 |
| | (0.039) | (0.042) | (0.049) |
| Chi-squared | 2.13 | 4.60 | 5.65 |
| *p*-value | 0.1441 | 0.0320 | 0.0175 |
| *N* | 2,241 | 1,666 | 306 |
| Number of migrant-stayer pairs | 269 | 140 | 129 |

# Abramitzky et al., 2012

TABLE 4—ECONOMIC OUTCOMES OF HOUSEHOLD HEADS WITH MIGRANT AND NONMIGRANT SONS, 1865

| Dependent variables | All households | | Households with matched sons | |
|---|---|---|---|---|
| | Mean | Coefficient on migrant HH | Mean | Coefficient on migrant HH |
| Panel A. Urban | | | | |
| Occ. > median | 0.593 | −0.001 (0.022) | 0.583 | −0.030 (0.042) |
| Occupational income | 428.27 | −27.501 (10.216) | 440.47 | −26.555 (20.798) |
| Assets | 0.260 | −0.030 (0.018) | 0.252 | −0.058 (0.035) |
| N | | 4,038 | | 1,074 |
| Panel B. Rural | | | | |
| Occ. > median | 0.608 | 0.008 (0.014) | 0.577 | −0.054 (0.032) |
| Occupational income | 321.21 | 6.092 (3.847) | 315.30 | −9.077 (9.072) |
| Assets | 0.665 | −0.032 (0.012) | 0.613 | −0.035 (0.028) |
| Match tax records | 0.130 | −0.037 (0.009) | 0.134 | −0.040 (0.021) |
| Property tax bill | 2.759 | −0.372 (0.307) | 2.821 | 0.044 (0.887) |
| N = 1,410; 300 | | | | |
| N | | 12,177 | | 2,499 |

# Abramitzky et al., 2012
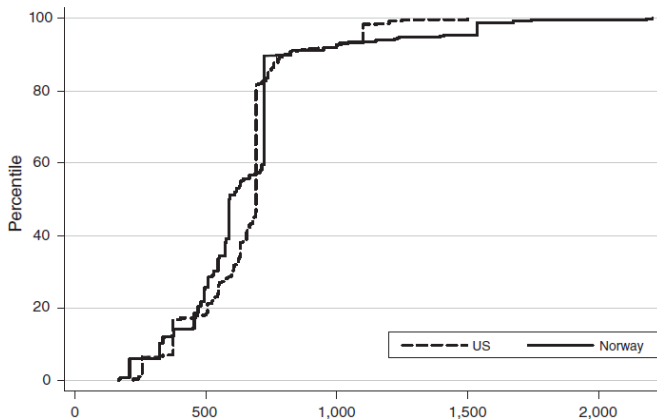


FIGURE 1. CUMULATIVE INCOME DISTRIBUTION FUNCTIONS IN THE UNITED STATES AND NORWAY IN 1900