Poverty and the Binational Population: A Note on Poverty Measurement

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Previous Work

- "Poverty, Legal Status, and Pay Basis in U.S. Agriculture"
  - *Industrial Relations* (July 2010)
- Relationship between wage contract structures and poverty outcomes?
  - Piecerate workers earn higher average hourly wages than timerate workers; however, fewer hours per week and more poverty risk
  - Variability in piecerate contracts, secondary employment, nonwage income, family structure, agricultural season length, time abroad, weather

Poverty Definition and Transnational and Border Populations

- Thresholds and lines calculated under assumption that family faces common price level set throughout year
- Definitions of "thresholds" may differ substantially
  - United States: U.S.D.A. food budgets (1963-4), updated by CPI-U
  - Mexico: food-based and asset-based definitions
  - World Bank: Reference lines set at $1.25 and $2 per day (Purchasing Power Parity terms)
- Inequality and vulnerability as related concepts to poverty
- Income that put worker below U.S. thresholds may not put him/her below source country thresholds (or below "adjusted" U.S. thresholds)

U.S. Poverty Thresholds 2009

- 1 person: $11,161
- 2 persons: 14,366
- 3 persons: 16,781
- 4 persons: 22,128
- 5 persons: 26,686
- 6 persons: 30,693
- 7 persons: 35,316
- 8 persons: 39,498
- 9+ persons: 47,514

Source: U.S. Census Bureau

Academic Literature on Immigration and Poverty

- Poverty among settled immigrants within receiving country

- Effects of transfers on family or community left behind

- Relationship between stagnant U.S. poverty rates and immigrant inflows

  - Poverty rate 0.1% higher due to immigration (1979 to 1999 comparison) (Hoynes, Page, and Stevens, JEL, 2006); lower bound if wage effects with immigration

- Here, outcomes of migrants themselves and immediate family members after adjusting for time spent abroad, extent of cost of living differences

Methodology

- Calculate poverty rates under alternative weighting schemes
- Are alternative schemes statistically and economically different from current U.S. poverty thresholds?
- Case study example from Mexico-U.S. migrant streams

"Reweighting" Poverty (starting point)

- Consider:

$$New\_threshold = \frac{U.S.\_weeks}{total\_weeks}\left(U.S.\_threshold\right) + \frac{abroad\_weeks}{total\_weeks}\left(abroad\_threshold\right)$$

- U.S. and abroad thresholds functions of family size and year

- Compare total annual family income to this value

- Valid only if U.S. and abroad thresholds follow like methodology

  - General: "rich" nations more generous standards of poverty

Purchasing Power

- Ideally:
  - Index based on pricing differences
    - Separate for each county/region of interest
    - Common commodity bundle used by migrants (may be different from that of an *average* consumer in any country)

- Realistically:
  - Purchasing Power Parity (PPP) indices and time spent in the U.S. vs. abroad
    - Approximate differences in currency values
    - Imperfections if cross-country consumption patterns differ (Deaton, 2010)

PPP Ratio, Mexico-U.S. Example

Source: World Bank, World Development Indicators, and author's calculations.

Poverty Adjustments (Take 2)

- Combine PPP information with time in U.S.:

$$Threshold = \frac{U.S.\_weeks}{total\_weeks}\left(U.S.\_threshold\right) + \frac{abroad\_weeks}{total\_weeks}\left(PPP\_ratio\right)\left(U.S.\_threshold\right)$$

where *PPP_ratio* is ratio of per capita PPP indices of country of interest to U.S.

Case Study: Mexico-U.S. Migration

- National Agricultural Workers Survey (NAWS)
  - FYs 1989-2006 (fall, winter/spring, summer)
  - Representative of employed farmworkers
    - Nationally
    - For 12 agricultural regions
    - For each year and season
  - Sampling from work sites, not houses
  - Total Sample Size: 46,566
    - 20% are U.S. born (25.0% weighted)
    - 73% from Mexico (68.7% weighted)
  - Weeks Abroad?
    - Mexican workers: 11.5/year (family poverty 45.8%)
    - Mexican undocumented workers: 16.1/year (52.5%)
    - Native workers: 0.3/year (family poverty 29.2%)

Family Structure in NAWS

For Mexican Farmworkers					U.S. Born
Family Size	Freq.	Percent	Weeks Abroad	Poverty	Poverty
1	6,629	23.94	15.78	33.75	32.63
2	3,846	13.89	12.02	39.84	21.01
3	5,140	18.56	11.53	47.46	27.80
4	4,755	17.17	10.41	54.70	32.01
5	3,621	13.08	9.09	62.14	33.74
6	1,989	7.18	10.74	68.26	60.61
7	977	3.53	9.92	78.61	60.72
8-15	730	2.65	9.01	74.22	66.85

Source: NAWS pooled cross-sections 1993-2006, and author's calculations.

Adjusted Poverty Rates: Mexican Agricultural Workers

$$Threshold = \frac{U.S.\_weeks}{total\_weeks}\left(U.S.\_threshold\right) + \frac{abroad\_weeks}{total\_weeks}\left(PPP\_ratio\right)\left(U.S.\_threshold\right)$$

Family Size	Weeks Abroad	Old Poverty	New Poverty	Difference
1	15.78	33.75	30.63	***
2	12.02	39.84	34.82	***
3	11.53	47.46	43.22	***
4	10.41	54.70	52.60	***
5	9.09	62.14	60.40	***
6	10.74	68.27	66.60	***
7	9.92	78.61	76.79	***
8-15	9.01	75.38	75.18	

*** statistically significant at 1% level

Fraction of Mexican Farmworkers under Current and Adjusted Poverty Thresholds
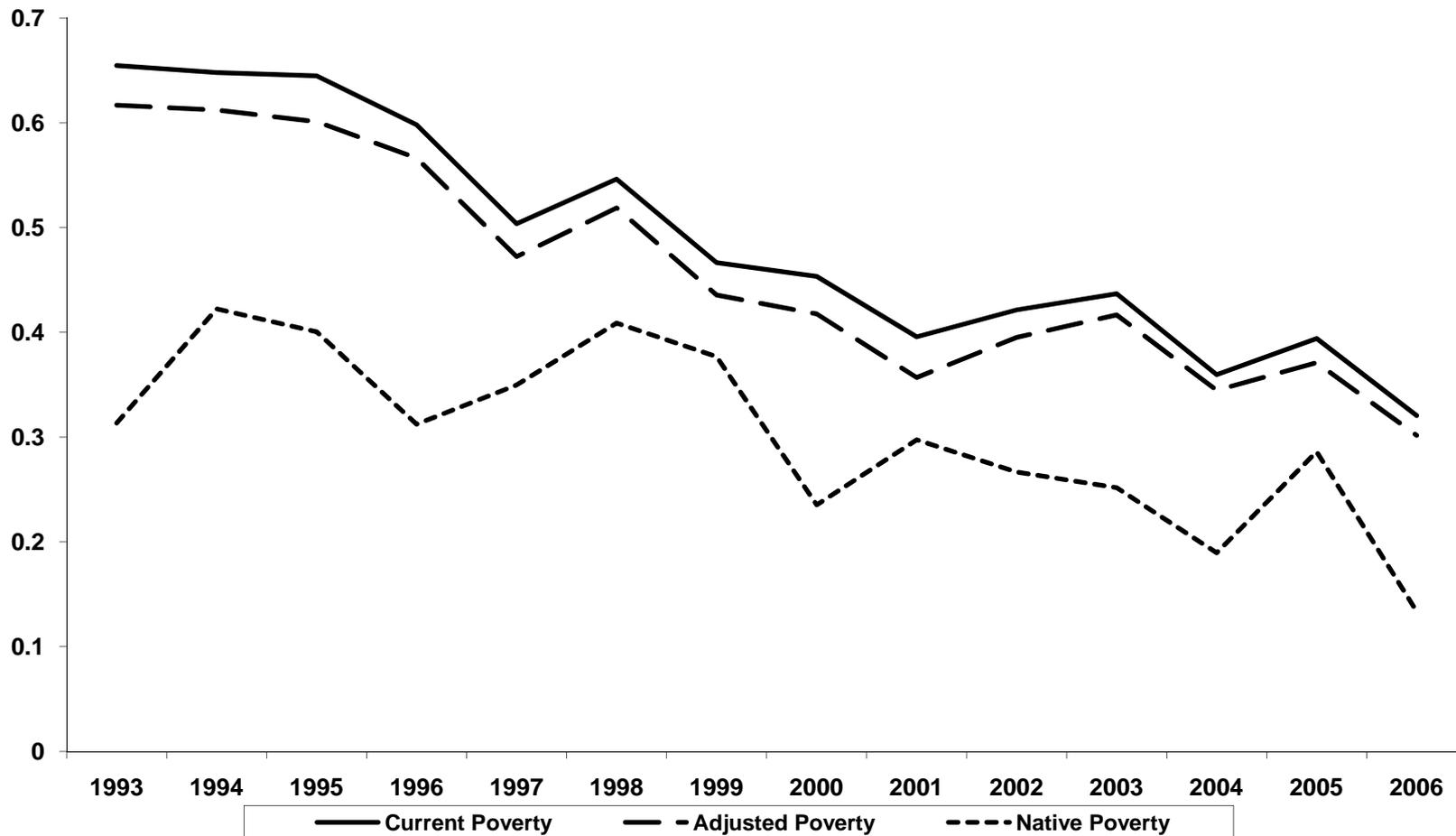
Current and Adjusted Poverty Thresholds— Family Size of 1
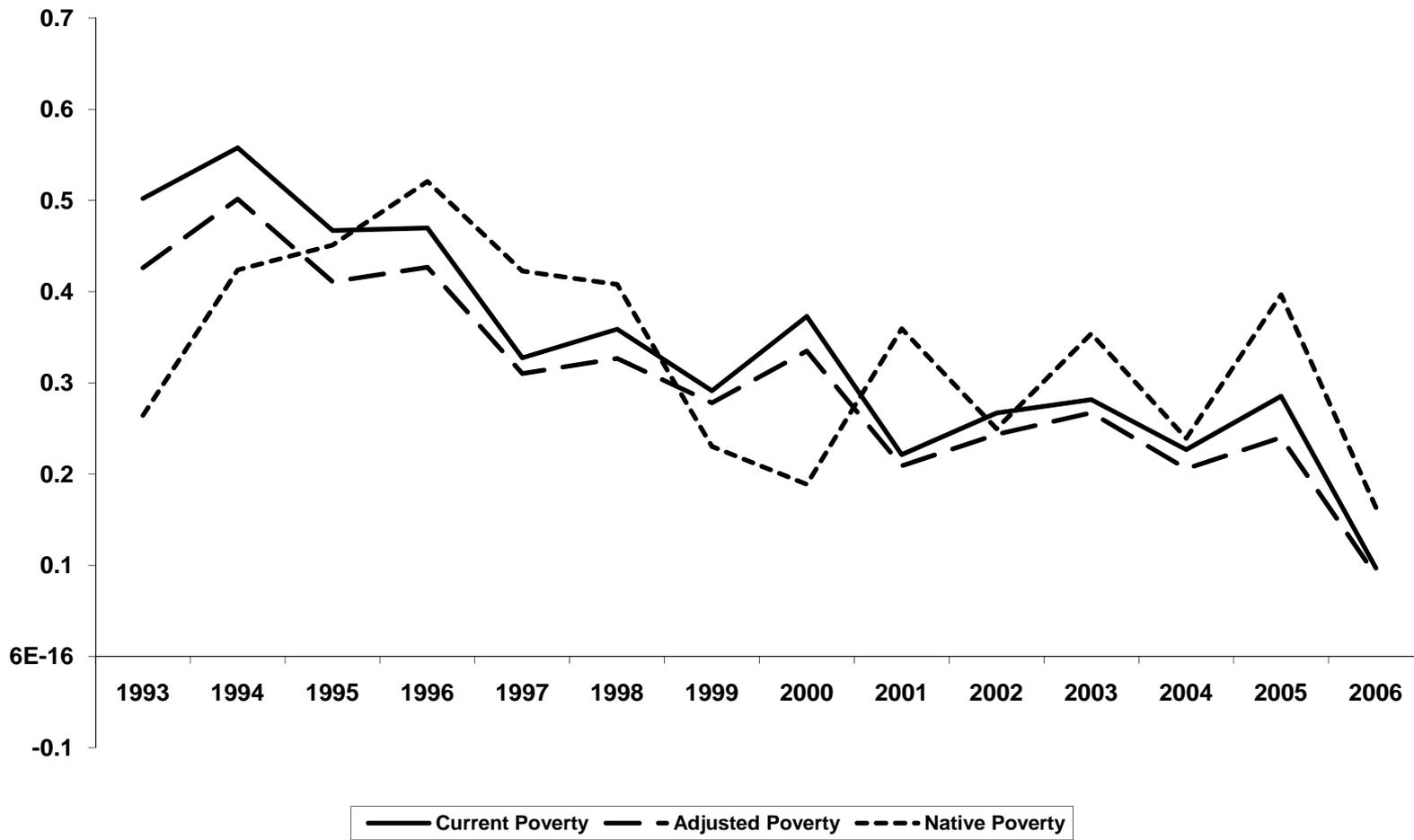
Economic Significance

- Differences imply 833 misclassifications in the case study example

- 1.01M hired farmworkers in 2006 (Kandel 2008)

- NAWS suggested 68.7% Mexican

- Implies approximately 18,326 poverty misclassifications among Mexican agricultural workers alone

- Formula should still *overcount* poverty if positive remittances

Policy Relevance/Discussion

- Implications for not only international migrants, but also border commuters and interregional migration

- Public aid program eligibility often function of poverty status

- Relationship to "Hispanic buying power"

- Measures are not prescriptive of specific public policies but complementary to other inputs into policy making in immigration, population movements, and poverty alleviation

- Complementary to literatures on indices and border regions (e.g., COL, HDI)

Continuing Work

- Nonagricultural data sources?

- Adjustments for remittances

- Further adjustments for families not migrating together
  - equivalence scales?

- Misclassification from source country perspective?
  - Invert PPP formula

New "Poverty"

- March 2010: Obama administration announced new (controversial) poverty-measurement
- Thresholds plus "escalators": rise proportionally to average American living standards
- Absolute vs. comparative purchasing power
- Similar ideas here: adjustments for binationality
  - Purchasing power differences across borders
  - "Poverty" traditionally defined relative to one country's prices
  - Relevance of comparative purchasing power
  - Adjustment here could be developed alongside other improvements