English Proficiency and Socioeconomic Outcomes

Relation to Age at Arrival and the "Critical Period" of Language Acquisition

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Motivation 1

- Some facts:
  1. About 1 in 5 children in US is child of an immigrant
  2. Children of immigrants will be rising share of the population for years to come
  3. Many in homes in which English is not spoken
  4. In the 1990s, US enrollment grew 24%; LEP enrollment grew 105%
- Childhood immigrants as a bridge
  - …between first and second generation
- Age at arrival to the US
  - …affects culture, education, health, etc.

Motivation 2

- Culture versus Constraints
  - Are US immigrants' outcomes the result of their cultural preferences, or of more fundamental constraints?
- Case in point: English-language proficiency
- Critical period of language acquisition

Critical Period in Language Acquisition

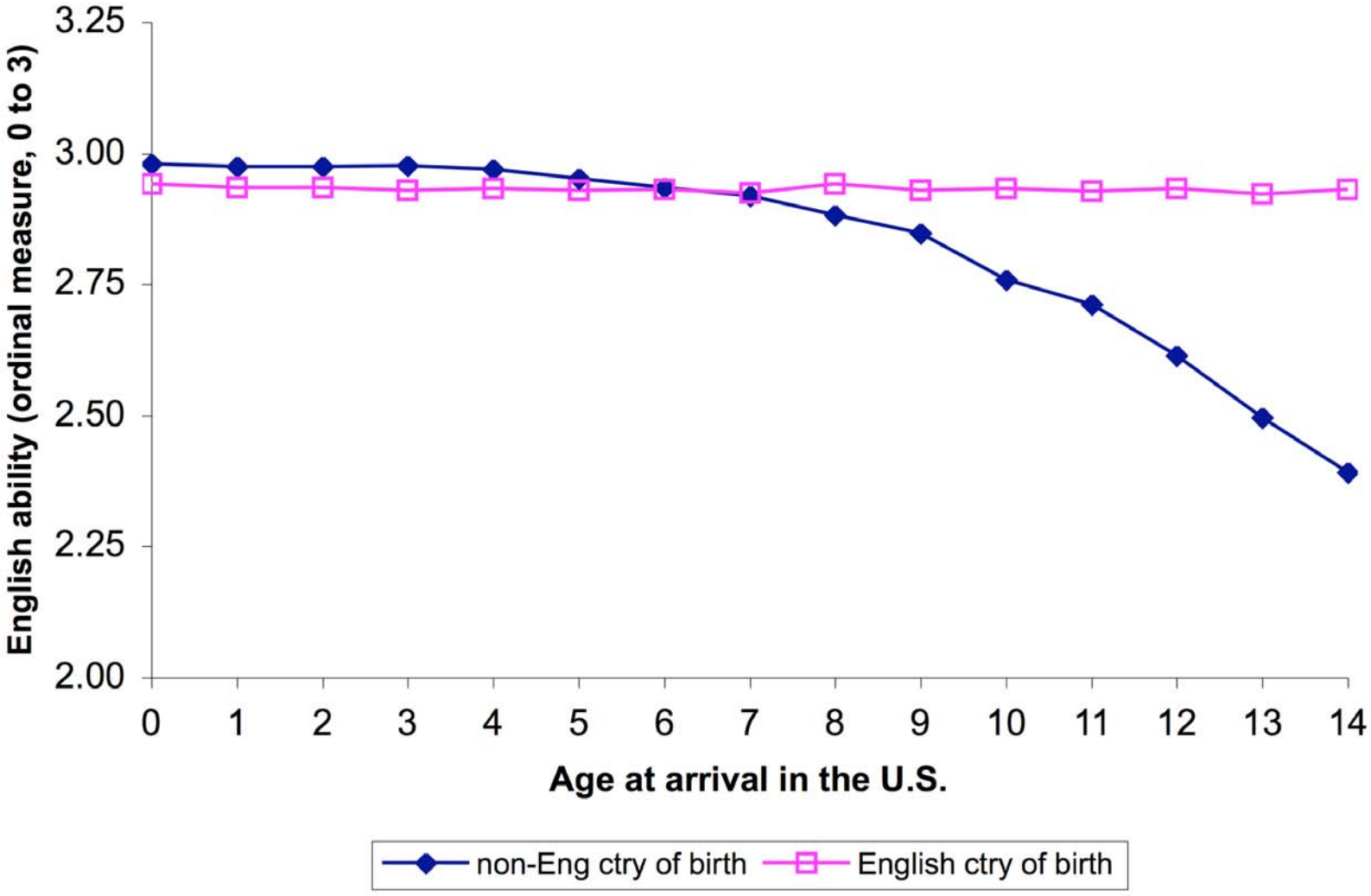
- Younger children learn new languages more easily than older children.

- Consider foreign-born children who follow their parents to the US. Those who arrive at a younger age (low age at arrival) will be able to learn English more easily.
  - Psychobiological foundations: Lenneberg (1967), Newport (2002)

- Can't attribute all age-at-arrival effects to language. Use immigrants from English-speaking countries as comparison.

- Our central variable in the analysis is the *interaction* between age at arrival and whether the country of origin is Anglophone or not.

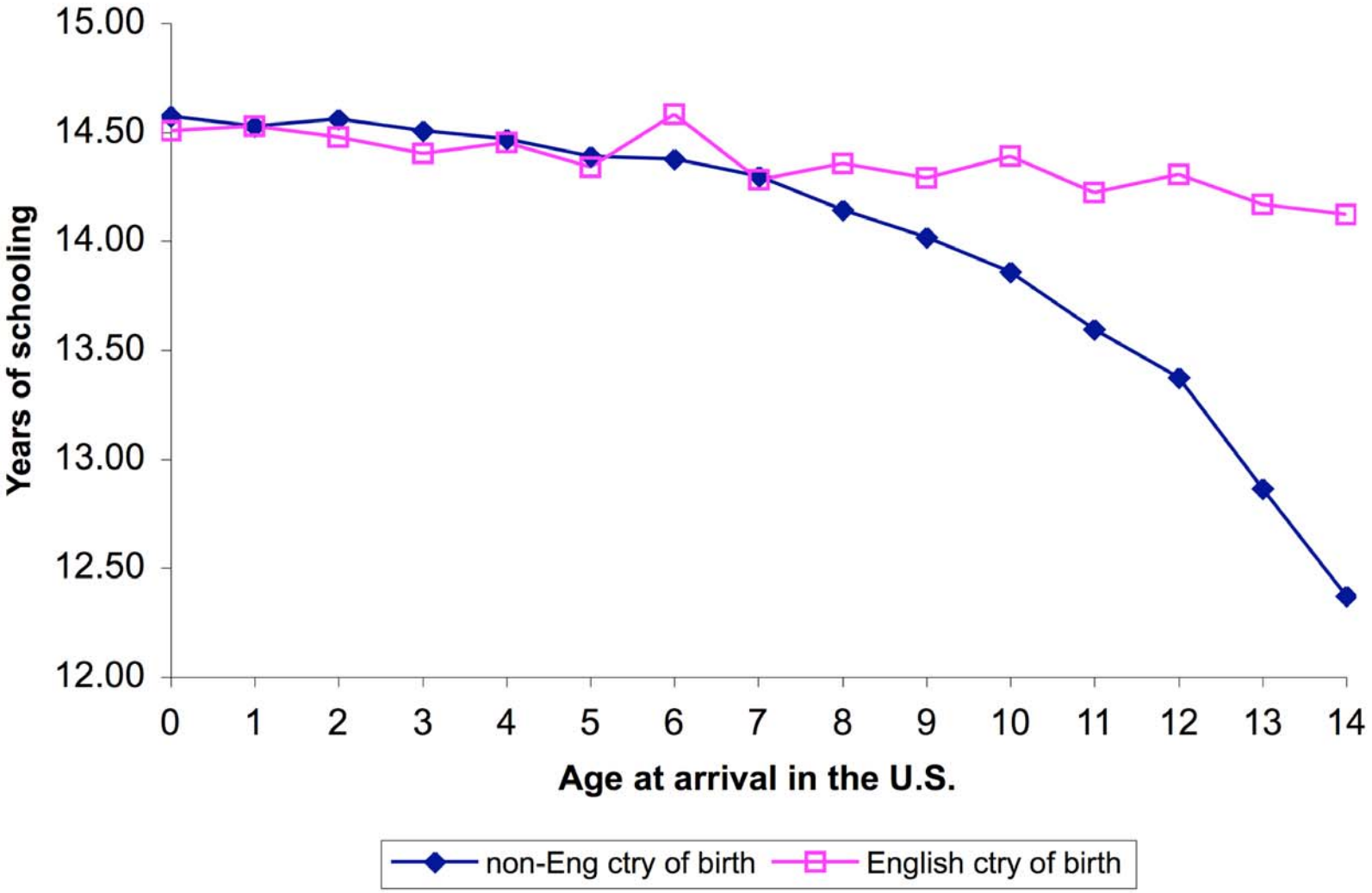
English-Speaking Ability by Age at Arrival

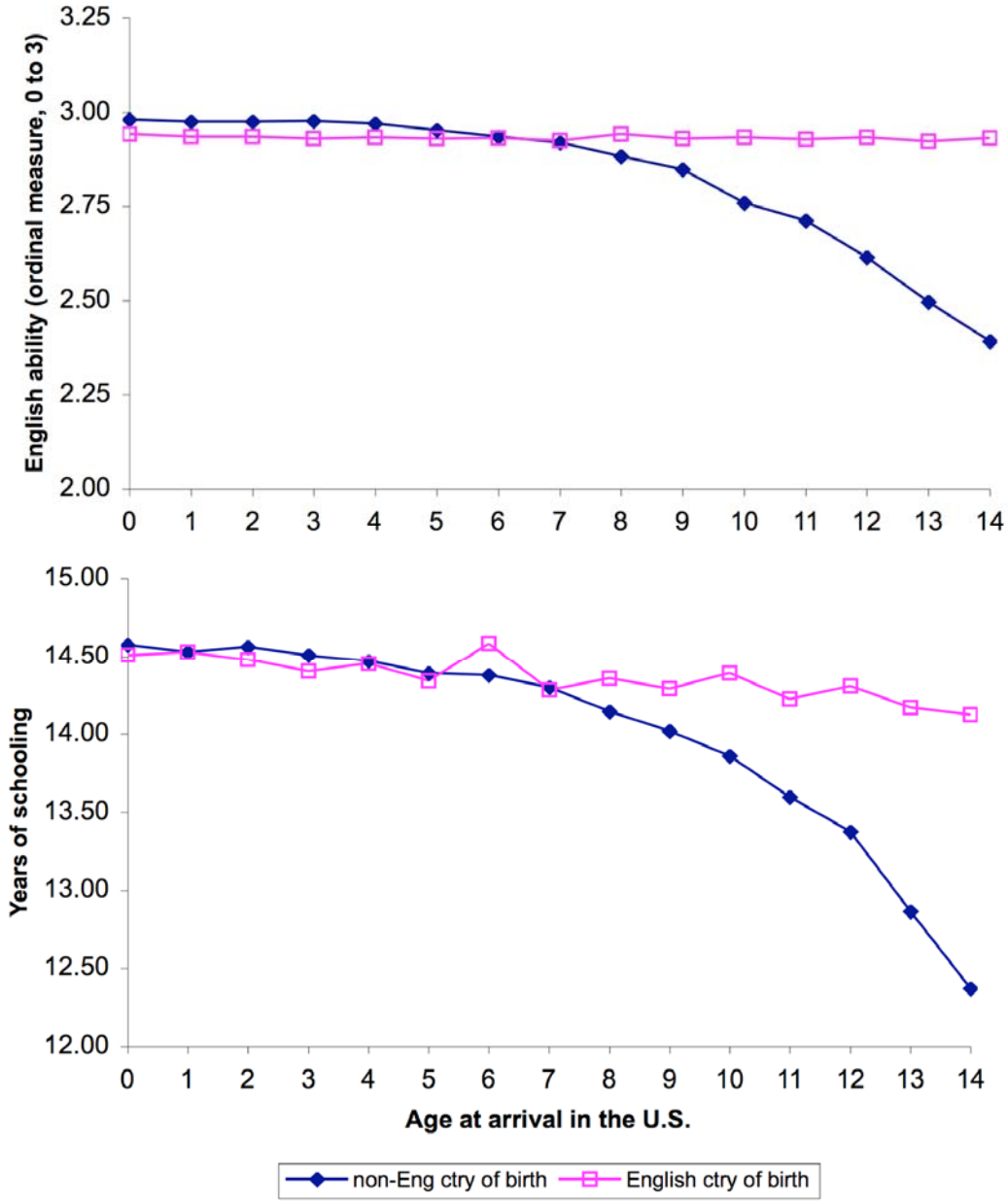


Look for the 'Footprint' of the Critical Period in Socioeconomic Outcomes

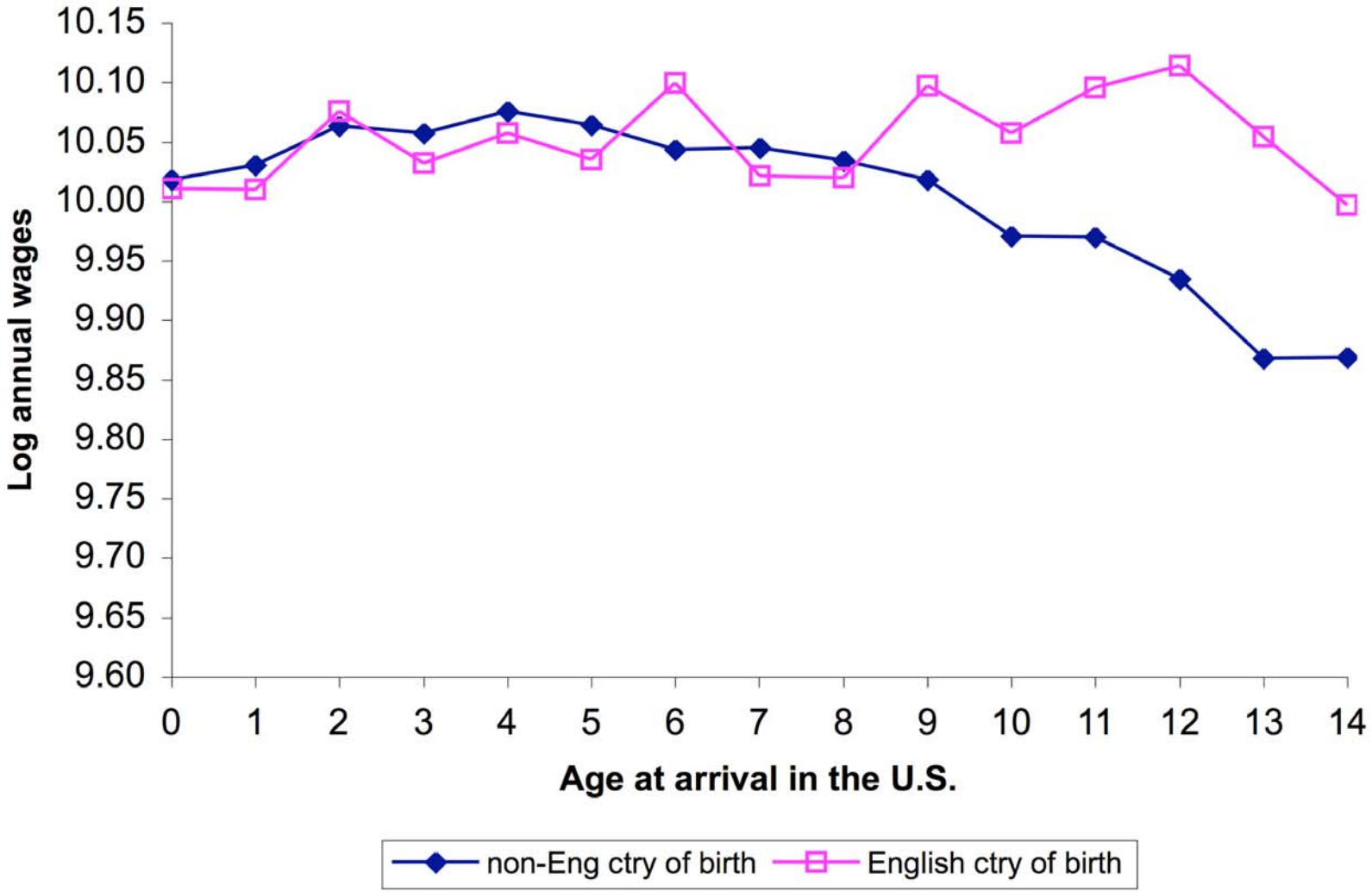
1. Years of Schooling versus Age of Arrival
2. Adult Income versus Age of Arrival
3. Compare Coefficients
4. Instrumental Variables (IV) Estimates
5. Intergenerational: English of their Children
6. Social Outcomes:
    1. Marriage/Divorce
    2. Spousal Outcomes ("sorting")
    3. Fertility
    4. Residence ("enclaves")

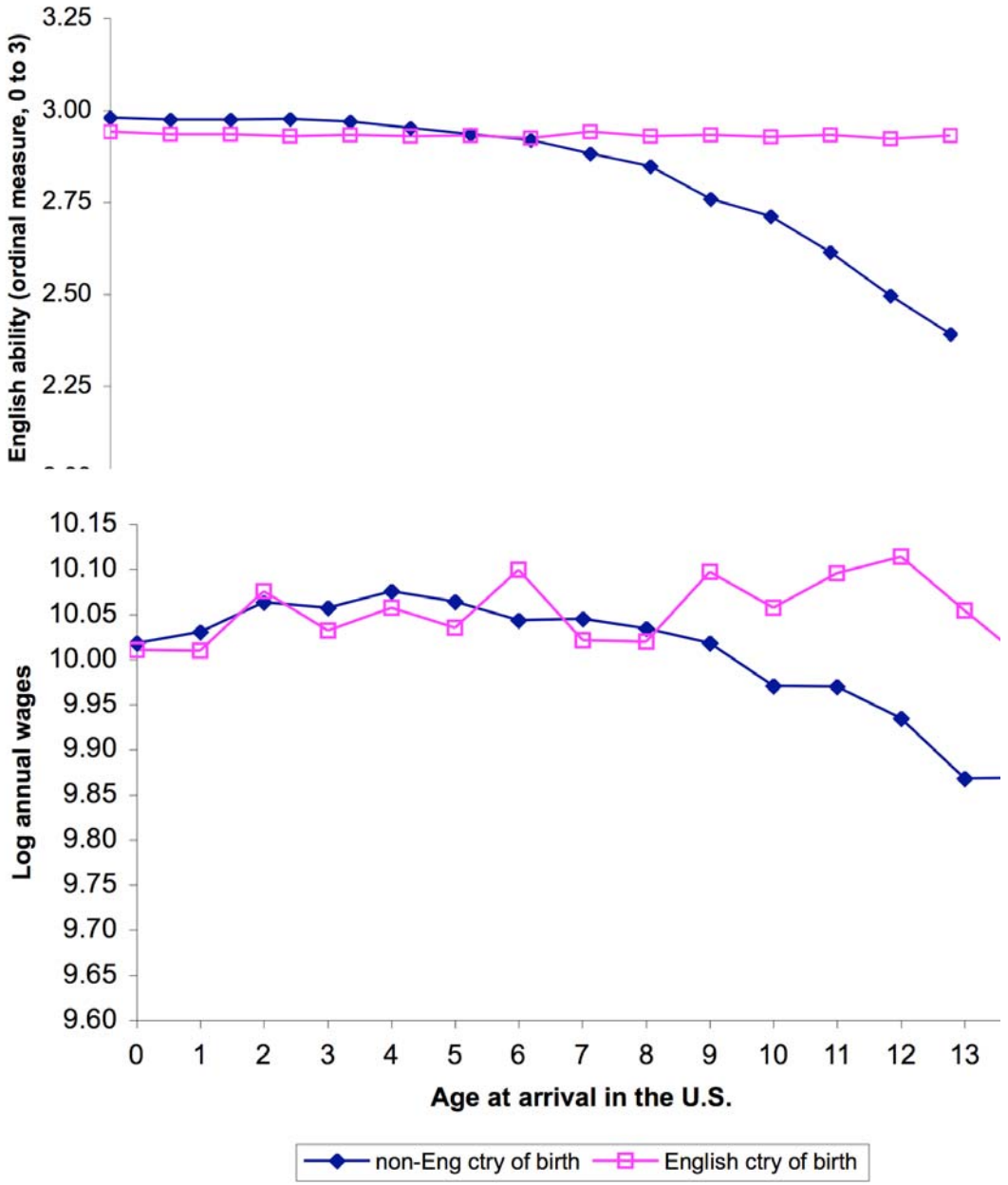
Years of Schooling by Age at Arrival

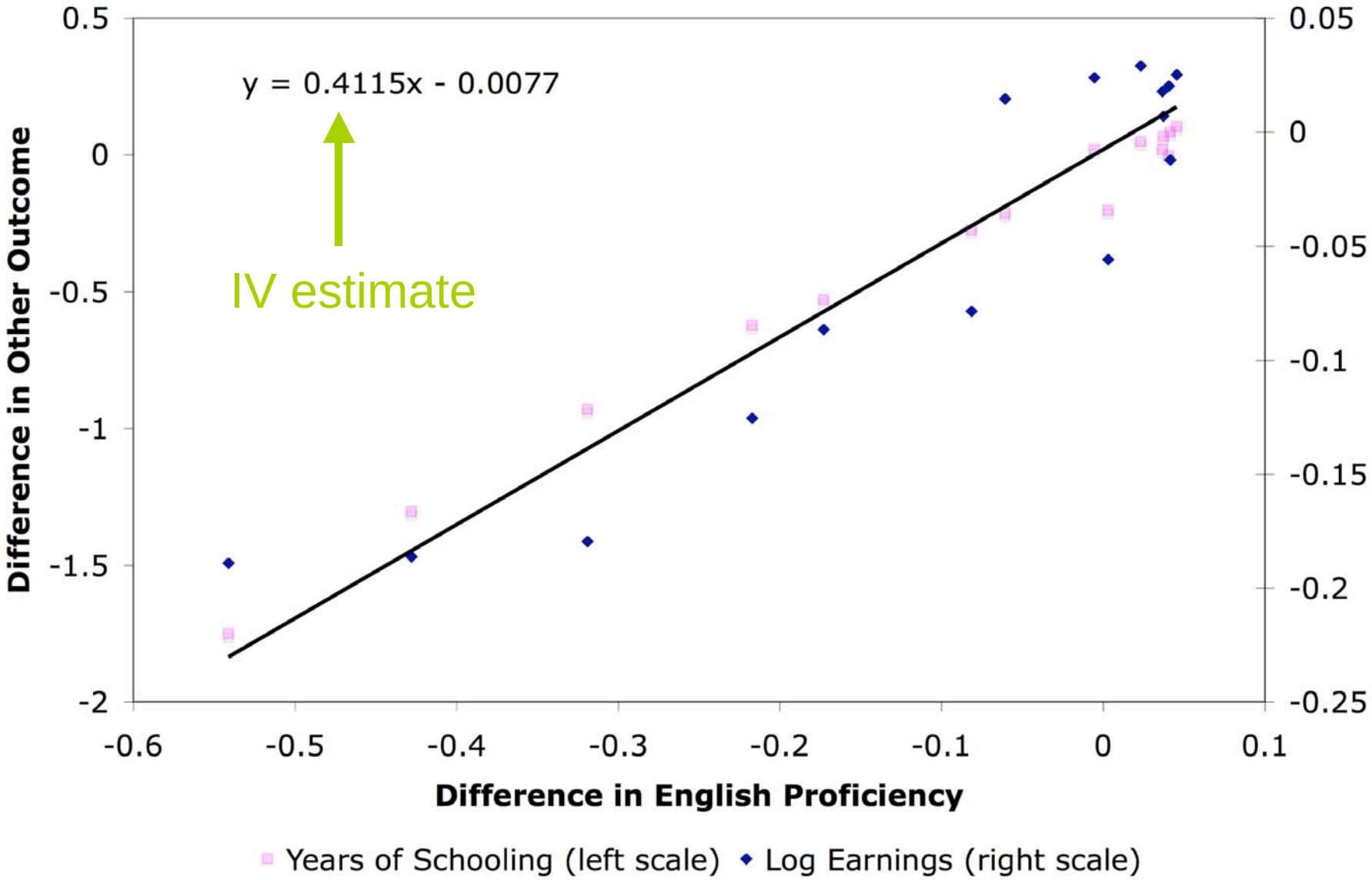



English ability (ordinal measure, 0 to 3)
3.25
3.00
2.75
2.50
2.25
2.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Years of schooling
15.00
14.50
14.00
13.50
13.00
12.50
12.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Age at arrival in the U.S.
non-Eng ctry of birth
English ctry of birth

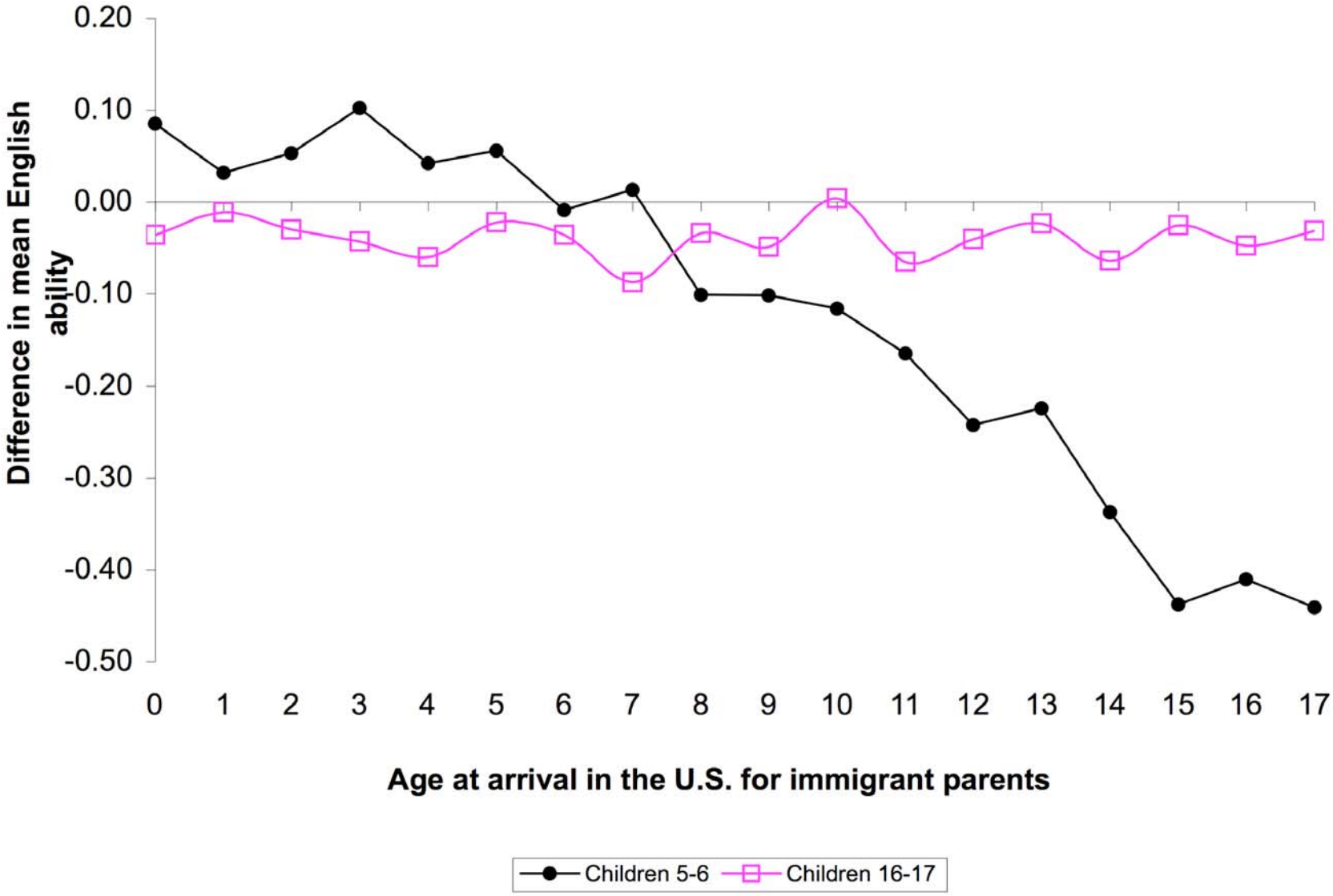
Income by Age at Arrival



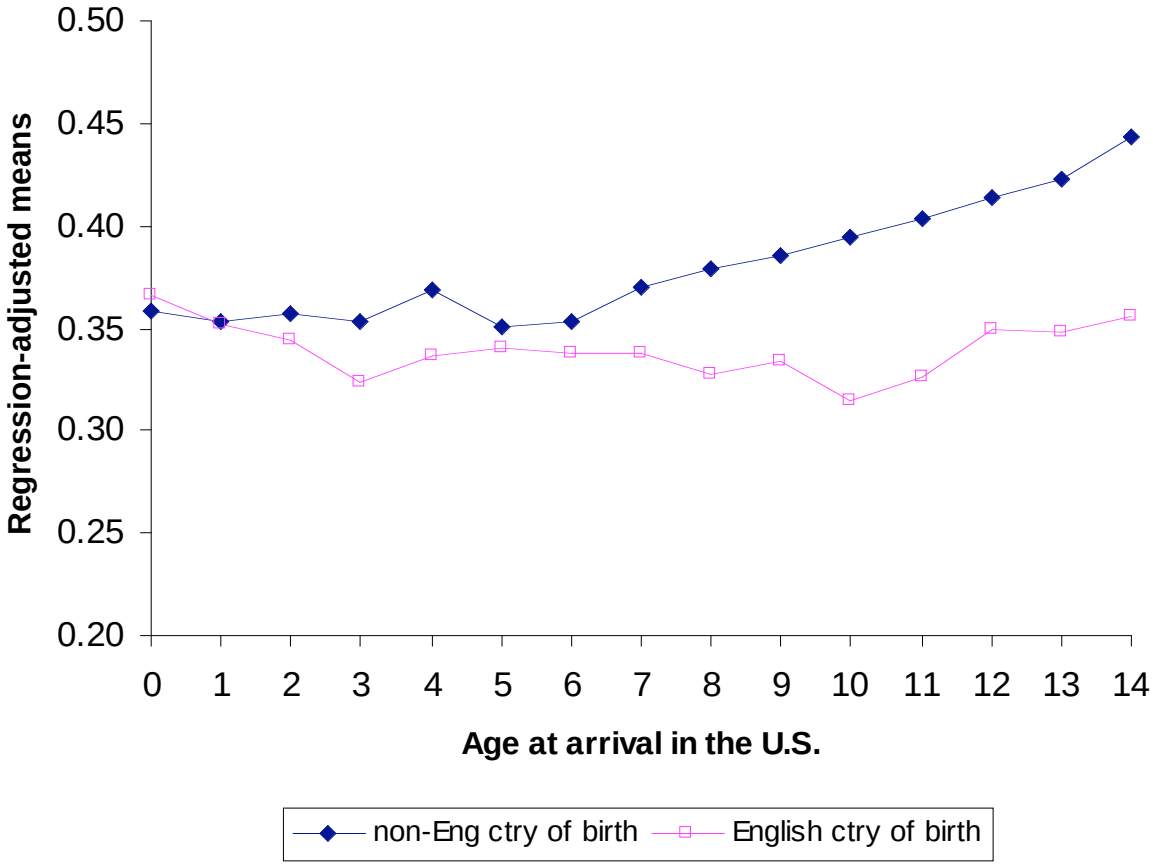

English ability (ordinal measure, 0 to 3)
3.25
3.00
2.75
2.50
2.25
Log annual wages
10.15
10.10
10.05
10.00
9.95
9.90
9.85
9.80
9.75
9.70
9.65
9.60
0 1 2 3 4 5 6 7 8 9 10 11 12 13
Age at arrival in the U.S.
non-Eng ctry of birth
English ctry of birth


y = 0.4115x - 0.0077
IV estimate
Difference in Other Outcome
0.5
0
-0.5
-1
-1.5
-2
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.6
-0.5
-0.4
-0.3
-0.2
-0.1
0
0.1
Difference in English Proficiency
Years of Schooling (left scale)
Log Earnings (right scale)

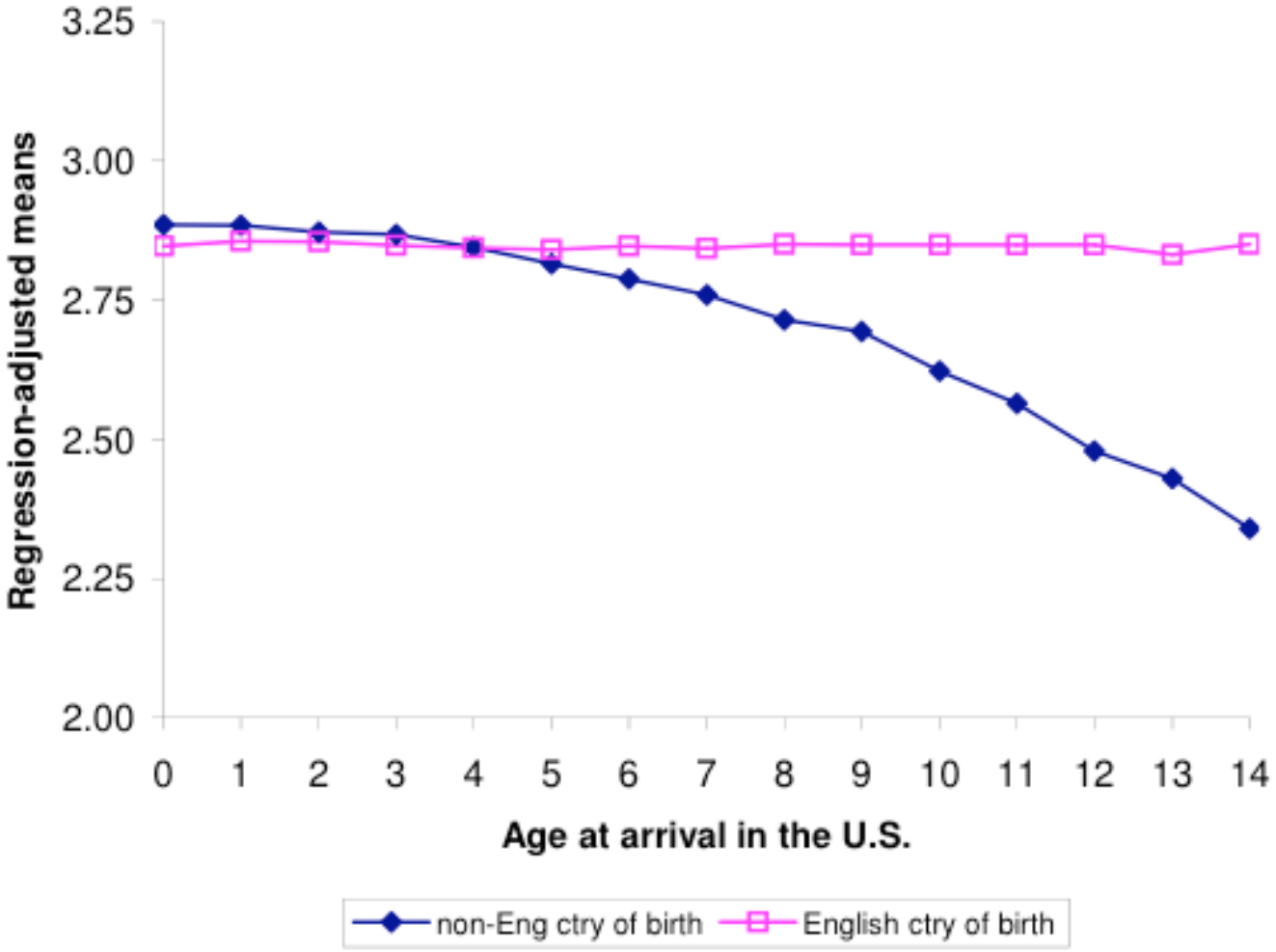
Intergenerational: Child's English Ability by Immigrant Parent's Age at Arrival



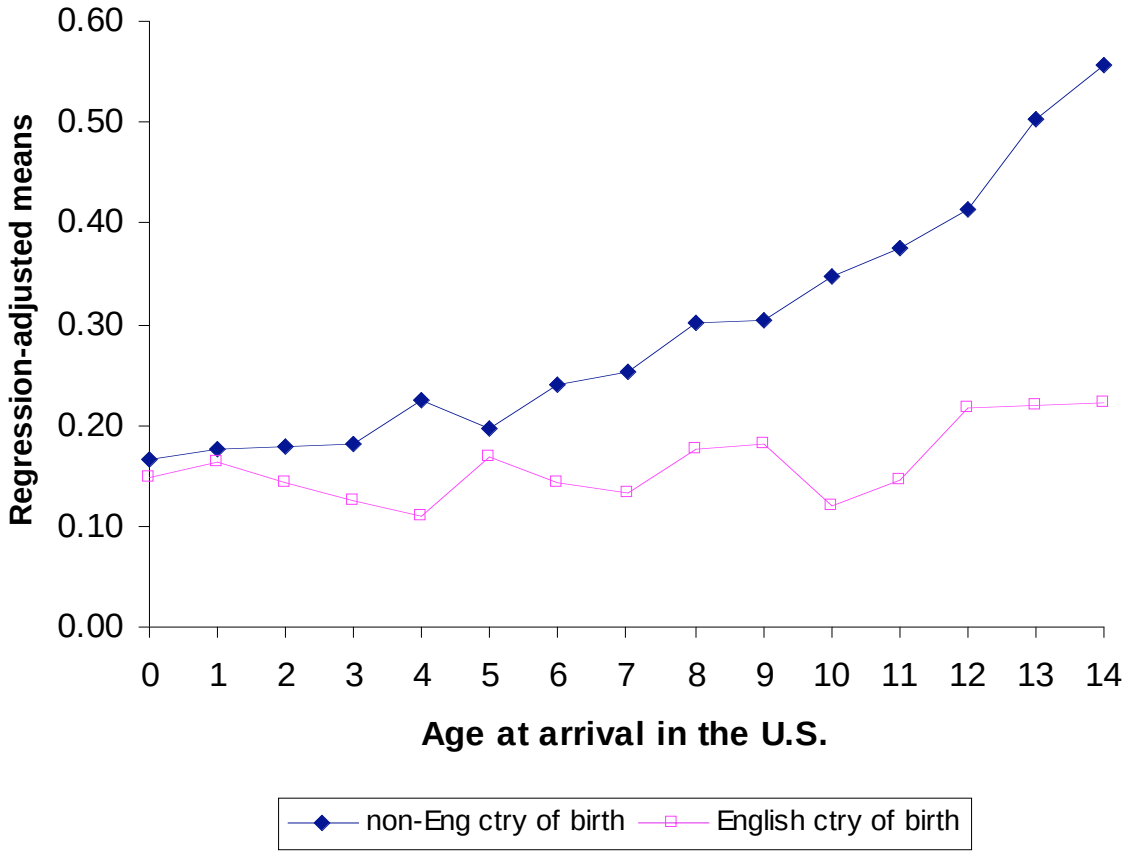
Currently Married with Spouse Present by Age at Arrival



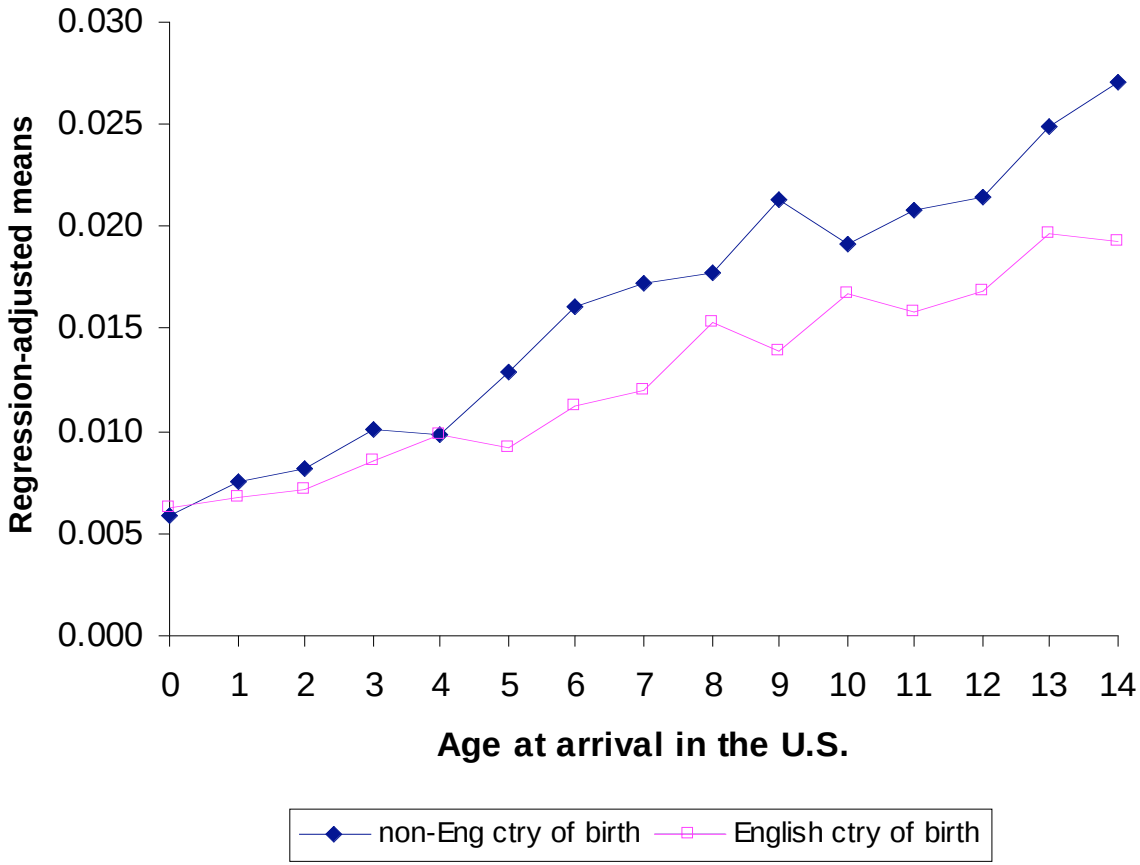
Spouse's English-Speaking Ability by Age at Arrival



Number of Children Living in Same Household by Age at Arrival



Fraction of PUMA Population from Same Country of Birth by Age at Arrival



Robustness Checks

- Key identifying assumption: Immigrants from non-English-speaking countries experience the same non-language age-at-arrival effects as immigrants from English-speaking countries

- But non-language age-at-arrival effects could differ. Anglophone countries…
  - tend to be richer,
  - have better school systems,
  - and their culture and institutions may be more similar to US

- We do the following:
  - Allow age-at-arrival effects to differ by origin-country characteristics: GDP, fertility, school quality, life expectancy
  - Drop Canada and/or Mexico.
  - Focus on the Americas only.
  - Allow for region-specific linear trends

Discussion

- Age at arrival and Critical Period leave their “footprint” in the data

- Working through English proficiency? Better English…
  - higher wages, more education
  - have children with worse educational outcomes
  - more likely be divorced
  - among those married with spouse present, spouse native, higher earning and more educated
  - fewer children
  - less likely to be in enclave, especially for women

- Relation to policy and public debates
  - When/how to target children of immigrants
  - Point system for immigration and age?
  - Evidence of constraints, rather than simply preferences